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Government of India

Annual Report

2017-18

PROTECTION OF PLANT VARIETIES AND FARMERS' RIGHTS AUTHORITY

Department of Agriculture, Co-operation & Farmers Welfare

Ministry of Agriculture and Farmers Welfare,

Government of India

NASC Complex, DPS Marg, New Delhi-110012

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CONTENTS

FOREWORD

I have immense pleasure to present the Annual Report of the Protection of Plant Varieties and Farmers' Rights Authority (PPV&FRA) for the year 2017-18. India, a signatory country of the Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS) of the World Trade Organization (WTO), having ratified the said Agreement, made provision for giving effect to sub-paragraph (b) of paragraph 3 of the Article 27 in Part II of the agreement and enacted the Protection of Plant Varieties and Farmers' Rights Act in 2001(53 of 2001). Subsequently, the Govt. of India established the PPV&FR Authority in 2005.

The mandate of the Authority is to provide an effective legal system as prescribed by the PPV&FR Act, 2001 for protecting plant varieties and the rights of farmers, plant breeders and researchers; to encourage the seed industry for developing new varieties of plants of economic importance and to recognize the farmers for their contribution towards conserving and improving traditional plant genetic resources. India is among the first few countries of the world to enact the PPV&FR Act, 2001 on the *sui generis* system as per the national requirements. The Act fulfils India's international obligations and commitment to the spirit of International Treaty on Plant Genetic Resources for Food & Agriculture (ITPGRFA).

The Authority opened the registration of plant varieties process in 2007 and during the past decade, the Authority has worked towards creating a system for registering new and extant plant varieties through plant varieties registry; developing guidelines for testing distinctiveness, uniformity and stability (DUS) criteria of plant varieties; recognizing farmers across the country who are involved in conserving traditional plant varieties and contribute in development of new varieties; established National Gene Bank, field gene banks, DUS network for crops, etc. The Authority has expanded its registration to 147 crops species and is in process of preparing the DUS test guidelines for othereconomically important crop species. The Authority publishes various publications like *Plant Variety Journal of India*, compendiums and technical brochures on the functions and activities of the Authority. In the year 2017-18, the Authority received a total of 1187 applications belonging to three categories of farmers' (980), new (132) and extant (75) varieties and a total of 619 certificates were issued. Notifications were published in the Gazette of India for seven genera/species for Cashew, Areca-nut, Chironji, Tamarind, Sweet Potato, Cassava & Poplar for the purpose of registration of varieties.

In the year 2012, two branch offices were established, at Ranchi covering the territorial region of Jharkhand, Bihar, West Bengal, Chhattisgarh, Orissa and Andaman and Nicobar Islands; and at Guwahati covering the states of Sikkim, Assam, Meghalaya, Manipur, Mizoram, Nagaland, Tripura and Arunachal Pradesh (Gazette Notification No. 929 dated April 27, 2012). The PPV&FR Authority, with the support of the Ministry of Agriculture and Farmers Welfare, has received formal approval from Govt of India to establish three more branch offices (Gazette Notification No. S.O. 182 dated January 19, 2017). The Authority, in collaboration with respective SAUs, has established these offices at Pune, Palampur and Shivamogga during 2017–18, created infrastructure and engaged people necessary to run offices in an effective manner.

During the reporting year, the Authority has conducted many training-cum-awareness programs in close co-operation with different Zonal Project Directorates, Krishi Vigyan Kendras (KVKs), ICAR institutes, SAUs, NGOs and organizations across the country. The Authority also participated in several Kisan Mela and Kisan Utsav exhibitions at various places showcasing its activities, spreading awareness

about the value of intellectual property rights related to plant varieties and the essence of PPV&FR Act, 2001.

Shri Radha Mohan Singh, Hon'ble Union Minister of Agriculture and Farmers Welfare, conferred Plant Genome Saviour Community Awards 2014-15 and Plant Genome Saviour Farmer Reward and Recognition (2015) on the historic occasion of 100 years of Champaran Satyagraha at Motihari, Bihar on 19th April, 2017. On the occasion, five farming communities; 10 farmers/women conservers and 21 farmer/women conservers were recognized for their contribution conservation of agro-biodiversity.

As a regular activity, a three day review meeting of the DUS Centers was held at Lucknow, jointly with ICAR-IISR and ICAR-CISH, during Jan 15-17, 2018, with the participation of scientists of various DUS centers and DUS projects. For strengthening international relations with Germany and Netherlands, several meetings were conducted to place Indiatechnically at par with UPOV convention.

As a Statutory organization facilitated by Government of India, under the leadership of Hon'ble Prime Minister Sh Narendra Modi, who boldly chalked out the strategy for doubling of Farmers' Income by 2022,the Authority will be committed with the facilitations by the nodal Ministry of Agriculture and Farmers Welfare to take appropriate measures in realizing the dream of Legislators while formulating the unique vision to achieve Farmers' Rights, so that the "*past, present and future*" contributions of millions of farmers and farm women towards the conservation of plant genetic resources and making them available for plant breeding in future to sustain the humanity. The Authority will strive to focus on benefit sharing by optimizing the procedures for plant variety registration, harmonise and adopt best practices and create an effective eco system for innovation and its impact in plant breeding.

I feel privileged to place on record the able guidance and direction provided by the Hon'ble Union Minister of Agriculture and Farmers Welfare, Shri Radha Mohan Singh for the growth and development of the Authority. I am also equally indebted to Dr S K Pattanayak, Secretary, Department of Agriculture, Co-operation & Farmers Welfare for his guidance, leadership and constant support. I express my sincere gratitude to Sh B Pradhan, Additional Secretary and Financial Adviser, Department of Agriculture, Co-operation & Farmers Welfare for his keen interest and valuable support to the Authority. I gratefully acknowledge the contributions of the Hon'ble members of the Authority and other officers who have served various committees/task forces with dedication and helped the Authority. The professional cooperation and technical support provided by Dr. T. Mohapatra, Secretary DARE and Director-General ICAR as well as ready participation by the Scientific force of ICAR and SAU's is gratefully appreciated.

During the period, the Seed Division of DAC&FW of the Ministry has stood by the Authority with the administrative and technical staff providing the logistical and facilitator's support on priority, headed ably by Joint Secretaries Dr. B. Rajender and Shri Ashwani Kumar who have given the Authority their prompt and responsive support. I am grateful to them for the respect and responsibility they have displayed towards the Authority. The staff of Seed Division have always attended to the administrative and procedural call of the Authority and resolved the issues in no times

I also thank the Nodal Officers of the DUS Centers of the Indian Council of Agricultural Research (ICAR), State Agricultural Universities (SAUs), Council of Scientific and Industrial Research (CSIR), Indian Council of Forest Research and Education (ICFRE) and other Institutions for providing continuous support to the Authority for achieving its goals. With deep sense of sincere gratitude, I wish to convey my thanks to the officers of the Department of Agriculture, Cooperation & Farmers Welfare, Ministry of

Agriculture & Farmers Welfare, ICAR, ICFRE, CSIR, Ministry of Law and Justice, Ministry of Environment, Forest and Climate Change for their continuous support and guidance from time to time. I am also thankful to Director, Indian Agricultural Research Institute (IARI), New Delhi and Director, National Bureau of Plant Genetic Resources (NBPGR), New Delhi for successfully shouldering various responsibilities entrusted by the Authority. I acknowledge with thanks the services of our esteemed bankers i.e. State Bank of India and Syndicate Bank for their financial services and support. I am highly grateful for the CAG for their timely support, guidance and direction.

I appreciate and compliment the editorial team for an effective coordination and timely compilation of the Annual Report. The achievements have extraordinary efforts of Dr. R.C.Agrawal, Registrar-General, PPV&FRA with the able support of Registrar Dr. Ravi Prakash, Dr. T.K. Nagarathna and Dr. S.A. Desai, Joint Registrar Sh. D.R.Choudhury, Advisors Sh, J.P.Singh (Finance) and Raj Ganesh (Legal) as well as their dedicated team mates fromheadquarter and branch offices. I gratefully acknowledge their services and contributions.

(K V Prabhu)
Chairperson

ACKNOWLEDGEMENTS

I would like to express my sincere gratitude to Dr. K V Prabhu, Chairperson, PPV&FR Authority, for his dynamism and valuable support, motivation and enthusiasm and critical views in the preparation of this report describing the performance of the Authority during the period of 2017-18.

I acknowledge the kind support and guidance of Sh S.K. Pattanayak, Secretary, Ministry of Agriculture, Co-operation and Farmers Welfare and Dr. B. Rajender, Joint Secretary (Seeds), Department of Agriculture, Co-operation & Farmers Welfare (DAC&FW) and Former, Chairperson (I/C), PPV&FRA.

I owe my special word of appreciations to Sh Dipal Roy Choudhury (Joint Registrar), and Sh D.S. Raj Ganesh (Legal Advisor) for their sincere efforts in compiling and synthesizing this Annual Report. My appreciation goes to Dr Ravi Prakash, Dr. T. K. Nagarathna, Dr. S.A. Desai (all Registrars), Sh J.P. Singh (Financial Advisor), ShUmakant Dubey (Deputy Registrar), Sh R.S. Sengar (Deputy Registrar) for their support in bringing the Annual Report of the Authority.

I am grateful for the inputs provided by Dr. Ajay Kumar Singh (STO), Dr. D.S. Pilania (Technical Assistant), Ms Shipra Mathur, Sh Sanjay Gupta, Sh Nitesh Kr Verma(all Computer Assistants); Dr. Manisha Gautam, Dr. Jasbir Madan, Dr. Jyoti Jaiswal (all Registry Assistants). My special word of thanks goes to Mr. Shyam Narayan Prasad, Mr. Arvind Kumar Rai (Computer Assistants), Mr. Suneet Kumar and Mr. Stephen Tamu(Registry Assistants), Mr Gourav Sharma, Mr. Vikram Bhushan, Ms. Neeta Kumari, Mr. Santosh Singh Bisht, Sh Praveen Tripathi, Sh Vivek Sanger, Sh Ramvir (Office Assistants) who have invested their heart and soul in providing assistance in bringing this document for completion in a time bound manner. This is also to acknoledge the contribution of Sh B K Bansal(SrAsstt Accounts) and Sh Shyam S Lakra (Sr Asstt Admn) to work in tandem as back support in regular Financial and Administrative work.

It is needless to mention that the sincere contribution of Dr Shivaji Gurav(Deputy Registrar, Pune Branch Office); Dr K G Parameshrawappa (Deputy Registrar, Shimoga Branch office); Dr A H Khan(Deputy Registrar, Guwahati Branch office) and Dr Satish Sharma(Deputy Registrar, Palamapur Branch office), whose dedication towards the cause of PPV&FRA is a matter of great pride for us. I am also thankful to all the staff of PPV&FRA for providing necessary inputs in the preparation of Annual Report.

The Authority is highly thankful for the support and co-operation received from of Seeds Division, Internal Finance Division of the DAC&FW and also from Indian Council of Agricultural Research (ICAR). We sincerely cherish the partnership that PPV&FR Authority has built over time with the various institutes of the ICAR, SAUs, CSIR, ICFRE etc for their co-operation in conducting DUS trials and providing valuable inputs for the preparation of this report.

(R C Agrawal)
Registrar General

EXECUTIVE SUMMARY

India enacted the Protection of Plant Varieties and Farmers' Rights (PPV&FR) Act in 2001 (53 of 2001) by adopting *sui generis* system. The main objective of the PPV&FR Act is to provide for the establishment of an effective system for protection of plant varieties, the rights of farmers and plant breeders and to encourage the development of new varieties of plants of economic importance. It is a unique Act, which fulfills the spirit of International Treaty on Plant Genetic Resources for Food & Agriculture on one hand and conforms to the provisions of UPOV, 1978 Convention on the other. It also strikes a balance between the rights to breeders and the farmers as per the national requirement. For the purpose of this Act, the PPV&FR Authority was established in the year 2005. The Authority has been consistently improvising the system of registering the plant varieties, connecting the stakeholders, encourage innovation in seed sector, acknowledge the contribution and value of farmers of the nation, develop a national gene fund, build and maintain gene banks etc.

So far, the Government of India notified 147 crops species on the recommendations of PPV&FR Authority for plant variety registration. During the reporting period, the Authority has notified seven genera species. In the year 2017-18, the Authority received a total of 1187 applications belonging to three categories of farmers' (980), new (132) and extant (75) varieties. The maximum number of applications belonged to farmers' category including (980), followed by applications filed by public institutions (57) and private organizations (150). Highest numbers of applications were received for rice (289), followed by maize (97), mango(67), bottle gourd (42), pearl millet(39), black gram and pigeonpea (37 each) , bitter gourd and green gram(23 each), chilli(21) and other crops.

In the annual year of 2017-18, a total of 619 certificates of registration were issued. In addition to the Farmers' varieties (361), other categories of plant varieties including new varieties (76), varieties of common knowledge (99) and extant notified varieties (83) were registered. The highest number of certificates were issued in cereals (439), followed by fibre crops (69), vegetables and cucurbits (61), legumes (19), oilseeds (19), spices and sugar crops(6 each).

In the 27th meeting of the PPV&FR Authority, held on 31 May, 2017, the members were appraised on gazette notification for 3 branch offices at Shimoga, Palampur and Pune; proceedings of the 1st meeting of the Standing Committee; adoption of MACP for eligible employees. In the 28thmeeting , held on 22 Nov, 2017, consolidated proposal for amendment in PPV&FR Act, 2001, PPV&FR Rules, 2003 and PPV&FR Regulations, 2006, handing over of seeds of registered varieties after the period of protection is over, dispensing with the printing of *Plant Variety Journal of India*, approval of Annual Accounts 2016-17 and other administrative matters were discussed. .

The Legal Cell of the Authority pursued the cases filed in different Courts. Thirty cases were pending before Authority, out of which two were disposed-off and the remaining cases are still pending against the Authority. A consolidated notification for 140 species, which were eligible for registration till date, was published in Gazette of India, vide S.O. No. 1536(E), dated May 12, 2017. Other notifications were published in the Gazette of India for seven genera/species for Cashew, Areca-nut, Chironji, Tamarind, Sweet Potato, Cassava & Poplar for the purpose of registration of varieties. Apart from these, the gazette notification S.O. No 908, dated March 01, 2018, was also issued for appointment of Chairperson, PPV&FRA.

The Right to Information (RTI) Cell received 35 applications either directly or through transfer from other Departments seeking information under RTI Act, 2005. The information sought was made available within the stipulated timeframe.

PPV&FR Authority organized *Plant Genome Saviour Awards Ceremony* on 19th April, 2017. Five communities were awarded with PGSC Award with Rs 10 lakh, a citation and a memento; ten farmers/ farm women were awarded with Plant Genome Saviour Farmers Rewards with Rs 1.5 lakh, a citation and a memento; twenty farmers/farm women were awarded with Plant Genome Saviour Farmer Recognition with Rs 1 lakh in cash, a citation and a memento. The function was organized at Motihari, Champaran, Bihar on the occasion of 100 years of Champaran Satyagraha and awards were given by Hon'ble Union Minister for Agriculture and Farmers' Welfare, Sh Radha Mohan Singh.

Funds were provided to various institutions, DUS centers, ZPDs, KVKs and other stakeholders for conducting training-cum-awareness programmes across the country. The Authority participated in farmers' fairs, agriculture fairs held at various places to disseminate the information on Farmers' Rights, registration of varieties including farmers' varieties and important provisions of PPV&FR Act, 2001. Special drive of awareness was undertaken in the North-Eastern Hill areas to mobilize farmers for registration of their traditional and farmers' varieties including landraces. The Krishi Vigyan Kendras under ICAR was instrumental in supporting this endeavour.

Under the framework of Indo-German Bilateral Cooperation on Seed Sector Development, several workshops were organized including hands on training on Rose, Apple with the participation of Experts from The Netherlands and Germany. An International workshop was also organized during 22-23rd Feb 2018 with the participation of UPOV, BSA, The Naktuinbouw, CIOPORA, representatives of Public/private Seed Industry in India and abroad. The Authority was consulted by the Department of Agriculture, Cooperation & Farmers Welfare on various technical matters, including International affairs relating to bilateral cooperation, ITPGRFA, CBD, UPOV, WIPO and other international conventions. Indian delegation visited 74th Session of Administrative and Legal Committee at UPOV HQ at Geneva; plant variety protection offices at The Netherlands and Germany.

The Authority received Rs. 1517.10 lakh as grants-in-aid from Department of Agriculture, Cooperation & Farmers Welfare, during the year 2017-18 and utilized Rs. 1485.81 lakh after adjusting unspent balance of Rs. 126.69 lakh of previous year leaving a balance of Rs. 95.40 lakh.

The Annual Report of Authority was timely forwarded to the Department of Agriculture, Cooperation & Farmers Welfare for placing before both the houses of Parliament. The annual accounts of the Authority for the year 2017-18 was finalized and audited within the prescribed time schedule and placed before both the houses of the Parliament within statutory time limit.

CHAPTER 1: BRIEF INTRODUCTION

Plant genetic resources are vital for the survival of humanity as they serve as sources of genetic variation to create new varieties of plants for food, fibre, fodder, forest and industrial use. Traditional plant breeders, including farming community/forest dwellers nurture these diversity, made selection to produce plants of use since millennia. Modern plant breeders collected genetic diversity through exploration in biodiversity rich zones, use different tool to increase values for cultivation. Plant Breeders' Rights are therefore a mean to recognise their contribution and create an ecosystem that sustain innovation continuum, can establish a mechanism to exert responsible stewardship over germplam, support long term research and development that enhance agricultural productivity, promote plant breeding in public/private sector and provide high quality seeds/planting material to farmers.

Enforcement of Intellectual Property Rights (IPRs) in Agriculture led to the "*Plant Patent Act*, 1930" in USA and formation of the *Union Internationale pour la Protection des Obtentions Végétales* (UPOV) or the International Union for the Protection of New Varieties of Plants in 1961 at Europe which was subsequently revised in 1972, 1978 and 1991. Presently, there are 75 member states as part of the UPOV convention including regional associations like EU, OAPI. India has been an observer to the UPOV.

Plant variety protection through Plant Breeder's Rights was brought into major focus by the General Agreement on Tariffs and Trade (GATT), a multilateral instrument governing international trade. GATT negotiations in Uruguay Round led to the establishment of World Trade Organisation (WTO) in 1995. Article 27.3(b) of the Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPs) under WTO, provides that members shall provide for the protection of plant varieties, either by patents or by an effective *sui generis* system or by any combination thereof.

The Government of India enacted the *Protection of Plant Varieties and Farmers' Rights (PPV&FR) Act* in 2001 (53 of 2001) to provide for the establishment of an effective *sui generis* system for protection of plant varieties, the rights of farmers and plant breeders and to encourage the development of new plant varieties of economic importance.

PPV&FR Rules were notified on 12 September, 2003 and amended from time to time, thereafter. Subsequently, for the purposes of the Act, the Government of India having exercised the powers conferred under the section 3 (1) of this Act, established the Protection of Plant Varieties and Farmers' Rights Authority on 11 November, 2005, vide Gazette notification S.O. 1588(E).

1.1 Objectives of the PPV&FR Act, 2001

Following are the objectives of the Act:

- To establish an effective system for protection of plant varieties, the rights of farmers and plant breeders and to encourage the development of new varieties of plants
- To recognize and protect the rights of the farmers in respect of their contribution made at any time in conserving, improving and making available plant genetic resources for the development of new plant varieties
- To protect plant breeders' rights to stimulate investment for research and development both in the public and private sector for development of new plant varieties
- To facilitate the growth of seed industry in the country that will ensure the availability of high quality seeds and planting material to the farmers

1.2 Salient Features of the Act

The Act is based on *sui generis* system and is unique in sense that it concurrently recognizes the rights of breeders, farmers, farming communities and researchers. It confers exclusive rights upon the breeder or his successor, his agent or licensee, to produce, sell, market, distribute, import or export of the registered variety. As far as farmers' rights are concerned, the Act recognizes a farmer as cultivator, conserver and breeder and provides that the farmers' variety can also be registered. Further, the Act provides for compulsory license of a registered variety, if the seeds/propagating material is not available to the public at a reasonable price or quantity. Any person or group of persons or any organization can also claim for benefit sharing, if the plant genetic material belonging to them is used in the development of a registered variety. The researchers are conferred the right to use any registered variety for conducting experiment or research and the use of a variety by any person as an initial source of variety for the purpose of creating the other varieties. India is a pioneer country where a national legislation has been enacted to establish and secure Farmers' Rights. The Act also recognizes the past, present and future contributions of the farming communities and provides an opportunity for the award to farming communities/farmers for their contributions in agro-biodiversity conservation.

1.3 PPV&FR Authority

The Authority is a body corporate, having perpetual succession and a common seal with the power to acquire, hold and dispose of movable and immovable properties and to contract, and shall by the said name sue and be sued. The head office of the Authority is at New Delhi and it is functioning from a leased space in the premise of the National Agricultural Science Centre Complex, Dev Prakash Shastri Marg, Pusa Campus, New Delhi. The Authority consists of Chairperson and fifteen members as on 31 March, 2018.

1.4 Plant Variety Registration

The PPV&FR Authority has finalized the distinctiveness, uniformity and stability (DUS) test guidelines for registration of 147crop species covering cereals, pulses, millets, oilseeds, spices, vegetables, flowers, medicinal and aromatic plants and fibre crops. The Authority has issued 619 certificates of registration for plant varieties (under new, extant and farmers' variety category) during the reporting year 2017-18. To attract more applications and for the benefit of different stakeholders, the Authority regularly organizes/supports awareness and capacity building programmes.

The PPV&FR Authority has also established network of DUS test centres across the country under the Central Sector Scheme for the implementation of PPV&FR Act, 2001, to verify the claims of candidate varieties by applicants, maintenance breeding, multiplication of reference/example varieties/ the varieties notified under section 5 of the Seeds Act, 1966, and generation of database for varietal characteristics as per crop specific DUS (Distinctiveness, Uniformity and Stability) guidelines. In addition, DUS tests for the candidate varieties are being conducted at crop specific centres. The data recorded as per the DUS test guidelines is submitted by these centres to Authority for further analysis. The Authority, in consultation with the ICAR institutes and SAUs has identified potential crop species of economic importance and supports projects for the development of the DUS guidelines. The Authority has established its National Gene Bank, field gene banks across the country. It regularly publishes *Plant Variety Journal of India*and maintains the National Register of Plant Varieties at Headquarters and also its branch offices.

1.5 Plant Breeders' Rights

Breeders' Right is one of the pivotal provisions of this Act with far reaching implications in the context of Indian agriculture and global scenario. The breeder also enjoys provisional protection of his/her variety against any abusive act committed by any third party during the period between filing of application for registration and the final decision taken by the Authority. Similarly, researcher's rights are also granted. However, for repeated use of a registered variety as an initial source of variety for the purpose of developing a new variety, the authorization of the breeder of the registered variety is necessary.

The plant variety protection as enshrined in the Act follows a broad principle of internationally recognized system of DUS and novelty for a new variety. Any person can apply for registration in any of the following:

- **New variety** of such genera and species as specified under section 29(2) of the Act.
- **Extant variety**
  - Notified under section 5 of Seeds Act, 1966,
  - Variety of common knowledge (VCK),
- **Farmers' variety(also a part of extant variety)**
  - Traditionally cultivated and evolved by the farmers in their fields,
  - Wild relative or landrace of a variety about which the farmers possess common knowledge.
- **Essentially derived variety (EDV)**
  A variety predominantly derived from an initial variety, or from a variety that itself is predominantly derived from such initial variety, while retaining the expression of the essential characteristics that result from the genotype or combination of genotypes of such initial variety

1.6 Farmers' Rights

The Act provides following rights to the farmers:

- *Right to register their varieties*: A farmer who has bred or developed a new variety is entitled for registration and other protection as a plant breeder under this Act.
- *Right on seed*: A farmer is entitled to save, use, sow, resow, exchange, share or sell his farm produce including seed of a variety protected under this Act; provided that the farmer is not entitled to sell branded seed of a variety protected under this Act.
- *Right for reward and recognition*: A farmer or community of farmers engaged in the conservation and improvement of plant genetic resources (landraces and wild relatives of economic plants) are entitled for the Plant Genome Saviour Award, Reward and Recognition, provided their plant material has been used in development of varieties registrable under this Act.
- *Protection of innocent infringement*: If a farmer being, infringed according to section 65 of PPV&FR Act, 2001, can prove before court that he or she was not aware of the existence of such rights at the time of infringement; he or she will not be charged.
- *Fee Exemption*: A farmer or group of farmers are not liable to pay any fee payable for inspection of any document or for obtaining a copy of any decision or order or document under this Act. Farmers have the privilege of being completely exempted from payment of any kind of fees or other payments that are normally payable for variety registration; testing of varieties and other services rendered by the PPV&FRA; as well as for legal proceedings related to infringement or other cases in courts, tribunal etc.
- *Reasonable Seed Price*: Farmers have the right to access seed of registered varieties at a reasonable and remunerative price. When this condition is not met, the breeder's exclusive right over the variety can be revoked under the provision concerning compulsory licensing, and the breeder is obligated to license the seed production, distribution and sales of the variety to any competent person. Most of the laws for plant variety protection have provisions on compulsory licensing of protected varieties to ensure adequate seed supply to farmers.
- *Authorization of farmers' variety*: In the development of an essentially derived variety from a farmer's variety and its commercialization. The authorization should be given with the consent of the farmer or group of farmers who have contributed in the conservation or development of such a variety. Such a process can allow farmers to negotiate the terms of authorization with the breeders, which may include royalties, benefit-sharing etc.
- *Right for compensation*: When any propagating material of a variety registered under this Act has been sold to a farmer, the breeder of such variety should disclose the expected performance under given conditions. If the propagating material fails to provide such performance under such given conditions, the farmer can claim compensation before the Authority. The Authority would then notify the breeder of the variety the

issue and after providing him an opportunity to file an opposition, may direct the breeder to pay compensation to the farmer as it deems fit.

The Farmers' Cell at the Authority looks after the IPR registration of farmers' varieties, conducts country-wide training-cum-awareness programmes, and identifies farmers and farmer communities for their contribution towards conserving germplasm and developing new varieties.

1.7 Registration of Varieties

An application for registration of a plant variety and its denomination can be made under the following categories:

- **New Variety:** On the date of filing of application for registration if the variety has been commercialized for period of less than one year then it is a new variety
- **Extant Variety:** Consist of the following categories namely:
  - **Extant variety notified under section 5 of Seeds Act, 1966:** Varieties notified under Section 5 of Seeds Act, 1966 are eligible for registration under this category
  - **Farmers' variety:** Traditionally cultivated and evolved by the farmers in their fields and includes wild relative or land race or a variety about which the farmers possess common knowledge
  - **Variety of Common Knowledge:** which are not notified under Section 5 of Seeds Act, 1966 and are in commercial chain for more than a year
- **Essentially Derived Variety:** A variety pre-dominantly derived from an initial variety and should fall either under new or extant category

1.8 Period of field-testing of varieties

The application is processed and the applicant is required to deposit DUS test, registration and any other fees, as may be required. After receipt of necessary fees and seeds and to an satisfactory examination of the application at the Plant Varieties Registry, the Registrar may sent the variety to crop specific centres for conducting DUS test. The period of DUS testing is as follows:

- **New Varieties:** Two similar crop season at two locations
- **Farmers' Variety and VCK:** One crop season at two locations
- **Extant variety notified under section 5 of Seeds Act, 1966:** No DUS testing is conducted but variety is processed by an EVRC Committee which recommends for registration
- **EDV:** DUS testing is not mandatory but field test is conducted to ascertain DUS criteria

After the receipt of DUS test result, the application is processed and distinctiveness is ascertained through DUS test and comparison across the database. Subsequently, the passport data of the variety is published in the *Plant Varieties Journal of India*.

The application is advertised in *Plant Variety Journal of India* inviting opposition within a period of three months from the date of publications. If no opposition is filed or if opposition filed is rejected, the variety proceeds for registration. The period of protection is as follows**:**

1.8.1 Protection Period and Crops

A total of 147 crop species are presently eligible for protection (Annexure VIII). The period of protection for field crops is of 15 years, whereas that of trees and vines is for 18 years. The extant varieties notified are given a protection for 15 years from date of notification under Seeds Act, 1966.

1.9 Rights conferred to the breeder

Registration gives exclusive rights to produce, sell, market, export or imports the variety along with its denomination. This right is subject to farmers' rights that farmers can use seeds of registered varieties in an unbranded manner.

1.10 Award/Rewards to Farmers'/Farming Communities

Section 45(2) of the Act reads with Rules 70 (2) (a) of PPV&FR Rules, 2003 provides for support and reward, to farmers, communities of farmers, particularly the tribal and rural communities engaged in conservation, improvement and preservation of genetic resources of economic plants and their wild relatives, particularly in areas identified as agro-biodiversity hotspots from National Gene Fund. To operationalize these provisions, Plant Genome Savior Community Awardwas instituted in 2009–10. A maximum of five such awards can be conferred annually. Along with this, ten farmers are conferred the Plant Genome Saviour Farmer Reward and fifteen farmers are conferred Plant Genome Saviour Farmer Recognition certificates. The details of the awards conferred are mentioned in Table 1. The selection of awardees is made by a committee of experts/ scientists headed by an eminent scientist/ subject matter specialist.

Table 1: Details of the Plant Genome Savior awards, rewards and recognition

Award	Details	Application
Plant Genome Saviour Community Awards	Five farming communities are awarded each year. Each award includes a citation, a momento and Rs. 10 lakh.	Advertisement for these awards is published in the National dailies and on the Authority website: (*http://www.plantauthority.gov.in/forms.htm*) The applications should be forwarded through Chairperson or Secretary of the concerned Panchayat Committee or concerned District Agricultural Officer or Director of Research of concerned State Agriculture University or District Tribal Development Officer
Plant Genome Saviour Farmers' Rewards	Ten farmers are rewarded every year. Each reward includes a citation, a momento and cash of Rs. 1.5 lakh.	
Plant Genome Saviour Farmers' Recognitions	Twenty farmers are rewarded every year. Each reward includes a citation, a momento and cash of Rs. 1 lakh.	

CHAPTER 2: PROGRESS OF PLANT VARIETIES REGISTRY

2.1 Publication of DUS test guidelines for crop species

During 2017-18, DUS guidelines have been developed for seven crop species and published in *Plant Variety Journal of India* as mentioned in **Table 1** totalling to 147 crop species for which Authority has developed DUS guidelines and notified in Gazette of India. Registrations are now openfor plant variety protection under *PPV&FR Act, 2001* for the varieties under these different crop species.

Table 2: DUS test guidelines developed for different crop species during 2017-18

Sl. No.	Name of the crop	Botanical name	Details about PVJ
1	Cashew	*Anacardium occidentale* L.	Vol. 11, No.05, May 04, 2017
2	Arecanut	*Areca catechu* L.	
3	Chironji	*Buchanania lanzan* Sperng.	Vol.11, No. 07, July 04, 2017
4	Tamarind	*Tamarindus indica* L.	
5	Sweet potato	*Ipomoea batatas*L. Lam	Vol.11, No.10, October 09, 2017
6	Cassava	*Manihot esculenta* Crantz	
7	Poplar	*Populus deltoides* Bartr.	

2.2 Progress in number of applications received

During 2017-18, a total of 1187 applications were received for registration with major applications from cereals, vegetables and legumes (Table 3).

Table 3:Total number of applications received (crop group-wise)

Crop Group	Total	Crop Group	Total
Cereals	526	Oilseeds	88
Fibre Crops	7	Spices	68
Flowers	10	Sugar Crops	5
Fruits	98	Trees	5
Legumes	156	Vegetables	217
Medicinal and Aromatic plants	7		
Grand Total			**1187**

Highest number of applications is received for rice (289) and maize (97) among cereals; mango (67) among fruit crops; tomato (24), bitter gourd (23) and bottle gourd (42) among vegetables; pigeon pea (37) and black gram (37) among legumes (Table 4).

Table 4: Total number of applications received (crop-wise)

Sl. No.	Common Name	Total	Sl. No.	Common Name	Total	Sl. No.	Common Name	Total
1	Acid Lime	3	29	Garlic	5	57	Papaya	6
2	Apple	1	30	Ginger	4	58	Pearl Millet	39
3	Bael	1	31	Grapes	1	59	Pigeon pea	37
4	Banana	7	32	Green gram	23	60	Potato	7
5	Barley	10	33	Groundnut	5	61	Pumpkin	17
6	Barnyard Millet	3	34	Guava	5	62	Rajgeera	1

Sl. No.	Common Name	Total	Sl. No.	Common Name	Total	Sl. No.	Common Name	Total
7	Betelvine	1	35	Indian Gooseberry	1	63	Rapeseed (Gobhi Sarson)	4
8	Bitter Gourd	23	36	Indian jujube (Ber)	1	64	Rapeseed (Toria)	12
9	Black gram	37	37	Indian mustard (Karan Rai)	1	65	Rice	289
10	Bottle Gourd	42	38	Indian mustard (Sarso)	20	66	Ridge gourd	16
11	Brahmi	1	39	Jamun	1	67	Rose	1
12	Brinjal	20	40	Jute	3	68	Safflower	1
13	Cabbage	1	41	Kidney bean	14	69	Sesame	26
14	Castor	4	42	Kodo Millet	9	70	Small cardamom	1
15	Casurina	5	43	Lentil	10	71	Sorghum	16
16	Cauliflower	2	44	Linseed	6	72	Soybean	7
17	Chickpea	19	45	Litchi	1	73	Spinach beet	1
18	Chilli	21	46	Little Millet	1	74	Sugarcane	5
19	Coriander	20	47	Maize	97	75	Sunflower	2
20	Cucumber	9	48	Mango	67	76	Taro	9
21	Diploid Cotton	1	49	Marigold	3	77	Tetraploid Cotton	3
22	Durum Wheat	3	50	Menthol Mint	2	78	Tomato	24
23	Elephant Foot Yam	2	51	Muskmelon	1	79	Tuberose	1
24	Faba bean	3	52	Noni	2	80	Turmeric	20
25	Fenugreek	3	53	Nutmeg	15	81	Vegetable Amaranth	2
26	Fieldpea	16	54	Okra/Lady's Finger	15	82	Walnut	1
27	Finger Millet	17	55	Onion	3	83	Watermelon	2
28	Foxtail Millet	9	56	Orchid	5	84	Wheat	32
Grand Total								**1187**

Out of 1187 applications, 980 applications were filed by farmers and 207applications were filed by public and private sectors (Fig 1). Under extant notified category, 32 applications were received and 43 under extant VCK and 132 under new category were also filed for registration (Fig 2).

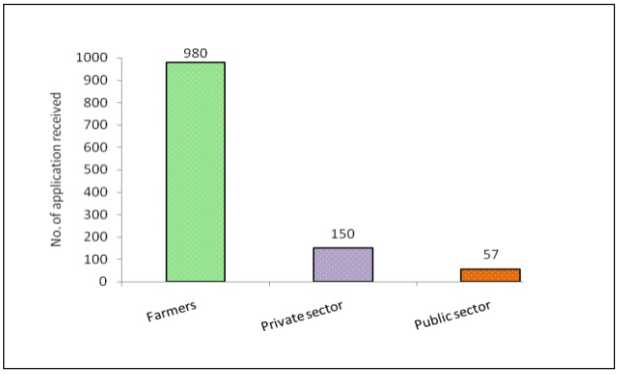


Fig 1: Applications received applicant category-wise during 2017-18

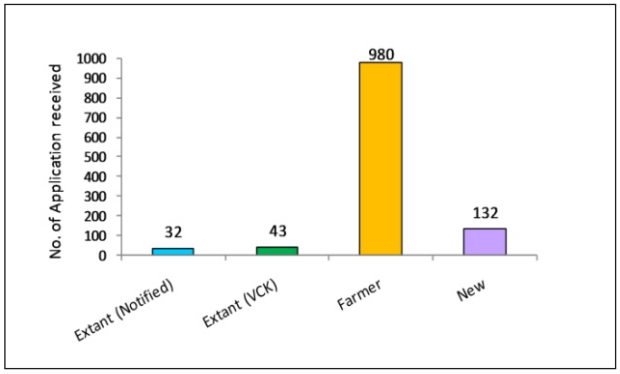


Fig 2: Applications received (2017-18) category-wise

The data on number of applications filed for registration from 2007-08 to 2017-18 reveals that, 654 applications were received when the Authority started accepting applications for registration and maximum (3569) was received during 2016-17 and 1187 during the current year under report (Fig 3). Similarly, during 2007-18, applications were received for initially for 12 crop species and 84 crop species for the reporting year (Fig 4).

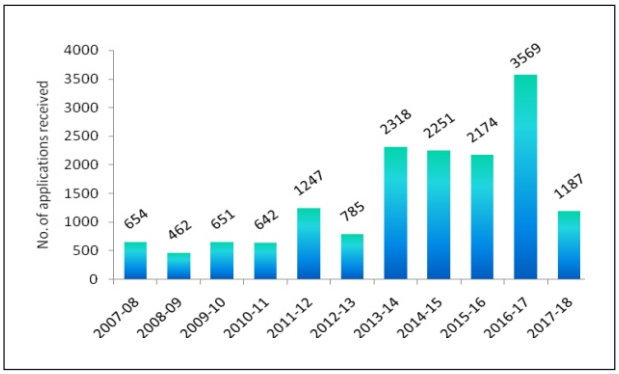


Fig 3: Applications received year-wise (2007-08 to 2017-18)

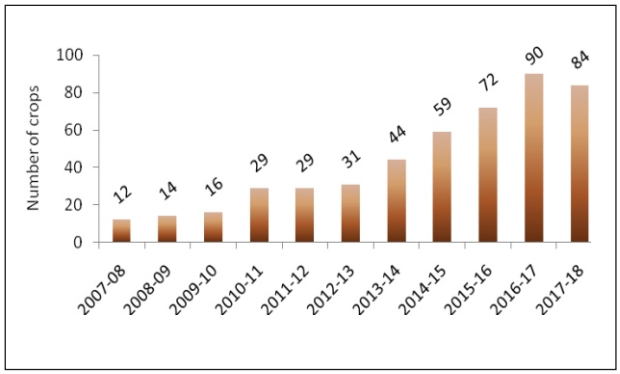


Fig 4: Applications received for number of crops year-wise (2007-08 to 2017-18)

2.3 Progress in registration of varieties

During 2017-18, registration process is completed and certificates were issued for 619 varieties under different crop species (Fig 5&6) with maximum number of certificates issued under farmers category followed by extant VCK (99), extant-notified (83) and new category (76).

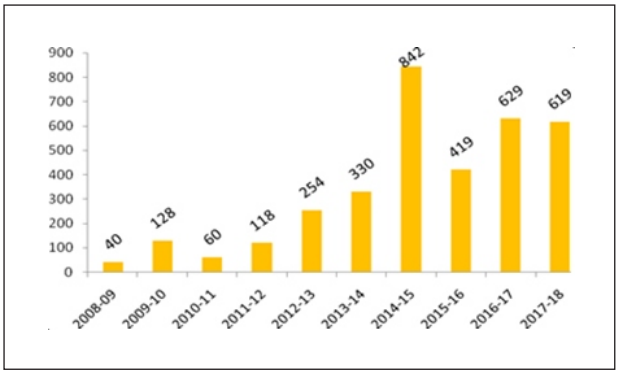


Fig 5: No. of registration certificates issued (2007-17)

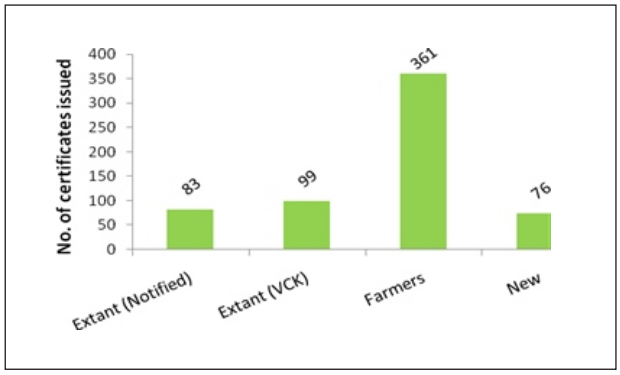


Fig 6: No of registration certificates issued category wise (2017-18)

Similarly, highest number of certificates were issued for cereals (438) followed by fibre crops and vegetables.

Table 5: No. of certificates issued crop group-wise (2017-18)

Crop Group	No. of Certificates issued
Cereals	439
Fibre Crops	69
Legumes	19
Oilseeds	19

Crop Group	No. of Certificates issued
Spices	6
Sugar Crops	6
Vegetables& Cucurbits	61
Grand Total	**619**

Table 6: No. of certificates issued Year & Crop Group Wise

Crop Group	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	Grand Total
Cereals	17	98	42	59	157	208	631	344	471	439	2465
Fruit crops									2		2
Fiber Crops		5	2	41	37	31	36	18	60	69	298
Flowers									1		1
Legumes	23	25	16	18	34	6	32	7	9	19	189
Oilseeds					13	58	110	25	14	19	239
Plantation crop							6				6
Spices					1		3	1	11	6	22
Sugar Crops					11	25	1	1	4	6	48
Vegetables& Cucurbits					1	2	23	23	57	61	167
Grand Total	**40**	**128**	**60**	**118**	**254**	**330**	**842**	**419**	**629**	**619**	**3437**

2.3.1 Progress in registration certificates issued

Year-wise and crop group-wise data on number of certificates issued starting from 2008-09 to 2017-18 in the Table 5 shows that, 71.7 % of certificates were issued for cereals (2465) and then to fiber crops (298) and oilseeds (239) and least in case of flowers and plantation crops. The data also depicts that highest number of certificates are issued till 2017-18 is 3437 with farmers' category tops the list with maximum numbers followed by extant notified category (Table 7).

Table 7: No. of certificates issued category-wise from 2008-09 to 2017-18

Category	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	Grand Total
EDV	0	0	0	0	1	0	0	0	0	0	1
Extant (Notified)	40	123	60	98	192	125	214	48	68	83	1051
Extant (VCK)	0	0	0	0	24	69	56	63	71	99	382
Farmers	0	3	0	0	3	76	461	238	388	361	1530
New	0	2	0	20	34	60	111	70	102	76	473
Grand Total	**40**	**128**	**60**	**118**	**254**	**330**	**842**	**419**	**629**	**619**	**3439**

CHAPTER 3: DUS TEST CENTERS

3.1 DUS CENTERS

3.1.1 ICAR-Indian Institute of Rice Research, Hyderabad

Seventh set of 44 candidate varieties for DUS tests in rice were conducted for first season/ year during kharif 2017 against 70 reference varieties at IIRR, Hyderabad. In addition, 11 New varieties against 25 reference varieties under second year of testing, 9 VCKs against 12 reference varieties were evaluated. Paired row testing of 91 farmers' varieties and DUS Characterization of 132 Farmers' varieties were also included in the DUS testing during 2017-18. Accordingly descriptors were recorded as per DUS guideline.

As many as 140 Nos. of RCVs were grown at the IIRR farm under the maintenance Breeding programme. These RCVs are maintained following the Progeny Row Testing (PRT) as envisaged in the guidelines.

A monitoring team comprising of the following members visited the DUS testing plots at IIRR farm, ICRISAT campus on 2nd November, 2017.

- Dr. S.R. Dhua, Retd. Principal Scientist, ICAR-NRRI-Chairman
- Dr. T.K. Nagarathna, Registrar, PPV & FRA- Representative of PPV & FR Authority
- Dr. L.V. Subba Rao, Principal Scientist & Head, Plant Breeding, ICAR-IIRR-Nodal Officer (DUS)

Representatives from Bayer Crop Sciences; Ajeet Seeds Pvt. Ltd; Trimurti Plant Sciences Pvt Ltd; Pioneer Overseas Corporation; Nuziveedu Seeds Ltd.; Metahelix Life science Ltd and Bioseed Research India were present during this monitoring.

General conduct of the tests and crop stand was good and as per the technical guidelines suggested for DUS testing in Rice. The field data for all the candidate varieties and reference varieties were recorded and the post harvest data needs to be recorded.

- All the experiments were well maintained and the crop stand was good in all the plots.
- In some cases the claimed characters of the varieties did not match with the observations (e.g.: Stem length, pubescence of leaf blade, leaf length and panicle exsertion). Such observations were recorded in the data sheet and they were duly signed by the representatives of the seed companies.
- Some of the material under 2nd year of testing were grown in the fields away from the enclosed area for this purpose. It was suggested to accommodate such testing also in the enclosed area.

The team suggested to harvest the crop on time as per their maturity and complete the data recording of post harvest observations thereafter.

3.1.2 ICAR-Indian Agricultural Research Institute, (Regional Station) Karnal

It is a co-nodal centre for DUS Testing in Rice at North India. DUS testing of 04 candidate varieties alongwith 11 reference varieties was undertaken during *Kharif* 2017. A total of 04 Farmers Varieties (FVs) had also undergone DUS testing.In addition varietal maintenance of 20 reference varieties and maintenance characterization of 28 Basmati varieties were also undertaken during *Kharif* 2017.

Monitoring under Chairmanship of Dr. VK Pandita, Head, IARI Regional Station, Karnal

No. of varieties undergone DUS testing in FY 2017-18

Crops	New (CV)		FV	Total	Monitoring done on
	1st yr.	2nd yr.			
Rice	02	02	04	08	25thOctober 2017

3.1.3 Assam Agricultural University, Jorhat, Assam

It is a co nodal centre for DUS testing in Rice, especially for varieties suitable for eastern/north eastern conditions.

3.1.3.1 First Year Evaluation:

Characterization of the following 12 farmers' varieties of rice received in 2017 from the Authority was conducted during *kharif*, 2017. 30 days old seedlings of the varieties were transplanted in 4 row plots replicated twice on 04.08.2017. However two of the varieties (Tae Youh, Chakko Youh) did not germinate and could not be included in the evaluation.

REG. No.	Denomination
REG/2016/1943	Khamba Phou
REG/2017/1442	Kesho Phou
REG/2017/1443	Kathai Phou
REG/2017/1444	Darum Phou
REG/2017/1445	Rajen or Nergen Phou
REG/2016/566	Yamnyak

REG. No.	Denomination
REG/2016/1944	Sanayambi Phou
REG/2014/1318	Tae Youh
REG/2014/1313	Chakko Youh
REG/2016/564	Wamshu
REG/2016/565	Tahnyu
REG/2016/567	Phuhah-Tah

Recording of observations on various characteristics as per guidelines in both field and laboratory has been completed.

Second Year DUS Test:

DUS Test of another set of 55 farmers' varieties of rice received from the Authority during 2016 as given below along with 11 reference varieties were conducted during *Kharif*, 2017. One month old seedlings of the varieties were transplanted in 4 row plots replicated twice on 08.08.2017.

Recording of observations on various characteristics as per guidelines in field and after harvest have been completed.

Varieties	DUS Centres
Sada Mala, Seshaphal, Seshaphal-1, Shial Bhomra, Sitalkuchi-1, Sitalkuchi-2, Sitalkuchi-3, Sitalkuchi-5, Sitalkuchi-6, Sunga Boro, Tara Pakri, Tara Pakri Selection-1, Tarai Research Society-1, Tarai Research Society-4, Tulaipanji-Ad, Tulshibhog, Uttar Banga Local-1, Uttar Banga Local-2, Uttar Banga Local-3, Uttar Banga Local-4, Uttar Banga Local-5, Uttar Banga Local-8, Uttar Banga Local-9, Uttar Banga Local-13, Uttar Banga Local-18, Uttar Banga Local-19, Lal Dhyapa, Lagi Dhan, Malshira	AAU &NRRI-ICAR
Raja Sali, Kaga, Mima, Nasingket, Porajoni, Mikatchu, Mimitim, Jaha Simil, Paichong, Arnigka, Minil, Malsira, Vuiphir, Fazu, IDAW-1	AAU Assam &ICAR-NEH, Nagaland
Housir, ASO, Napi Phou, Sang Sangba, Cipibuh, Mikororo-A, Phourel Phoujao, Nepadai-A, Langphou Chakhao, Sarai Nap, Kahungja-A, Longmei	AAU Assam &ICAR-NEH, Manipur

Varieties under maintenance/characterized:
In addition to these, 12 reference varieties, namely, Lachit, Bahadur, Luit, Gitesh, Aghoni, Mahsuri, Ranjit, Manoharsali, Swarna, Ketekijoha, Swarna and Swarna Sub 1 were grown during *Kharif* 2017for maintenance/ characterization.

3.1.4 Tamilnadu Agricultural University, Coimbatore

Characterization was done for three farmers' varieties *viz.,*Thombe, Bass Zinia and Raktashali during the year 2017-18. Dr.L.V.SubbaoRao, Principal Scientist and Nodal Officer (DUS), IIRR, Hyderabad visited the DUS testing field during July 2017 during monitoring visit and appreciated about the maintenance of the field.

In addition, maintenance breeding cumcharacterization was done for 22 rice varieties *viz*., Jagitial samba (JGL-3844), Kunnara Sannalu (KNM-118), Prathyumna, Somnath (WGL-347), Sheetal (WGL-283), Ramappa (WGL-23985), Siddhi (WGL-44), JGL-11118, KNM-110, GangavatiSona, VL-Dhan-157, VL-Dhan-68, Pant Basmati-1, Pant Basmati-2, PratapSugandha-1, KMP -105, Balshmuthi, RC Maniphou-11, KRH-4, ARB-6, CSR-43 and RC Maniphou-12 received from IIRR, Hyderabad during 2017-18. In this regard, the plant and seed morphological characters were documented and data sheet were prepared.

3.1.5 ICAR-National Rice Research Institute, Cuttack

Salient progress of the centre

- IInd Yr Testing: A set of 09 candidate varieties of rice were received along with 31 reference varieties for 2nd year DUS testing. These varieties were sown in the nursery on 19.06.2017 and transplanted on 19.07.2017 in two randomized blocks as per the standard recommended DUS test guideline. The observations on all the DUS test characters were recorded.
- Ist Yr Testing: A set of 50 candidate varieties and 50 reference varieties were also received for the 1st year testing of the DUS testing. This set was sown in the nursery on 21.06.2017 and transplanted on 21.07.2017 in the prescribed field.

- A set of 09 VCKs and 18 reference varieties were received for conducting DUS testing. This set was sown on 21.06.2017 and transplanted on 21.07.2017 in the field.
- Another set of 97 (125 farmers' varieties, of which 28 did not germinate) farmers' varieties were sown on 19.06.2017 and transplanted on 21.07.2017.

The above experiment was carried out in Kharif 2017 for DUS testing which had several unique results. The claimed grouping characters of candidate and VCKs are completely matching with the claimed character of the breeder. All the data by morphological to biochemical analysis were carried out. These data were computerized and sent to PPV&FRA. Apart from this, another set of 09 candidate varieties was tested along with 31 reference varieties for the second year. There was no variation in any of the characters from the first year. The crop stand was good as evident from the Monitoring report. A total of 46 varieties were with green coleoptile, whereas, *GK120, NP 10026, MR 8666, PAN 5047* were with colourless coleoptiles. Three varieties i.e. *R834F, RA403F, MR8666* were with light brown decorticated grain colour. Most of the tested varieties were with medium stem length (111-130cm). Among all these varieties only 17 varieties had awn. *CR Dhan 404* was with maximum 1000 grain weight i.e. 32.0 gm. Thirty (30) varieties had medium grain length (8.6-10.5 mm), whereas 20 were having short grain length (6.1-8.5 mm). Almost all the varieties were with medium (11-20) panicle number per plant. 30 varieties were found to be positive of phenol. *Sahabhagi Dhan* showed highest percentage of amylase i.e. 28.95 followed by *NP-9862* with an amylase percentage of 26.02.

Nine (9) VCKs were tested against 18 reference varieties. These varieties had green colour coleoptiles. Varieties with maximum stem length among all 9 varieties was *R849* (96.4cm) followed by *R915* (95.6cm). Among all these varieties two varieties had awn i.e. *R 874 F* and *R 909 F*. Variety with maximum 1000 grain weight were *MC 13* (28gm) and *DRH 836* (26gm). *R 818F* had maximum grain length of 10.31mm followed by *MC 13* (9.48mm), *DRH 836* (9.0mm), *R 871 F* (8.94mm) and *R 909 F* (8.93mm). *R 909 F* and *Akshaya* had high number (>20) of panicles per plant. One variety, *R 818 F* had very long panicle i.e. >30cm. Varieties like *R 871 F, R 874 F, MC 13* and *DRH 836* also had long panicle (26-30cm). Seven varieties were found to be positive of phenol. Variety like *DRH 836*, *Akshaya* and *R 871 F* showed highest percentage of amylase i.e. 21.75, 21.15 and 20.77, respectively. The reference varieties which were grown against the candidate varieties and the VCKs fulfilling the claimed characters were conserved in Gene bank. The data recorded in proper format were sent to the Authority. All the morphological and biochemical data were recorded properly and computerized.

A total of 97 farmers' varieties were tested and all the data by morphological to biochemical analysis were carried out. Variety wise with purple colour coleoptiles was found to be 13, two varieties had colourless coleoptile and rest were green. Among all the varieties 21 had awns, twenty five varieties were with maximum stem length among all 97 varieties which was 131-150cm and 13 varieties were with very short stem length which is (<91cm). Varieties having purple coleoptiles had stigma, node, internodes and tip colour purple. Varieties like *Chingri Baba, Chiriguri Halka, Korya* and *Simri Konta* had long awns (3-4cm). Variety, *Barun Pd* had the highest of 1000 grain weight among all the farmers' varieties. *Parmal Pr* and *Gopal-1* had longest grain length i.e. 10.60mm and 10.04mm, respectively. Similarly, *Radhuni Pagal* (5.88mm) and *Radhuni Pogol* (5.49mm) had shortest grain length. Varieties like *Aaka* (32), *AskalmaPD 2* (21-23), *Balai* (23-25), *Chigri Baba* (25-27), *Karpur Sunya Dahar* (20-22), *Karani Bl* (20-22) and *Sita Gangsair* (23-24) had comparatively high number of panicles per plant. Amylase percentage was high in varieties like *Ghora* (28.27), *Dugi Gora* (27.90), *Bhangani Bl* (27.52), *Ganjai Jata Baba* (26.92) and *Sita Bala Goda* (26.47). In this farmers variety list only 6 varieties were aromatic.

Summary of DUS Testing in Kharif 2017

SL. No.	Variety	No of varieties.	Plot No	Date of sowing	Date of Transplanting
1.	Candidate (2^{nd} year testing)	09	N_1e (Rep-I & II)	21/06/2017	19/07/2017
	Reference	31			
2.	Farmers' variety	97	N_1d (Rep-I &II)	19/06/2017	19/07/2017
3.	Candidate (1^{st}year testing)	50	N_1c (Rep - I)	21/06/2017	21/07/2017
	References	50			
4.	Candidate (1^{st} year testing)	50	N_1b (Rep - II)	21/06/2017	21/07/2017
	Reference	50			
5.	VCK	09	N_1a (Rep- I & II)	21/06/2017	21/07/2017
	Reference	18			
6.	Panicle progeny	27	N1a, N1b, N1c	19/06/2017	21/07/2017

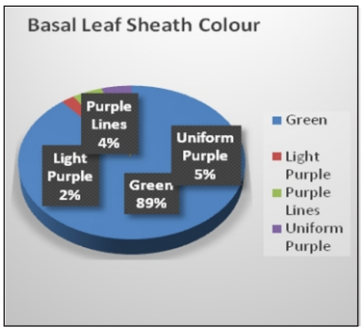
One Regional workshop on Farmers' Rights & Exhibition on Agro-Biodiversity was organized at NRRI, Cuttack on 17th November 2017 where more than 100 farmers participated from three states like Odisha, Chhattisgarh and Jharkhand. Dr. T Mohapatra, Secretary, DARE & Director General, ICAR, Sh. SK Patanaik, Secretary, DAC & FW; Chairperson, PPV&FRA and Development Commissioner, Govt. of Odisha graced the occasion, encouraged the participants and the event was a huge success which gained wide appreciation.

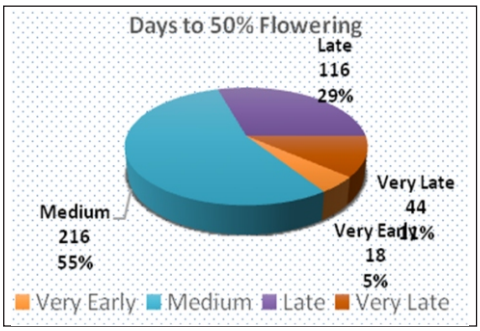
3.1.6 Indira Gandhi Krishi Vishwavidyalaya, Raipur

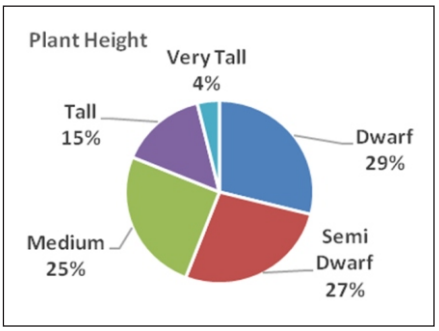
In the first year, 402 varieties in Rice (farmers' variety category) were put in trial out of which 8 varieties did not germinated. They are as follows: (REG/2017/625) Lonagi Ramsiya, (REG/2017/721) Irpachi Dhan, (REG/2017/754) Kardhana Saroj, (REG/2017/1148) Suresh Lal dhan, (REG/2017/1156) Banpur dhan, (REG./2017/1167) Set Bhadainu, (REG/2017/1229) Bhuari Brajesh, & (REG/2017/1230) Longi Sevak.

3.1.6.1Technical Plot details for conduct of DUS testing of Farmers' Varieties

- Spacing between two rows of a set of paired rows : **30cm**
- Spacing between one set of paired row to the other set of paired row : **45cm**
- Spacing between the hills in a row : **20cm**
- Plant population : **20 hills/row**
- Each FV is planted in 2 paired rows in two replications which mean each FV is represented by a total no. of 160 hills.
- As per the DUS test guidelines, data on randomly selected 10 plants shall be recorded in each replication.
- Unique farmers' varieties identified during Grow-Out-Test viz.
  - Reg./2017/288 and Reg/2017/289 (wild type)
  - Some high yielder varieties are: Reg/2017/580, Reg/2017/186, Reg/2017/351, Reg/2017/180, Reg/2017/887, Reg/2017/267, Reg/2017/836, Reg/2017/442, Reg/2017/831, Reg/2017/653.







3.1.7 ICAR-Indian Institute of Wheat and Barley Research, Karnal

Crop wise, progress are as follows:

3.1.7.1 Bread Wheat

IIWBR, Karnal is the Nodal centre for Wheat& Barley DUS testing. Wheat & Barley trials were sown as per the DUS test guidelines of PPV&FRA. During crop season 2017-18, 10 candidate varieties in wheat {(Wheat (Blue), Colored Wheat (Blue-2), Colored Wheat (Blue-3), Colored Wheat (Purple), Colored Wheat (Black), NABIMG 10*, NABIMG 11*, NABIMG 12*, HDCSW 16, HDCSW 18} and 3 Farmers varieties (Mohit Gold, SONALI-KAW and GOHOME,) under new category (2nd year of testing) were tested in three replication against 29 reference varieties in DUS trial.

Sixty seven (67) farmers' varieties (1st year of testing) were grown for grow-out test for purification. The observations as per DUS testing guidelines were collected and compilation work is going on.

The progress of maintenance breeding / characterization, during the reporting year is as under.

Wheat	
New 1st Yr	NABI MG10*, NABI MG11*, NABI MG 12*
New 2nd Yr	HDCSW 16, HDCSW 18, Colored Wheat (Blue), Colored Wheat (Blue-2), Colored Wheat (Blue-3), Colored Wheat (Purple), Colored Wheat (Black)
VCK	Nil
Farmers' varieties (characterization/ purification)	Vanshi Mukesh, Gehoon Guljaar, Badam,Tripathi Lali, SKF-CN 5, Mundi, SKF-WA 2022, SKF-WA 462 (Waman), SKF-WA 6058, Genhoo Sarbati Pili, Britta Sujeet, Betaiya, Safeshi Nagendra, Safedajokhu, Gorakhnath No.-1, Azad, Patel-10, Guhum, SKF-WA 6051, Palak, Shetayi, Gehu Sitabai, Sharbati Rajpal, Suklal Gehu, Gehoon Sipatiya, Sehwa, Pili Gehu Mahesh, Sarbati Kaluram, Kharia, Barka, Pancha HEERA, Churka Safedi Guru, Smariti, Maharajpura Genhu, Sonalika, Gehoon Pasi, Hema, Chapatiya, Sakkhu, Chatak, Sehra, Sriman Gehoon, Nandram Genhu, Mangla 1, Gajab, Mangla Ramji,Sehariya Shyam, Mangala Ajay, Gehun Lal Mundiya (Gkss Gehun-1), Gehun Safed Mundiya (GKSS Gehun-2), Gehun Jhunsia (GKSS Gehun-3), Sarbati Phool Seori, Gehu Chandrabhan, Kathia Mukta, SKF-WD-7003, Amari Gehu, Nimha Kathiya, Kathiya Shankar, Bilase, Shoda, Surajmani, Ulochana
Farmers' varieties (DUS Testing)	Mohit Gold, Sonali-KAW, GOHOME, Lamhrwan Gehun, Kathiya Desi Gehun

3.1.7.2 Barley

A total of 17 farmers varieties in Barley were tested under DUS trial 2017-18. One farmer variety Bhagat Jau-1 (for grow out test) and 16 farmers varieties were grown for characterization and recording of grouping characters. 99 reference varieties were also grown for validation of 32 DUS characters.

The monitoring team under the Chairmanship of Dr. SMS Tomar, former Principal Scientist, Divn of Genetics, IARI, New Delhi along with Dr.T K Nagrathana, Registrar, PPV & FRA, New Delhi, Dr. Arun Gupta, Nodal officer (DUS Wheat) and Co-nodal officer Dr. Charan Singh, IIWBR, Karnal, conducted monitoring of DUS Wheat at IIWBR farm on 04.04.2018.

The plots were laid out as per PPV&FRA guidelines. Candidate varieties were grown side by side to reference varieties for comparison. 119 example varieties beside 432 reference collection of wheat varieties are being maintained at IIWBR, Karnal.Over all performance of DUS trials was very good. The crop was in the soft dough stage and most of the candidate varieties of DUS trials expressed the claimed characteristics at the time of monitoring. A lot of mixture was observed in farmers varieties.

3.1.7.3 Varieties under maintenance/characterized:

Crops	Name or No of varieties under maintenance breeding in 2017-18
Wheat	Released varieties (aestivum) – 264 Released varieties (Durum &Dicoccum) – 36 Released varieties (before 1965) – 58 Example varieties – 119
Barley	Reference and example varieties – 99

3.1.8 ICAR-Indian Institute of Maize Research, New Delhi

The maintenance of reference varieties, inbred lines of maize and also seed production of maize hybrids (single cross, three-way cross etc.) which are being used in DUS Testing require minimum isolation distance and also maintenance through selfing by using scientifically acceptable number of plants / population. In addition, the breeding group or the institute who/which has developed the genotypes, are the most appropriate / ideal to maintain the genetic integrity and purity of genotypes over the period of the time. Therefore, the AICRP centres / research institutes, who have developed the inbred lines and/or released the cultivars (OPVs/hybrids), have been given the responsibility of maintenance of the reference entries. The concerned person(s) or the research institute(s) or AICRP centre(s) have been requested at the end of current season to produce the required quantity of seed of reference varieties and submit the breeder seed of all reference entries which are being used in DUS Testing.

Details	**New Entries under Testing**				**VCK [one year testing]**	
	Inbred Lines		**Hybrids**			
	1st Year	**2nd Year**	**1st Year**	**2nd Year**	**Inbred Lines**	**Hybrids**
Public	-	-	3	3	-	-
Private	22	25	18 [16+2]	25 [21+4]	2	3 [2+1]
Farmer's	-	-	-	-	-	-
Sub-Total	**22**	**25**	**21 [19+2]**	**28 [24+4]**	**2**	**3 [2+1]**
Total	**47**		**49 [43+6]**		**5 [4+1]**	

3.1.9 ICAR-Indian Institute of Millets Research (formerly DSR), Hyderabad

ICAR-Indian Institute of Millets Research is the Nodal centre for DUS testing in Sorghum and co nodal centre is MPKV, Rahuri. Scientists involved are Dr. Hariprasanna K. / Drs. Amasiddha B. & C. Deepika.

3.1.9.1 Details of DUS testing of candidate varieties in 2017-18:

Crops	New		VCK	FV	Date of
	1st year entries	2nd year entries			monitoring
Kharif 2017	**1**	**11**	**-**	**42***	07.09.2017
Rabi 2017-18	-	**2**	-	**7****	13.03.2018

(*All are *Rabi* types, so again planted during *Rabi* 2017-18)
(**tested for 2nd year)

The overall crop growth and expression of morphological characters were very good in almost all of the candidate varieties; In some of the candidate varieties like GK 4060, GK 4063, DJ 2233, STAR, MLSFR 0300, MLSFR 0179, MLR 0210, MLB 0092 and MLB 0052 there are slight differences in the observed state and claimed state of the traits. The monitoring committee agreed with these observations; As all Farmers' Varieties are of *Rabi* type, they have to be tested in the ensuing *Rabi* season.

***Rabi* 2017-18**: The overall crop growth and expression of morphological characters are very good in all the entries, and trial management is good; Excessive tillering was noticed in some of the entries due to cold conditions prevailed during the crop growth; There were no deviations from the claimed traits in both candidate varieties except for one trait in SYN-SR-DJ 4062 among the observations recorded till date; Germination was very poor in Dudaniya Hari and Chote Jwar while it was nil in Bhadeli Jowar Bhuwan; Off types were noticed in some of the farmers' varieties, while a few had very high number of off types. Some of the farmers' varieties were very similar in morphological appearance (Jwar Ganpat and Bichhua Jwar Sampat, Malagar and Jhalari Chak, Jwar Uky and Jwar Uky Maharsa, Jwar Gajar, Jwar Jwar Mehtap and Jwar Santlal).

3.1.9.2 Varieties under maintenance/characterized: 76

Varieties under maintenance breeding in 2017-18
2077A, 2077B, 2219A, 2219B, 27A, 27B, 296A, 296B, IMS 9A, IMS 9B, AKMS 14A, AKMS 14B, 7A, 7B, AKMS 14A, AKR 150, 104 A, RS 585, MS 7A, RS 627, C 43, CS 3541, CSV 12R, CSV 29R, CSV 7R, CSV 8R, DSV 5, M 35-1, Parbhani Moti(1411), Phule Rohini, Phule Suchitra, Phule Uttara, SSG 59-3, ICSB 467, Pantchari 6, DJ 6514, Bagdal Peeli Jawar, Mogal Goal Jawar, Barsi Jawar, Kodamurka Jola (Kodamurka Dundudeni), Afzapur local, Rampur Local, SPSSV 30, RS 647, CSH 14, CSH 15, CSH 23, IC 568477, IS 18541, IS 40107, IS 3920, IS 3828, IS 2806, IS 965, IS 1025, IS 1067, IS 11, IS 12, IS 37, IS 25040, IS 62, IS 3457, IS 3589, IS 22361, IS 67, IS 74, IS 1079, IS 158, IS 190, IS 60, IS 170, IS 206, IS 3076, IS 10284, IS 19303, IS 1481

During the year under report, 2 trials each during *kharif* 2017 and *rabi* 2017-18 were conducted successfully. A total of 12 candidate varieties of sorghum were tested for DUS traits in the *kharif* season, and two candidate and seven farmers' varieties were tested in the *rabi* season along with the corresponding reference varieties. During *rabi* season, 42 farmers' varieties were received from PPV&FRA were also planted for DUS characterization. Maintenance breeding was undertaken for a total of 76 reference varieties (OPVs/parental lines/hybrids/IS lines) during *rabi* 2017-18 season under enforced selfing/controlled pollination. A meeting of task force under the Chairmanship of Dr. CLL Gowda, Former

DDG (Research), ICRISAT to revise the DUS testing guidelines of sorghum and pearl millet was held on 7th Sept. 2017. The revision in the guidelines was finalized and was submitted to PPV&FRA along with photographic illustrations for DUS descriptors.

3.1.9.3 Publications from the centres are:

- Hariprasanna K., P. Suresh, Amasiddha B. and Deepika C. 2018. Status of DUS testing and review of guidelines in sorghum. In: Project Coordinator's Report, 48th Annual Sorghum Group Meeting-2018, All India Coordinated Research Project on Sorghum, ICAR-Indian Institute of Millets Research, Hyderabad 500030, India. pp. 28-35. (http://www.millets.res.in/aicsip17/reports/rb/AICRP_Sorghum_Coordinating_Team_report.pdf)
- Venkatesh Bhat B., Aruna C., Hariprasanna K., Avinash Singode, Sooganna, D., Amasiddha B., Deepika, C., Raghunath Kulakarni & Suresh, P. 2018. Nucleus & Breeder seed production, Mega seed project, Distinctness, uniformity and stability, Intellectual Property Rights, Plant Protection Variety & Farmers Rights Authority Kharif, 2017-18 In: Progress Report 2017-18. All India Coordinated Research Project on Sorghum (AICRP-S), 48th AGM2018, IIMR, IIMR publication number- 1 / 2018-19, pp. 1-15 (http://www.millets.res.in/aicsip17/reports/kh/9-NSP-BSP-MSP-DUS-IPR-PPV_FRA.pdf)

3.1.9.4 Applications filed with PPV&FRA

No of Var notified by the center Since 1966	No of Var notified by the center Since 2001	No of applications filed			Certificates issued	Pending applications
		Extant Notified	New	VCK		
281	66	43	33	31	78	29

3.1.10 MPKV, Rahuri

PPV&FR Authority established a branch office at the campus of Agriculture College, Pune under the jurisdiction of MPKV, Rahuri. An exhibition showcasing agro-biodiversity was held on 20/05/2017 along with the opening of branch office. The University conducted five awareness programme at different districts of Maharashtra. Training cum awareness programme was conducted at two locations of Nandurbar district.

- 1st programme was conducted on date 08.03.2018 at Chitawi Tal., Nawapur Dist- Nandurbar and nearly 190 farmers participated
- 2nd programme was conducted on date 09.03.2018 at Wadgaon, Tal. Shahada Dist- Nandurbar where appox. 139 farmers participated

Fixing of reinforced HDPE Geo membrane of 500 micron plastic film was completed on farm pond having size of 80.60 m length x 44.50 m width x 7m depth. This was done with Rs 5 lakh grats in aid received from PPV&FRA. Salient progress for the DUS Centre is as follows:

3.1.10.1Details of DUS testing of candidate varieties in 2017-18:

Sl. No.	Crops	New		VCK		FV		Date of monitoring
		1st year entries	2nd year entries	1st year entries	2nd year entries	1st year entries	2nd year entries	
1	Sorghum *Kharif* *Rabi*	 01 -	 11 02	 - -	 - -	 - 42	 - 07	 07.10.2017 24.03.2018
2	Pearl millet	23	10	04	-	04*	-	07.10.2017
3	Chickpea	-	-	-	-	32	-	21.02.2018

3.1.10.2 Key observations of the Monitoring team (Sorghum):

- Farmers varieties tested during *kharif* season are found to have *rabi* adaptation and hence may be tested in *rabi* season.
- In some of the candidate varieties tested during *kharif* and *rabi* season, there are slight differences in some traits for claimed and observed states.
- In *rabi* season, very poor germination was observed in *Dundiniya hari* and no germination was observed in *Chote Jwar&Bhadeli jowar Bhuwan* (farmers varieties).

3.1.10.3 Key observations of the Monitoring team (Pearl Millet):

- Three farmers varieties in pearl millet *Kskara,Muki-p* and *Akumba* are observed to be sorghum varieties
- In some of the candidate varieties there are slight differences in some traits for claimed and observed states.
- There are confusion in morphological characters *viz.,* panicle shape which should be defined with live photographs.

3.1.10.4 Key observations of the Monitoring team (Chick pea):

- The recommended package of practices was followed for good conduct of the trial and the field are maintained weed free.
- Very poor germination was observed in *Vati chana* variety.

Varieties under characterization (Farmers varieties): 42 varieties in Sorghum; 01 variety in Pearl Millet and 32 varieties in Chick pea were characterized during the period.

3.1.10.5 Applications filed with PPV&FRA:

Crops	No. of Var. notified by the center Since 1966	No. of Var. notified by the center Since 2001	No of applications filled			Certificates issued	Pending applications
			Extant Notified	New	VCK		
Cereal crops	21	22	32	02	-	22	12
Minor millet	-	2	03	-	-	-	03
Pulses	12	11	15	-	-	06	09
Oilseeds	9	18	16	03	-	06	13
Forage	6	7	-	-	-	-	-
Cash crops	12	10	11	05	-	06	10
Vegetable crops	28	15	07	03	-	02	08
Fruit	5	5	06	01	-	-	07
Floricultural crops	4	5	09	-	-	-	09
Total	97	94	100	14	-	42	71

3.1.11 ICAR-CICR, Nagpur

CICR, Nagpur is one of the co nodal centre for cotton since the beginning of DUS testing activity.
Details of DUS testing of candidate varieties in 2017-18

New		VCK	EDV/IV	Date of monitoring
1st year entries	2nd year entries			
4	4	2	1 EDV and 1 IV	26.10.2017

The monitoring team observed that DUS test field was excellently managed and kept weed free. The morphological expression of characters was very good. But EDV and IV were completely different morphologically. Centre is managing 21 cotton varieties.Five different trials were conducted which include 4 genotypes under first year testing, 4 under second year testing, 2 under Varieties of Common Knowledge, 1 each under *Essentially Derived Variety* and *Initial Variety* and 12 under reference varieties. The observations for plant, flower, boll, lint and seed characters have been completed for above genotypes and data being documented. Cleistogamy and Double petalloidy were documented as new traits which have been selected to study for their stability during next season. The monitoring was held on 26.10.2017 under the Charimanship of Dr. Phundan Singh, Ex Director, CICR, Nagpur and Dr. Shreenivasa Desai, Registrar and PPV&FRA representative.

3.1.12 PAU, Regional Station, Bhatinda

It is one of the Co Nodal centre for DUS test in Cotton. Following varieties were under trial

- Candidate variety: NCS-904 Bt, RCH 602 BG-II, SVA-371, SVA-145, SVAGMS-47, KR-111, SWCH 4704 BGII, BIO 54510, BIO 6165-2 BG II
- Reference Variety: Abadhita, L 604, JLH 168, MCU 5, Veena, AKA 7, Jawahar tapti, JK 4, PKV Rajat, Badnawar-1, GSHV112

The monitoring team under the chairmanship of Dr K Rathinaval, Nodal Officer DUS Project, CICR Regional Station, Coimbatore visited the station on 21-09-2017. Key observations of the Monitoring team:

- The layout and maintenance of the trial is very good. There was no germination in SVA 145 and Jawahar Tapti and thus plant population was nil.
- The crop growth and expression of morphological characters are good in most of the candidate varieties.
- The data was recorded as per the DUS test guidelines.
- Soil Status of field of experiment:Soil Texture: Sandy Loam; Soil pH: 8.2; Soil fertility: Low in N, Medium in P and High in K; Average annual rainfall: 430 mm

3.1.13 ICAR-Indian Institute of Horticultural Research, Bengaluru

Divn of Veg Sc, IIHR, Bengaluru is a nodal centre for DUS testing and the mandated crops are as follows: Tomato, Brinjal, Okra, Bottle gourd, and Bitter gourd, Pumpkin, Watermelon, Muskmelon and Cucumber. Salient details of DUS testing are as follows:

Crops	Candidate/New Varieties		VCK	FV	Reference Varieties	Date of monitoring
	1st year entries	2nd year entries				
Tomato	-	-	-	09	29	27.02.18
Brinjal	-	7	-	39	05	27.02.18
Okra	6	2	04	07	14	30.12.18
Cucumber	-	-	-	01	11	-
Bitter Gourd	12	-	-	23	08	Yet to be conducted
Bottle Gourd	6	-	-	-	06	Yet to be conducted
Pumpkin	-	-	-	06	11	-

Crop wise details are as follows:

3.1.13.1 Tomato: 38 tomato varieties including 9 farmers' varieties and 29 reference varieties had been raised for conduct of DUS Test for 47 morphological characters as per DUS test guidelines for the year 2017-18. All the entries were characterized for DUS traits and monitoring of the DUS entries was conducted successfully under the chairmanship of Dr. O.P. Dutta, Ex-Head, Division of Vegetable Crops, IIHR Bengaluru on 27.02.2018. The representatives from five seed companies who had registered their entries with PPV & FRA for DUS testing participated in the meeting.

3.1.13.2 Brinjal:34 Reference varieties of brinjal were raised for maintenance breeding and seeds multiplied. 7 new/candidate varieties (2nd season) and 39 farmers and thirty references were raised for conduct of DUS testing and morphological characterization as per DUS test guide lines during the year 2017-18. All the candidate /VCKs and Farmers varieties were characterized for morphological traits as per the DUS test descriptors. DUS test monitoring of brinjal was conducted on successfully 27th February, 2018.Dr. O.P. Dutta, Ex-Head, Division of Vegetable Crops, IIHR, Bangaloreserved as Chairman for monitoring the DUs test meetingThe representatives from six seed companies who had registered their entries with PPV & FRA for DUS testing participated in the meeting.

3.1.13.3 Okra: Six varieties under newcategory ,fourin VCK's , seven in farmers' and ten reference varieties of okra were characterized for 31 DUS traits and monitoring of the DUS entries was conducted successfully under the chairmanship of Dr. O. P. Dutta, Former Head, Division of Vegetable Crops, IIHR, Bengaluru on 30th December 2017. The representatives of seed companies had participated in the meeting and verified their claim.

3.1.13.4 Cucumber: Only one farmer's variety namely Chigjin Thabi Selection was received and it has got 98 % seed germination and all 29 DUS characters were evaluated as per the guide lines. Evaluation and characterization was conducted during Rabi 2017.

3.1.13.5 Bitter gourd: Twelve bitter gourd entries along with 8 reference varieties had been raised for conduct of DUS Test for 31 morphological characters as per DUS test guidelines for the year 2017-18. All the entries are being characterized for DUS traits and crop is at flowering stage. Monitoring will be conducted once the fruiting starts and observations were taken.

3.1.13.6 Bottle gourd: Six bottle gourd entries along with six reference varieties had been raised for conduct of DUS Test for 31 morphological characters as per DUS test guidelines for the year 2017-18. All the entries are being characterized for DUS traits and crop is at flowering stage. Monitoring will be conducted once the fruiting starts and observations were taken. 23 farmer's varieties were raised during Rabi season and two entries did not germinate. Characterization of 21 farmer's varieties with respect to grouping characters was done to check the uniformity. 12 varieties out of 21 were segregating for fruit shape and color.

Representatives of the applicants were satisfied with the crop and performance of DUS monitoring and suggested to have a DUS descriptor wherein all the observation to be recorded should be provided in detailed description along with scale, so that observation recorded by different individuals will have uniformity.

3.1.13.7 Varieties under maintenance/characterized:

Crops	Name or No of varieties under maintenance breeding in 2016-17
Tomato	28 (Own released -8, ICAR-9 and SAU-11)
Brinjal	34 (Own released -7, ICAR-19 and SAU-15)
Okra	19 (Own released -2, 17- Others (ICAR+SAU)
Cucumber	12 – Others (ICAR+SAU)
Pumpkin	11 (Own released – 1, 10 – Others (ICAR+SAU)
Bottle Gourd	18 (Own released – 1, 17 – Others (ICAR-6+SAU-11)
Bitter Gourd	16 (Own released – 1, 15 – Others (ICAR-4+SAU-11)

3.1.14 ICAR-AICRP-Chickpea, Indian Institute of Pulses Research (IIPR), Kanpur

Centre conducted testing of 32 varieties during 2017-18. The list is as follows:

Category	Denomination of the Var(s) undergone DUS Testing in 2017-18
Farmers' var	Deshi Rajendra, Choti Gulabi, Khajiya Dhana, Khurhara Devra, Kala Chana, Kusum Chana, Khajua, Ram Chana , Jhokhu Khurpura, Haluka, Safeda, Khurhar, Vati Chana, Raj Chana, Maru Chana, Ram Chana Bichhua Chana, Chana Kanhaiya, Chana Sipatiya Rang, Chana Kaliram, Chana Minsi, Chana Dongariya, Mohan Tendni Chana, Shivpal Chana, Somnath Tendni Chhota, Chana, Gulabi Jalegaon, Chota Chana Brajbhan, Deeru Chana, Varpani Chana, Usari Chana, Tika Chani, Potmi-Ch

3.1.14.1 Centre is maintaining following 139 varieties under maintenance breeding

AKG 9303-12, H 82-2, PDG 03, AKGS 1, HC-3, PDG 04, Anuradha, HC-5, Phule G 0027, Annegiri 1, HK 1, Phule G 12, Avrodhi, HK 2, PKV 4, BG 1053, HK 05-169, Pusa 1088, BG 1103, , ICCV 10, Phule Vikram, Pusa 256, ICCV 2, Pusa 1105, BG 261, ICCV 37, Pusa 1108, BG 372, IPCK 02-29, Pusa 209, BGD 128, IPCK 04-29, Pusa 240, BGD 72, , Jaki 9218, Pusa 244, BG 2085, JG 12, Pusa 267, BG 3043, JG 62, Pusa 329, Bidisha, JG 63, Pusa 362, Birsa Chana 3, JG 74, Pusa 391, Pusa 408, JG 322, Pusa 547, Pusa 413, JG 412, Radhey, C 235, JG 06, Rajas, Chaffa, JG 11, RAU 52, CSG 8962, JG 130, RSG 2, CSJD 884, JG 14, RSG 44, CSJ 140, JG 16, RSG 807, CSJ 515, JG 218, RSG 888, CSJK 6, JG 315, RSG 895, Dahod Yellow, JGG 1, RSG 896, DCP 92-3, JGK 1, RSG 902, Digvijay, JGK 3, RSG 931, GCP 101, JGK 5, RSG 945, GCP 105, K 850, RSG 959, Gujarat Junagadh Gram 3, KAK 2, RSG 963, GL 769, KPG 59, RSG 973, GLK 26155, Phule G 0517, (Kripa), RSG 974, GNG 1292, KWR 108, RSG 991, GNG 146, L 550, RSGK 6, GNG 1488, L 552, RVG 202, GNG 1499, Mahamaya 1, RVG 203, GNG 1581, Mahamaya 2, Raj Vijay Kabuli Gram 101, GNG 2144, MNK 1, Sada Bahar, GNG 1958, NBeG 119, Vihar, GNG 1969, NBeG 47, Vikas, GNG 469, Pant G114, Virat, GBM 2, Pant G 186, Vishal, GNG 469, PBG 7, Vishwas, GNG 663, Pratap Chana 1, Vijay, GPF 2, PBG 1, Gulak 1, PBG 5

3.1.14.2 Applications filed with PPV&FRA

Centre had filed 59 applications of Chick pea seeking plant variety protection for which 34 certificateswere issued and 25 applications are pending.

3.1.15 JNKVV, Jabalpur

The DUS project at JNKVV, Jabalpur, was started vide OM No.1-3/2003/SD-V Government of India, Ministry of Agriculture, Department of Agriculture and Cooperation, Krishi Bhavan, New Delhi, dated 13th February, 2004 under the project title:Central Sector Scheme for Implementation of PVP Legislation. Designated Crops for the center were Linseed, Lentil and Field pea. The project is under operation at Seed Technology Centre, Department of Plant Breeding and Genetics, College of Agriculture, Jabalpur, J.N. Krishi Vishwa Vidyalaya, Jabalpur 482 004 (MP). Technical programme approved for the year

- ***MAINTENANCE BREEDING AND MULTIPLICATION OF REFERENCE/EXAMPLE VARIETIES OF LINSEED, LENTIL AND FIELD PEA***
- Generation of database for DUS descriptors as per DUS guidelines of PPV&FRA and update IINDUS database
- Maintenance of DUS infrastructures

3.1.15.1 DETAILS ABOUT WORK UNDERTAKEN FOR LINSEED

Out of 22 reference varietiee, 21 are maintained at JNKVV, Jabalpur.

Reference varieties of linseed based on expression of trait

Trait	Reference varieties
Time of flowering	Sharda,Shekhar and Parvati
Flower size of corolla	Sharda, R 552 and Neelam
Flower shape	R552, Surabhi and Meera
Flower colour	J 23, Garima, Padmani and Gaurav
Flower aestivation	Shekahr, Rashmi and R 552
Flower venation colour	Surabhi, Sheela, Jeevan and Neelam
Stamencolour	Gaurav and Kiran
Anther colour	Himalini, Laxmi 27 and Rashmi
Plant growth habit	T 397, Shubrha and Gaurav
Plant height	JLS 9, J 23 and Meera
Capsule size	T 397, Shekahr and Neelam
Capsule dehiscence	Laxmi 27 and T 397
Seedcolour	Gaurav, Surabhi, Sweta, Neelam and Laxmi 27
Seed size	Surabhi, Garima and Neelam
Seed weight (1000 seed/g)	Surabhi, Garima and Neelam
Oil content	S 36, Garima and Padmani

Reference varieties of linseed maintained

Reference varieties	Number	Name
Total	22	Garima, Gaurav, Himalini, J 23, Jeevan, JLS 9, Kiran, Laxmi 27, Meera, Neelam , Padmani, Parvati, R 552, Rashmi, S 36, Sharda, Sheela, Shekahr, Shubrha, Surabhi, Sweta and T 397
Maintained	21	Garima, Gaurav, Himalini, J 23, JLS 9, Kiran, Laxmi 27, Meera, Neelam, Padmani, Parvati, R 552, Rashmi, S 36, Sharda,Sheela, Shekhar, Shubrha, Surabhi, Sweta and T 397
Not maintained	01	Jeevan

Other varieties of linseed maintained at JNKVV, Jabalpur

Reference varieties	Number	Name
Total	7	Deepika, Indira Alsi 29, Jawahar 1, J 17, JLT 215, Kartika, LCP 147

Farmers' varieties of linseed sown at JNKVV, Jabalpur

REG. No.	Denominator	REG. No.	Denominator
Reg/2017/976	Arsi Naudhiya	Reg/2017/667	Alsi Prem
Reg/2017/1169	Chikti Babu	Reg/2017/697	Alsi Jale Pandre
Reg/2017/1170	Betal	Reg/2016/311	Theesee
Reg/2017/1182	Rahli	Reg/2015/931	Amrit
Reg/2017/1193	Sulheda Khela	Reg/2015/950	Kushwa
Reg/2017/1240	Lenki Yamuna	Reg/2015/981	Kaljan
Reg/2017/1255	Alsi Dongariya Utera	Reg/2016/860	Alish
Reg/2017/1267	Alsi Takhla	Reg/2016/492	Govind
Reg/2017/208	Shailwar Alsi	Reg/2016/998	Bamundiha-LI
Reg/2017/299	Alsi Uttam	Reg/2016/1497	Dhabh Tisi
Reg/2017/329	Mulapara Alsi	Reg/2017/383	Alsi Sarita
Reg/2017/350	Roopjhir Alsi	Reg/2017/606	Karkeli Alsi

The seeds of 22 reference varieties, 7 other varieties and 24 farmers' varieties were sown on 10.11.2017 at Seed Breeding Farm, Department of Plant Breeding and Genetics, JNKVV, Jabalpur during *Rabi*2017-18in 5 rows of 5m length with 30cm row to row distance under recommended package of practices to maintain the reference varieties as per National Test Guidelines in two replications. The germination and plant population were optimum with proper expression of distinguishing traits. The environmental condition was favorable for normal growth.

3.1.15.2 Details of work for Lentil

All the 16 reference varieties are maintained at JNKVV, Jabalpur. List of reference varieties of Lentil based on expression of trait

SL.	CHARACTERISTICS	EXAMPLE VARIETIES
1.	FOLIAGE: INTENSITY OF GREEN COLOUR	VL1, VL 103, DPL 15, DPL 62, JL1, JL3
2.	STEM: ANTHOCYANIN COLOURATION	K75, NDL1, PL4, PL 234
3.	TIME OF FLOWERING	DPL15, DPL 62, VL4, VL 103
4.	LEAF: PUBESCENCE	SUBRITA, RANJAN
5.	LEAFLET: SIZE	VL1, VL103, DPL 15, DPL 62, PL5
6.	PLANT: GROWTH HABIT	DPL 15, RANJAN, DPL62
7.	FLOWER: COLOUR OF STANDARD	PL4, K75
8.	PLANT: HEIGHT	DPL 15, DPL 62
9	POD: ANTHOCYANIN COLOURATION	DPL 15, DPL 62, ASHA
10.	SEED: SIZE (WEIGHT OF 100 SEEDS)	PL406, PL234, DPL15, K75, VL1, VL4, DPL62, PL5
11	SEED: COAT COLOUR	DPL15, K75, VL1, VL4
12	SEED: TESTA MOTTLING	PL406, K75
13	COTYLEDON: COLOUR	DPL 15, DPL 62

Reference varieties of lentil maintained at JNKVV, Jabalpur

Reference varieties	Number	Name
Total	16	Asha, DPL 15, DPL 62, JL 1, JL 3, K 75, NDL 1, PL 234, PL
		4, PL 5, PL 406, Ranjan, Subrita, VL 1, VL 4 and VL 103
Maintained	16	Asha, DPL 15, DPL 62, JL 1, JL 3, K 75, NDL 1, PL 234, PL 4, PL 5, PL 406, Ranjan, Subrita, VL 1, VL 4 and VL 103

Farmers' varieties of lentil sown at JNKVV, Jabalpur

REG. No.	Denomination
REG/2016/853	Soor
REG/2016/2388	Usha 1
REG/2016/2389	Turi 1
REG/2017/210	Sevari Masoor
REG/2017/231	Kaoul Masoor
REG/2017/243	Masra Satanjhir
REG/2017/301	Masoorakhand
REG/2017/337	Gorelal Masoor

REG. No.	Denomination
REG/2017/694	Ghevri Masoor
REG/2017/763	Romti Masoor
REG/2017/194	Mamok Masoor Kali
REG/2017/956	Masuri Teduha
REG/2017/1017	Marpe Masoor
REG/2017/1706	Masursuri Local Bhura (GKSS Masur 1)
REG/2017/1707	Masursuri Local Kala (GKSS Masur 2)
REG/2017/665	Masoor Dhanoli

The seeds of 16 reference and 16farmers' varieties were sown on 11.11.2017 at Seed Breeding Farm, Department of Plant Breeding and Genetics, JNKVV, Jabalpur during *Rabi*2017-18 in 5 rows of 5m length with 30cm row to row distance under recommended package of practices to maintain the reference varieties as per National Test Guidelines. The germination was good and plant population was optimum with proper expression of distinguishing traits except the KaoulMasoor. The environmental conditions were favorable for normal growth and expression of the traits.

Observation on Farmer's Varieties of Lentil

In all, 16 farmers' varieties were along with reference varieties. The sowing for 16 farmers' varieties was on 11.11.2017. The seed of KaoulMasoor did not germinate.Rest 15 farmers varieties were observed to record the expression of distinguishing characteristics as per national Test guidelines

- **Uniformity:** In all fifteen farmers' varieties, the number of offtypes was meager and the populations were uniform based on grouping traits.
- **Specific observations**: Germination of all farmers' varieties were normal as reference varieties except Kaoul Masoor.

3.1.15.3 Details of work for Field pea

16 reference varieties of field and vegetable pea were maintained at JNKVV, Jabalpur. A list is being provided based on DUS descriptor expression at JNKVV.

S.No.	Characteristics	Example varieties
1.	Stem: anthocyanin colouration	HFP 4, Rachna
2.	Foliage: colour	Rachna, HUP2, HUDP15, HFP8909, VL3, B22
3	Foliage: waxy bloom	HFP4, HFP8909, KPMR 400
4	Leaf: leaflets	HUDP15, HFP4, Rachna, IPF 99-25
5	Leaf: Axil colour	HUDP 15, Rachna, B22
6	Stipule: rabbit-eared stipules	DDR 23, B 22, Rachna, HUDP 15
7	Stipule: type	Rachna, DMR 7
8	Flower: Opening (days)	Arkel, NDVP 24,DDR 23, UDP 15, HFP 8909
9	Flower: Standard petal colour	HUDP15, HFP4, Bonneville, 22

10	Pod number/ axil	ArkaAjeet, HDP 15, Rachna
11.	Pod: curvature	Rachna, KFP 103
12.	Pod: shape of distal part	HFP 4, Rachna
13	Pod: intensity of green colour	VL 3,HFP 8909, DMR 7, Arkel, HUDP 15, IPFD 99-13
14	Plant: height (cm)	HFP4, KPMR 400, HUDP15, AP1, Rachna, KFP 103
15	Seed: shape	HFP4, Rachna
16.	Seed: surface	HUDP15, Rachna, Arkel, AP1
17	Seed: cotyledon colour	HUDP15, HFP 4 HFP990
18	Seed: weight of 1000 seeds (g)	B 22, Rachna, Jayanti
19.	Seed: testa mottling	HUDP 15, Rachna
20	Seed parchment	HUDP 15, Rachna

Reference varieties of field pea maintained at JNKVV, Jabalpur

Reference varieties	Number	Name
Total	20	AP 1, Arka Ajeet, Arkel, B 22, Bonneville, DDR 23, DMR 7, HFP 4 , HFP 8909, HFP 9907, HUDP 15, HUP 2, IPF 99-25, IPFD 99-13, Jayanti, KFP 103, KPMR 400, NDVP 24, Rachna, VL 3
Maintained	14	Arka Ajeet, B 22, Arkel, Azad P 1, DDR 23, HFP 4, HFP 8909, HUDP 15, HUP 2, IPF 99-25, Jayanti, KPMR 400, Rachna, VL 3
Not maintained	06	Bonneville, HFP9907, NDVP 24, DMR 7, IPFD 99-13, KFP 103

Other varieties of Field pea maintained at JNKVV, Jabalpur

Other varieties	Number	Name
Total	14	VRP 5, JP 180, VRP 6, PusaPragati, GS 10, E 6, DDR 27, AP 31, AP 4, AP 3, AP 2, VRP 7, Ageta 6, JP 885

Farmers' varieties of fieldpea sown at JNKVV, Jabalpur

Sl.	REG. No.	Denomination
1.	Reg/2017/806	Kali batrisanjay

Sl.	REG. No.	Denomination
2.	Reg/2017/920	Batri kali danachota

The seeds of 14 reference and two farmers' varieties were sown on 11.11.2017 at, JNKVV, Jabalpur during *Rabi*2017-18 in 5 rows of 5m length with 50cms row to row distance under recommended package of practices as per National Test Guidelines. The germination and plant population were optimum. The environmental conditions were favorable for normal growth and expression of the traits.

Observation on Farmers' varieties of Field pea

Both the farmers' varieties were sown to record the expression of distinguishing characteristics as per national test guidelines along with reference varieties. The sowing of farmers' varieties was on 11.11.2017.

- **Uniformity:** In both the farmers varieties the number of offtypes was meager and the populations were uniform based on grouping traits.

- **Specific observations**: Both the farmers varieties of field pea were expressed smooth seed surface however, the large seed size was recorded only in farmer's variety Kali Batarisanjay.

3.1.16 ICAR-VPKAS, Almora

ICAR-VPKAS, Almora is one of the co nodal centre for maize, rajma and soybean crops. Major Research Achievements are as follows:

Year	Crop Name	Number of lines/ varieties evaluated	No. of traits
2005	Maize	61 (20 inbreds, 11 hybrid, 30 composites)	33
	Soybean	78	20
2006	Soybean	83	20
	Maize	54 (30 inbreds, 14 hybrids, 30composites)	31
2007	Soybean	11	20
	Maize	119 (60 inbreds,19 hybrids,40composites)	31
2008	Soybean	89	20
2009	Soybean	90	20
	Maize	43 (12 hybrids, 10 composites 21 inbreds)	30
2010	Soybean	90 (Seed multiplication)	-
	Maize	42 (12 hybrids, 9 composites and 21 inbreds)	30
2011	Soybean	90 (Seed multiplication)	
	Maize	44 (14 hybrids, 9 composites and 21 inbreds)	30
2012	Maize	41 (14 hybrids, 21 inbreds, 6 composites)	30
	Soybean	91 (Seed multiplication)	-
	Rajmash	4 (2 Farmers varieties)	22
2013	Maize	38 (17 inbreds, 15 hybrids, 6 composites)	30
	Soybean	91	Maintenance
	Rajmash	1	-
2014	Maize	40 (8 inbreds, 12 hybrids and 20 farmers varieties)	30
	Rajmash	3(one farmer variety with two reference varieties)	22
2015	Maize	5 (2 farmer variety with three reference varieties)	31
	Soybean	1 farmer variety	22
		23	Maintenance
	Rajmash	7 (4 farmer variety with three reference varieties)	22
		9	Maintenance
2016	Rajmash	4 (2 candidate + 2 references)	22
		11 reference varieties	Maintenance
	Soybean	25 reference varieties	Maintenance
2017	Rajmash	9 (6 candidate + 3 references)	22
	Soybean	33 reference varieties	Maintenance
	Rajmash	10 reference varieties	Maintenance

Rajmash: Six farmer's varieties *viz*., Reg/2016/1717, Reg/2013/2010, Reg/2016/907 (not germinated), Reg/2016/906 (not germinated), Reg/2016/985 & Reg/2016/905 along with three reference varieties *viz*., IPR-98-5, IPR 98-3-1 & IPR 96-4 were raised for grow out test and characterized for 22 DUS traits as per national guidelines for the conduct of test for DUS on Kidney bean.

No of reference varieties under maintenance:

Crop Species	Source of Varieties	Name of the varieties
Soybean	**ICAR**	12 (DS 228, DS 97-12,Pusa 16, Pusa 20, Pusa 22, Pusa 24, Pusa 37, Pusa 40, NRC 2, NRC 7, NRC 12, NRC 37)
	Own	7 (VL S 1, VLS 2, VLS 21, VLS 47, VLS 59, VLS 63, VLS 65)
	Others	72 (ADT1, Alankar, Ankur, Birsa Soya 1, Bragg, CO 1, CO 3, CO Soya 2,Durga, Gujrat Soya 1, Gujrat Soya 2, Gaurav, Hara Soya, Hardee, Improved Pelican, Indira Soya 9, JS 2, JS 71-05, JS 75-46, JS 76-205, JS 79-81, JS 80-21, JS 90-41, JS 93-05, JS 95-60, JS 97-52, JS 335, KB 79, KHSB 2, Kalitur, Lee, LSB 1, MACS 13, MACS 57, MACS 58, MACS 124, MACS 450, MAUS 1, MAUS 2, MAUS 32, MAUS 47, MAUS 61, MAUS 61-2, MAUS 71, MAUS 81, Monetta, Palam Soya, PK 262, PK 308, PK 327, PK 471, PK 416, PK 472, PS 564, PS 1024, PS 1029, PS 1042, PS 1092, PS 1241, PS 1347,PS1368, Punjab 1, RAUS 5, Shilageet, Shivalik, SL 96, SL 295, SL 525, SL 688, TAMS 38, TAMS 98, Type 49)
Rajmash	**ICAR**	IVFB 1, Arka Anoop, Arka Komal, Suridha & PDR 14
	Own	VL Rajma 63 and VL Rajma 125
	Others	HUR 15, HUR 137, HUR 203 and HUR 35

A Training-cum-Sensitization workshop on “Protection of Plant Varieties and Farmers’ Rights Act 2001” was organized on 22 March, 2018 at ICAR-Vivekanand Parvatiya Krishi Anusandhan Sansthan, Almora. This event was organized to create awareness among hill farmers of Uttarakhand about the PPV&FR Act 2001, importance of registration of plant varieties, role of farmers and farming communities in conservation plant genetic resources and in the development of modern plant varieties. Dr. L. Kant, HoD, CID, ICAR-VPKAS, Almora inaugurated the session. In his inspirational inaugural address he highlighted the importance of plant genetic resources and role of farmers and farming communities in its evaluation and conservation and encouraged the farmers for registration of their plant varieties. He also informed the house about “Plant Genome Savior Award and Recognition” & asked farmers to come forward and apply for the same. Dr. N. Chandra, HoD (SSS), ICAR-VPKAS, Almora also encouraged farmers to take initiative for the registration of existing prominent famers' varieties of Uttarakhand hills. Dr. K.K. Mishra, HoD (CPS), ICAR-VPKAS, Almora also encouraged farmers for this training programme. Theme lectures were also presented by various experts. The lectures on topics "Protection of Plant Varieties and Farmer's Right (PPV&FR) Act, 2001: An Overview" by Dr. L. Kant, "Importance of geographical indications and ITK in agriculture" by Dr. R.K. Khulbe and "Agriculture related IPR's and relevance of Farmers' Rights (FR) in India" were delivered. A total of hundred farmers from Hawalbagh, Gallibasera, Mujholi and Ana villages of Almora district and Jhankat of U.S. Nagar district had participated in this event along with scientific and other staff of ICAR-VPKAS, Almora. Exposure visit to institute museum and experimental farm was also organized for the farmers for the practical demonstrations of on-going activities of the institute. The interactive discussion and feedback session was also organised and the event was ended with the valedictory function.

Centre has released varieties: VL Masoor 148 (AICRP), VL Matar 61(SVRC), VL Soya 89 (AICRP), VL Bhat 202 (SVRC).

3.1.17 ICAR-Central Research Institute for Jute and Allied Fibers, Barrackpore& CSRSJAF, Bud Bud Burdwan

During 2017-18, one new white jute (*Corchorus capsularis*) variety, viz., JRCM-2 and five new tossa jute (*C. olitorius*) varieties, viz., JROM-1, NJ 7005, NJ 7010, NJ 7050 and NJ 7055 were tested for second year growing cycle. These candidate varieties were tested against the following reference varieties:

Sl. No.	Name of the candidate variety	Name of the reference variety-1	Name of the reference variety-2
1	JRCM-2	JRC 321	JRC 212
2	JROM-1	JRO 524	JRO 8432
3	NJ 7005	JRO 204	JRO 524
4	NJ 7010	JRO 8432	JRO 204
5	NJ 7055	JRO 8432	JRO 204
6	NJ 7050	S-19	JRO 878

The white jute variety JRCM-2 was tested for second year growing cycle during 2017-18 to observe distinctiveness, uniformity and stability at CRIJAF, Barrackpore (Nodal centre) and at CSRSJAF, Bud Bud (Co-nodal centre).The candidate variety JRCM-2 was found to be distinct from both the reference varieties (JRC 321 and JRC 212) with respect to stem colour (green with light red pigmentation).Observations were similar at both the centre.

New tossa jute variety JROM-1 was tested against reference variety JRO 524 and JRO 8432 for second year growing cycleduring 2017-18 at both the centre. The candidate variety was found to be distinct with respect to leaf shape (lanceolate). Similar observations were recorded at both the centre.

Tossa jute variety NJ 7005 was tested against reference variety JRO 204 and JRO 524 for second year growing cycle during 2017-18 at both the centre. The candidate variety was not distinct with respect to any of the claimed characters (leaf vein colour, petiole colour, stipule colour and stem colour). However, the candidate variety NJ-7005 was found to be distinct with respect to the seed colour (steel grey) from both the reference varieties JRO 204 and JRO 524 (black seed colour). Similar observations were noted at both the centre.With respect to plant height the candidate variety (tall) was found to be distinct from the reference varieties (medium) only at CRIJAF, but plant height was recorded similar (medium) for candidate and reference varieties at CSRSJAF.

Tossa jute variety NJ 7010 was tested against reference variety JRO 204 and JRO 8432 for second year growing cycle during 2017-18 at both the centre. In NJ-7010 seed colour (chocolate brown) was distinct from the reference varieties (black seed colour). However, the candidate variety was not distinct with respect to the other claimed characters (leaf shape and time of flowering). Observations were similar at both the centre. With respect to plant height the candidate variety (tall) was found to be distinct from the reference varieties (medium) only at CRIJAF, but plant height was recorded similar (medium) for candidate and reference varieties at CSRSJAF.

Another tossa jute variety NJ 7055 was tested against reference variety JRO 8432 and JRO 204 for second year growing cycle during 2017-18 at both the centre. The candidate variety was not distinct with respect to the claimed characters like leaf shape and plant height at both the centre. However, the candidate variety NJ-7055 was found to be distinct with respect to the seed colour (steel grey) from the reference varieties JRO 8432 and JRO 204 (black seed colour).

The candidate variety NJ 7050 was grown for the second year growing cycle during 2017-18 and tested against reference variety S-19 and JRO 878 at both the centre. As no reference variety was mentioned in the application, in the second year growing cycle reference varieties (S-19 and JRO 878) were chosen on the basis of 1st year characterization data. However the candidate variety was not distinct from reference varieties with respect to any of the character.

Twenty two reference varieties of tossa jute, viz., JRO 204, IRA, JRO 632, JRO 3690, JRO 66, JRO 524, JRO 7835, JRO 878, JRO 8432, S-19, JRO 128, JRO 620, Chinsurah Green, Sudan Green, Tanganyika-1, JRO 2345, KOM 62, TJ 40, CO-58, JRO 2407, Tarun and BidhanRupaliand eighteen varieties of white jute, viz., JRC 212, JRC 80, JRC 698, JRC 7447, JRC 4444, Padma, JRC 321, Monalisa, UPC 94, Bidhan Pat 1, Bidhan Pat 2, Bidhan Pat 3, KC 1, KTC 1, D 154, JRC 517, JRC 532 and KJC 7 were maintained and characterized under DUS project.

Monitoring was conducted on 04.08.2017 at CRIJAF, Barrackpore (Nodal centre) and on 05.08.2017 at CSRSJAF, Bud Bud (Co-nodal centre).

3.1.18 ICAR-Indian Institute of Oilseeds Research, Hyderabad

The ICAR - Indian Institute of Oilseeds Research, Hyderabad is the coordinating centre for testing of three oilseed crops *viz.,* castor, sunflower and safflower. The work done during April 2017 to March 2018 is presented below

During 2017-18, two farmers' varieties (Dehati and Dehati-2) were sown in *kharif*2017 (17.07.2017) with two reference entries Haritha and DCS-107 and data was recorded for 30 DUS traits in accordance with the DUS test guidelines. Both the farmers' varieties were tall, late flowering, un-branched types with more number of nodes on the main stem at Hyderabad.

Another two farmers' varieties (Margari and BadhiaArandi) were raised in *kharif* 2017 for generation of standard description. The farmers variety BadhiaArandi (Reg/2017/1153) exhibited poor germination and final plant population was low (4 plants) hence further characterization of this entry is not possible till fresh seed lot is received. A total of 30 DUS traits were recorded for the farmers' variety Margari.

During *rabi* 2017-18, replicated trials of sunflower were conducted for 17 parental lines comprising 10 A/B lines and 7 R lines from the reference collection to ascertain the revised range for states for some of the traits for parental lines as the existing range in the guidelines is more appropriate for hybrids. Identification of the most suitable example varieties for different traits to be added to the guidelines and characterization for additional traits also formed a part of the activity. The trials were sown on 27.11.2017. Data was recorded for 32 traits in accordance with the DUS test guidelines and 6 additional traits as per UPOV guidelines. Centre submitted database for 7 hybrids, 4 A lines and 3 R lines of Sunflower for 34 DUS traits. Reference entries of castor (8), sunflower (10) and safflower (17) were maintained and multiplied.

3.1.19 ICAR-Directorate of Rapeseed and Mustard Research, Bharatpur

During year 2017-18 a total of 46 candidate varieties have been tested under the categories of Farmer's variety for 1st year characterization for species variation or mixture (30), Farmer's variety for 2nd year characterization (14), New variety for 1st year characterization (1) and New variety for 2nd year characterization (1). A total of 30 farmer's varieties (1st year) have been characterized for variation from proposed species, identification of the actual species in the field by visual observation and percentage of mixture of the plants of different species within variety as well as mixture of plants with different morphology of same species within variety.Out of 30 Farmer's varieties a total of 21 varieties showed species variation as well as mixture of different species in the field. A total of 135 varieties of different species of oilseed Brassica [*Brassica juncea* (94), *Brassica rapa* var.

brown sarson (02), *Brassica rapa* var. toria (15), *Brassica rapa* var. yellow sarson (12), *Brassica napus* (07), *Brassica carinata* (05)] have been maintained by suitable reproduction methods.

3.1.20 CSAUA&T, Kanpur (Rapeseed and Mustard)

It is a co nodal centre for DUS testing in Wheat, Rapeseed and Mustard. Following varieties were under testing during 2017-18:

Crops	New		VCK/RV	FV	Date of monitoring
	1st year entries	2nd year entries			
Mustard	1	6	16	30	16 January 2018

Nodal officer of DUS Project, DRMR Bharatpur, Rajasthan Dr. Priya Medha monitored the DUS field on 16-01-2018 and expressed her satisfaction on proper conduction of DUS test along with excellent performance of each entry. List of varieties under maintenance/characterized are enclosed:

Mandated Crop Species	Name or No of varieties under maintenance breeding in 2017-18
Mustard	Nil
Wheat	35 varieties were maintained under maintenance breeding. Seeds of each variety have been stored properly.

The material under DUS testing was examined properly as per norms given in test guide lines of concerning crops. Mixture was reported in some farmers' varieties in mustard. Therefore it was too difficult to find the true to type plants for further observations.

3.1.21 ICAR-Indian Institute of Vegetable Research, Varanasi

IIVR, Varanasi is maintaining a DUS centre under'*Central Sector Scheme for Protection of Plant Varieties and Farmers' Rights Authority (DUS Testing of tomato, brinjal, okra, cauliflower, cabbage, vegetable pea, French bean, bottle gourd, bitter gourd, pumpkin and cucumber)*'.
Brief progresses are as follows:

Ninteen okra, 34 brinjal, 4 cauliflower, 9 cabbage, 20 tomato, 8 bottle gourd, 2 bitter gourd, 15 cucumber and 12 pumpkin entries were evaluated under DUS Testing along with reference varieties.

DUS testing vegetable crops (2017-18)

Type of variety	New		VCK	FV	Total	Remarks/ Date of Monitoring
	1st year	2nd year				
Bottle gourd	-	-	1	7	8	09.05.2017
Bitter gourd	-	-	-	2	2	09.05.2017
Cucumber	-	7	-	8	15	09.05.2017
Pumpkin	-	-	-	12	12	09.05.2017
Okra	6	2	4	7	19	07.10.2017
Brinjal	-	7	-	51	58	06.01.2018
Cauliflower	-	4	-	-	4	06.01.2018
Cabbage	2	7	-	-	9	07.02.2018
Tomato	9	2	-	9	20	07.02.2018
Total	**17**	**29**	**5**	**96**	**147**	

b) Key observations of the monitoring team

- **Pumpkin**: All varieties in farmers' variety category were not uniform except Bhadari variety.
- **Bottle gourd:** Population was not uniform (Variation in fruit shape) of **NBBH-48**
- **Bitter gourd:Meetha Karela-**This entry is belongs to *Luffa* sps.
- **Cucumber:Amang Mankoih-**This entry is belongs to melo group.
- **Okra**:**Jai Bhindi Yuraj-**Variation in fruit shape, size and plant type. No fruiting in Ghor Bhindi and Dharidar Bhindi

c) Varieties under maintenance/ characterized:

Reference varieties of tomato, okra, brinjal, cauliflower, cabbage, vegetable pea, french bean, bottle gourd, bitter gourd, pumpkin, cucumber and pointed gourd were collected from different ICAR institute and SAUs. All the varieties of these crops were sown in randomized block design (R.B.D.) with 3 replications and are being maintained through sibing/selfing. The number of varieties of these crops maintained and their descriptors of morphological traits are being observed are presentated in this table.

Crops	No. of Varieties	Seed received by Institutes/SAU etc.
Tomato	95	23
Cauliflower	05	01
Cabbage	04	01
Brinjal	77	18
Vegetable Pea	42	13
French Bean	27	11
Okra	42	13
Cucumber	28	11
Bitter gourd	25	14
Bottle gourd	31	15
Pumpkin	23	11
Total	**399**	

3.1.22 PDKV, Akola

The center is a co nodal centre for Pigeon pea. During 2017-18, 92 varieties under farmer's variety category were tested /characterized and 2 reference varieties (BSMR-736 and ICPL-87119) were used for comparison. The list of varieties is as follows:

Farmer's varieties	Ram Arhar, Sharda Arhar, Mahiya Asha, Mahiya Rajendra, Mahiya Dharmu, Mahiya Basoori, Mahiya Bhour, Purani Tuar Mahrun Lal Pilookhedi, Katkiyau Arhar, Ganpat Arhar, Arhar Chapa, Itar Tuar, Kok Rahar, Baramasi, Tuar Asadi, Tuar Parasiya, Arhar Lali, Tuar Horilal, Tuar Ghooran, Tur Kishor, Arhar Sant Kathiya, Arhar Ageti Shrighot, Tuar Khar, Hari Tuar, Chaiti Naresh, Garhan Naresh, Badki Guru, Arhar Rithi, Lali Dharmendra, Madni, Patka Shatru, Tual Kope, Tuval Kaydi, Tuar Safed, Sarekha Tuar, Sotha Arhar, Saral Jait Tuar, Santa Tuar, Kamal Tuar, Tulasiya Tuar, Tuar Ujar, Giya Tuar, Kuhi, Suresh Tuar, Imrat Tuar, Saj Shanti Tuar, Saj Sushma Tuar, Arvind Saj Tuar, Barra Arhar Manki, Dudesing Arhar, Samal Arhar, Paiku Arhar, Gajpal Arhar, Safed Baramasi Arhar Ajay, Lal Arhar Manohar, Subhash Tuar, Indra Tendni Tuar, Choti Arhar, Shyama Arhar Harri, Safed Tuar Phool, Safed Tuar, Tehra Mahiya, Khamtara Arhar, Mulapara Arhar, Aghani Badi Safed Jamuna, Aghani Chhoti Safed Jamuna, Aghani Lal Majhauli Jamuna, Maghi Chitkabri Lal Badi, Skf-A1-Shivani, Mahiya Arhar, Baigani Pawan, Maghi Arhar Santara, Kadir Arhar, Maghiya Amru Arhar, Devtuar Kanchana, Mahiya Ram, Devtuar Kali Ajay, Peeli Dev Tuar Ajay, Tuar Raghuveer, Chaiti-PP, Chaitari-LO, Chaitia, Lal Pizi, Magi Rahdi, Chatri, Aghanu-1, Champai, Masur Rahar, Mangal-1, Bakalsa, Kalyani, Sindhu, Aghani Gulabi

The trial was laid out as per DUS test guideline in Pigeon pea:

No. of varieties	:	92 (Farmers varieties) + 2 (Reference varieties)
No. of rows	:	5
Row length	:	5m
Spacing	:	90 x 20 cm
No. of Replications	:	4
Plot Size	:	5 m x 3.6 m
Date of Sowing	:	10.07.2017
Date of Harvesting	:	As per the maturity of variety.

3.1.23 ICAR-IARI, RS, Katrain

IARI Regional station, Katrain is responsible for DUS Testing in Cabbage and Cauliflower. However, during 2017-18, no varieties were under testing. Centre maintained/characterized several varieties and a list of which is given below:

Mandated Crop Species	Name or No of varieties under maintenance breeding in 2017-18
Cabbage	Red Rock Mammoth, Pusa Drum Head, Kinner Red, Pusa Cabbage-1 (KGMR-1), Pusa Mukta, Golden Acre, 83-1, KTCBH-81, 6A, C-121, MR-1, Pusa Ageti, Pride of India and Pride of Asia
Snowball cauliflower	Pusa Snowball-1, Pusa Snowball K-1, Pusa Snowball K-25, Pusa Himjyoti and Snowball-16

IARI, Katrain centre filed applications seeking plant variety protection in PPV&FRA and details of which is given below.

Crops	No. of Vars. notified by the center Since 1966	No. of Vars. notified by the center Since 2001	No. of applications filed			Certificates issued	Pending applications
			ExtantNotified	New	VCK		
Cabbage	4	1	1	-	-	1	-
Cauliflower	5	1	1	-	-	-	1

3.1.24 TNAU, Coimbatore

TNAU, Coimbatore is also one of the co nodal centre for Sunflower. The seeds of the 17 reference entries (parental lines) ARM-243A, CMS-103A, CMS-17A, CMS-234A, CMS-71A, CMS-851A, CMS-10A, CMS-17B, CMS-234B, CMS-71B., 6D-1, AK1R, P61R, R-64NB, RHA-1-1, RHA-271 and RHA-272were received from IIOR, Hyderabad for DUS characterization in order to select the appropriate example varieties for each state and standardizing the range for quantitative traits in parental lines. The plant and seed characters were observed and documented.

3.1.25 ICAR-CITH, Srinagar

ICAR-CITH is the nodal centre for DUS testing, characterization and maintenance of reference varieties for pome and stone fruits. Details of which are given below:

3.1.25.1 Characterization of reference and candidate varieties: A total of 267 reference varieties of temperate horticultural crops like peach (31), plum (18), apricot (17), cherry (10), apple (50), pear (21), almond (28), walnut (27) and strawberry (65) were characterized as per DUS descriptor developed by ICAR-Central Institute of Temperate Horticulture, Srinagar for each crop. All the characters (flowering, plant, fruiting etc) were taken into consideration while characterizing the reference varieties. The stability of the traits and essential characters were ascertained. In addition a detailed description of 27 genotypes of walnut based on morphological characters, *viz* growth habit, bearing habit, foliage, fruit and kernel characteristics was done. The erect growth habit was noticed in genotype *(viz)* CITH-W-12, while semi erect growth habit was noticed in majority of the genotypes. Three types of leaf shapes were recorded *i,e*narrow elliptic, elliptic, and broad elliptic. Walnut genotypes could also be categorized based on leaf characteristics, *viz* pubescence as glabrous, slightly pubescent and pubescent. On the basis of fruit maturity group, genotypes were categorized into early, mid and late. High variability was recorded for fruit shape *viz*, round, cordate, ovate, long trapezoid, and elliptic. The descriptor clearly characterized each genotype and all the genotypes can be identified or grouped individually based on this descriptor. On-site DUS testing of five candidate walnut varieties viz CITH-W1, CITH-W-2, CITH-W-3, CITH-W-4 & CITH-W-5 was done and inspection by DUS review team was also conducted for these varieties on 24th November, 2017. About 66 new applications of farmer's varieties for protection under PPV&FRA, New Delhi were received during 2017-18.

3.1.26 ICAR-NRC Grapes, Pune

A monitoring team for on-site DUS testing of grape comprised of Shri. Dipal Roy Choudhury (Joint Registrar, PPV&FRA, New Delhi), Dr. S. B. Gurav (Deputy Registrar, PPV&FRA, Pune) andDr. Roshni R. Samarth (Scientist, ICAR-NRC for Grapes &Nodal officer Grape DUS centre) visited grape growers garden (at Nanaj,Solapur; Niphad, Nasik and Junnar, Pune) and ICAR-NRC for grapes during 23-25th January, 2018. Total 5 candidate varieties of grapes at harvesting stage were examined during the visit.Monitoring team, validated data for leaf, bunch and berry characters as per grape DUS guidelines of the candidate varieties (Medika, NanaSaheb Purple Seedless, Sarita Purple Seedless, Jay Seedless and Sudhakar Seedless). Bunch samples were collected for quality testing (for TSS, acidity, juice content, must recovery, etc.) at ICAR-NRC for grape, Pune. Also, PPV&FRA representatives discussed and guided the centre on database of reference varieties, DUS monitoring format and DUS test result format. Also it was suggested to include the trait such as end purpose in the listed grouping traits for selection of the reference varieties for comparison. The consolidated reports of two years on-site DUS testing of 5 candidate varieties are submitted to the authority for further necessary action.

List of candidate varieties for 2nd year On-site DUS testing for registration with PPV&FR Authority, New Delhi

Sl. No.	Date	Name of applicant	Candidate variety	Place and contact
1	23.01.2018	Shri. Dattatray N. Kale	Nana Saheb Purple Seedless (REG/2015/128)	Nanaj, Solapur (09423306000)

2	23.01.2018	Shri. Dattatray N. Kale	Sarita Purple Seedless (REG/2015/129)	Nanaj, Solapur
3	23.01.2018	Shri. Dattatray N. Kale	New Sonaka (REG/2015/127)	Nanaj, Solapur (Bunches were not available for testing, DUS testing was delayed for next year)
4	24.01.2018	Shri. Haribhau M. Waykar	Jay Seedless (REG/2016/1378)	At post-Gunjalwadi (Arvi), Junnar, Pune. (09975596430)
5	24.01.2018	Shri. SudhakarKshirsagar	Sudhakar Seedless (REG/2016/1768)	At-Shivadi, Post Ugaon, Niphad, Nasik (09881828967)
6	25.01.2018	ICAR-NRC for Grapes	Medika (5 REG/2015/810)	Manjri Farm, Soalpur road, Pune

3.1.27 ICAR-IIHR (Watermelon and Muskmelon)

Maintenance and regeneration of reference varieties

- A total of ten reference varieties in watermelon and 12 reference varieties in muskmelon have been maintained and regenerated during Summer, 2017-18

DUS Testing

- DUS testing of four entries in watermelon along with two reference varieties and three entires of muskmelon with with three reference varieties was carried out during summer, 2017. Monitoring of this trial was conducted on 2nd May, 2017 with Dr Sadashiva as the Chairman of the committee. Representatives from concerned company have participated.


3.1.28 IFGTB-ICFRE, Coimbatore

Activities which have been completed till March, 2018

- Maintenance of already established germplasm bank
- Observation in germplasm bank
- Identification of land for establishment of germplasm bank in the DUS centre.
- Collection of example varieties, propagation and establishment of germplasm bank at DUS centre
- Preparation of plan for DUS testing
- Development of Clone x DUS characters matrix

3.1.28.1 Time Schedule for completion of remaining activities in FY 2018-19

Activity	Time Schedule
Maintenance of already established germplasm bank	Continuous
Observation in germplasm bank at Thuvarakuruchi, Salem, Coimbatore and Ariyalur	Jan- March 2019
Collection of example varieties, propagation and establishment of germplasm bank at DUS centre	Continuous
Observation on DUS characters in Germplasm bank	Every alternate months
Development of Clone x DUS characters matrix	March 2019

3.1.28.2 Eucalyptus DUS centre

The Clonal testing area established at Salem was assessed for DUS character and development of character matrix. About 18 clones established in three tree blocks in 20 replications were assessed for DUS characters. The DUS characters were also recorded in the clonal collections established at Salem, Tamil Nadu. The reference varieties of Eucalyptus have been planted in *In-situ* Vegetative Multiplication Garden (VMG) at IFGTB propagation complex for immediate multiplication as and when DUS testing has to be carried out. One application for registration of IFGTB-EC6 has been submitted by Institute of Forest Genetics and Tree Breeding, Coimbatore. Follow up activities for registration of the above variety is being carried out.

3.1.28.3 Casuarina DUS Centre

The DUS Centre for Casuarina maintains a reference collection of over 100 clones to facilitate the registration process of new varieties of this important tree crop. Since perennials have to be continuously assessed for various descriptors notified for conducting DUS testing, the clones assembled in the DUS Centre are subjected to continuous study and recording of characters. In order to simultaneously assess different characters expressed at different ages, new planting of the clones is taken every year to have trees of different ages in the DUS Centre. A clone-DUS character matrix has been developed for around 60 clones assembled in the Centre and assessment is ongoing for the remaining clones. So far six applications have been submitted to the Authority for registration and the required number of trees has already been raised to facilitate DUS testing once the Authority issues the approval for the process. The Centre is also involved in increasing awareness on varietal protection and farmers' rights among the stakeholders like farmers who raise a major portion of the plantations and paper industries which are the main users of Casuarina wood as raw material and also developers of new varieties. A two and a half year old plantation of new variety of Casuarina (IFGTB-CJ-9) submitted for registration (Location: Tindivanam, Tamil Nadu)

3.1.29 ICAR-Sugarcane Breeding Institute (SBI), Coimbatore

The ICAR-Sugarcane Breeding Institute (SBI), Coimbatore, Tamil Nadu is acting as Nodal Centre and ICAR-SBI Research Centre, Agali (Kerala) is the Co-nodal Centre for conducting DUS test for tropical

sugarcane varieties. The major activities carried out at both Centres during 2017-18 are (i) maintenance of reference varieties of sugarcane through clonal propagation in field, (ii) conduct of DUS test for new and farmers' varieties, and (iii) characterization / verification of DUS traits of reference varieties for updating INDUS database.

Maintenance breeding: At both the Centres, settlings of 193 reference varieties were raised in polybags and then transplanted in main field (May 2017). Each variety was planted in 2 rows (20 settlings /row) of 6 m long. All care were taken to raise disease free good crop.

Verification of DUS traits of reference varieties and updating database: At the Co-nodal Centre (Agali) DUS traits (27 characters) of 193 reference varieties were re-characterized / verified during 2017-18 season and the database was sent to the PPV&FR Authority for updating in their INDUS database.

Conduct of DUS test for farmers' varieties: A total of six farmer's varieties (FV) namely Kudrat Ka Karishma, Desi-1, Desi-2, Meitei Chu Angougba, Meitei Chu Angangba and Kaptan Basti were received for DUS testing. Due to poor germination and establishment, DUS test for "Kudrat ka Karishma" alone was completed during 2017-18 season. Data of this FV recorded at nodal and co-nodal Centres were submitted to the Authority. The FV 'Kudrat ka karishma' is distinct from the reference varieties by the presence of three buds in each node (while all other reference varieties are having only one bud in each node).

3.1.30 ICAR- Sugarcane Breeding Institute Regional Centre, Karnal

The ICAR-Sugarcane Breeding Institute (SBI), Regional Centre, Karnal (Haryana) is acting as Co-nodal Centre for conducting DUS test for sub-tropical sugarcane varieties. During 2017-18, a total of 126 subtropical sugarcane reference varieties was maintained in two row plots and in disease free condition at Karnal Centre. During March 2018, seed cane of three farmers' varieties namely, Sugam Katari, Jeet katari and Pursa were received for DUS testing. Setts of these varieties were planted in polybags for multiplication. DUS test for these varieties will be conducted next year after multiplying seeds. In 2017-18 sugarcane season, DUS test for the farmer variety, Captan Basti was conducted along with four reference varieties (CoS 94270, CoS 96258, CoPant 96219 and Bo130). The data was sent to the PPV&FR Authority. Observations indicated that the Captan basti was distinct from the reference varieties.

3.1.31 ICAR-Indian Institute of Sugarcane Research, Lucknow

- **Maintenance of reference collection of sugarcane varieties:**One hundred and forty four reference varieties of sugarcane were maintained in DUS field during autumn and 154 reference varieties were planted during spring season of 2017-2018.This reference collection includes all the identified, released and notified varieties from CVRC, varieties released from states and clones from Advanced Varietal Trials of AICRP(S) available with different research organization working on sugarcane. Characters are being recorded on new inclusions in reference collection as per the DUS Testing guidelines. Reference collection new crop was planted in the field for maintenance during crop season 2018-19. Reference collection was planted in spring and autumn to observe the difference in DUS characteristics arising due to planting in different season.
- **DUS Testing Trial:** One farmer's variety Kaptan Basti was planted along with 3 most similar varieties from reference collection (CoS 96258, Co 6425, CoPant 96219 and BO 130) were planted following DUS Testing Guidelines during March 2017 for the first year. Recommended package of practices were followed. Observations were recorded as per guidelines. Data will be compiled for both the centre and will be submitted at the earliest.
- **New Candidate Varieties:** Two sugarcane varieties CoN 05071 and CoN 07072 were received from Navsari Agriculture University, Gujrat, however these clones and centre falls under Tropical Region.

Concerned Centre was suggested to supply planting material of these varieties to SBI, Coimbatore for DUS Test.

- **Farmers' varieties Testing**
  - **Fusen:** During the year another clone **Fusen** was received and poly-bag seedlings were raised. Out of 128 single buds received only 12 buds sprouted. The poly-bag seedlings were transplanted in the field. Most of the plants dried during the grand growth phase. This clone was multiplied this year also and was planted in the field.
  - **Kudrat ka Karisma:** This clone was received during March 2017 from SBI RC Karnal. Poly bag raised seedlings were planted in the field for multiplication and evaluation. No reference variety is available for trial with this clone as every node having multiple no of buds but in entire reference collection no clone found with this characteristic.
  - **Other Farmers' Variety:** This centre has received clones namely A1, A2, Jeet katari and Sugam Katari, GNS-4 and GNS-6 for evaluation under Farmers' category. These materials were planted in the field for multiplication.

3.1.32 ICAR-Central Potato Research Institute, Shimla

Brief progresses are as follows:

Potato DUS testing: In the first year DUS test experiment, four exotic varieties, namely Dolly, Sassy, Edony and Nafida of Merino Industries Limited alongwith reference varieties Kufri Frysona, Kufri Arun and Kufri Pukhraj were evaluated for vegetative and tuber traits at CPRS, Modipuram and CPRS, Jalandhar for grant of protection in Extant (VCK)group.

Second year trial of five exotic varieties viz., Farida, Ivory Russet, Columba, Navigator and Heraclea of Mahindra Ltd. along with reference varieties Kufri Pukhraj, Kufri Jyoti, Lady Rosetta, Atlantic, Santana and Kufri Chipsona-3 was done for vegetative and tuber traits in rabi season at CPRS, Modipuram and CPRS, Jalandhar for registration as new variety.

The floral traits in the summer crop of Farida, Ivory Russet, Columba, Navigator and Heraclea with reference varieties Kufri Pukhraj, Kufri Jyoti, Lady Rosetta, Atlantic, Santana and Kufri Chipsona-3 was recorded at CPRS, Kufri.

Maintenance of reference germplasm: Two hundred thirteenaccessions *viz.,*fifty one CPRI varieties, 107 indigenous varieties, 29 UPOV varieties, 18 exotic varieties and 8 state varieties were maintained under*in vitro* condition at Shimla. At CPRS, Modipuram, fifty two CPRI released potato varieties and sixty-two reference varieties were maintained in tuber form in field conditions.

Fig. 1: Leaves of different candidate potato varieties

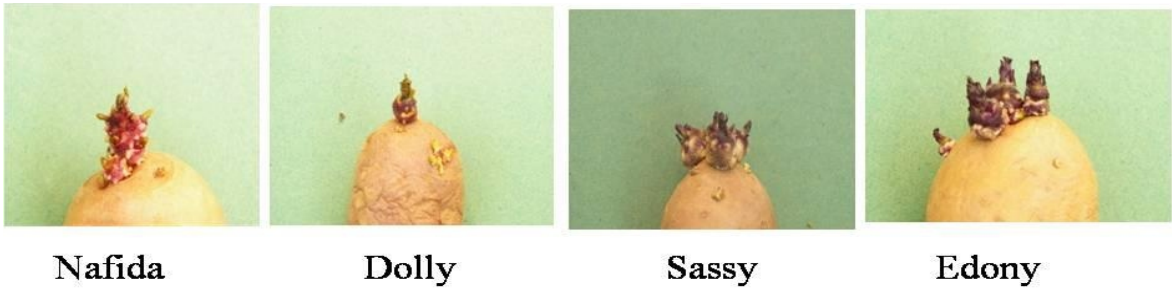


Fig. 2: Sprouts of different candidate potato varieties

3.1.33 Junagadh Agricultural University, Jamnagar

Pearl Millet Research Station, Junagadh Agril. University, Jamnagar-361 006 (Gujarat) is a co- nodal centre for DUS testing in Castor. During 2017-8, two varieties, viz., Margari& Badhia Arandi were characterized and another two varieties Dehati, Dehati-2 were tested againset two reference varieties: DCS-107, Haritha.

Co Nodal officer, Dr K K Dhedhi participated and delivered lectures to the farmers of Jam Vanthali & Varna villages (Ta.: Jamnagar) on 7th September, 2017; farmers of Jam Jodhpur on 10th September, 2017 and farmers of Nanduri & Godavari villages (Ta.: Lalpur) on 15th September, 2017 during *MA NARMDA MAHOTSAV-2017*, organized by Govt. of Gujarat, Gujarat State from 06-09-2017 to 15-09-2017. Centre submitted applications seeking plant variety protection for 12 varieties of Bajra for which registration certificates were already issued.

3.1.34 Division of Vegetable Science, ICAR-IARI, New Delhi

Centre is responsible for DUS testing in cauliflower and cabbage: during 2017-18, Out of 9 entries supplied, 7 were tested for second year under new category and 2 new entries were tested for first year. Total of 9 entries were tested for DUS characteristics.

3.1.35 ICAR-DGR, Groundnut, Junagadh

Five candidate varieties: Western Vardan(REG/2010/339); LAL (REG/2016/296), BADAM LO (REG/2016/387), GOVARDHAN GL (REG/2016/1181) and Ramkrishna (REG/2016/715) were sown along with eight reference varieties in three replications in *kharif* season of 2017 both at Nodal (ICAR-DGR, Junagadh) and Co-Nodal (UAS Dharwad) centres.The reference varieties used were: Spanish Bunch (2) GG 2 and SG 84; Valencia (2): Kopergaon 3 and Gangapuri; Virginia Bunch (2): GG 20 and BAU 13; Virginia Runner (2): Punjab 1 and Somnath.All the recommended practices have been followed to raise a successful crop. Observations 13 on qualitative 5 quantitative descriptor traitshave been recorded at appropriate growth stages and the data replication-wise were recorded. Six farmers' varieties JHUMKUL (REG/2017/1132), INDOORI (REG/2017/1133), MANOHAR MOONGFALI (REG/2017/1134), BHADELIFALLI (REG/2017/1278), SOTHAFALLI (REG/2017/1285), and JEET BADAM (REG/2017/2310) received were multiplied for seed enhancement for further testing during next *kharif* season 2019.

3.1.36 ICAR- CISH (Mango), Lucknow

Central Institute of Sub tropical Horticulture is the Nodal centre for DUS testing in Mango. Centre recd information for DUS testing/On site testing of 25 varieties under farmers' variety category.Registration of farmers varieties was facilitated for submitting 48 registration requests to the Authority. On-site DUS testing of 25 farmer's varieties was continued by collecting data from the mother trees as well as clonally propagated plants in the field gene bank. Farmers varieties (more than 200) were conserved

in field gene bank. Farmers' awareness programmes were held for submission of registration proposals of extant varieties of Malihabad region. Two awareness programmes were organized during Diversity Fair on Mango at Lucknow and Malda. Farmers were motivated for submitting registration forms and it is expected that about 50 farmer's varieties proposals on mango will be received as a result of awareness programmes. One hundred Reference varieties in the field gene bank were maintained.

3.1.37 ICAR-IIHR, Bengaluru

A total of 30 germplasm are being maintained in the DUS Plot at ICAR-IIHR, Bengaluru. A total of 15 varieties from the custodian farmers have been registered with PPV & FRA. Recently 18 varieties from a custodian farmer Mr. Mohamad Ghani were collected, multiplied and planted in the DUS plot, IIHR. During the period under report the inflorescence characteristics *viz.,* Time of flowering, Inflorescence length, Inflorescence diameter, Inflorescence ratio, and bisexual percentage were recorded.The bisexual flower percentage was recorded for 23 varieties, among them the variety Irfan recorded maximum (30.73%).Morphological and qualitative characters were also recorded as per DUS guidelines. Nine mango verities were analysed for fruit traits collected from the DUS plot. The fruit weight ranged from 67.92 to 798.46g and maximum fruit weight was recorded in the variety King fon (798.46g) where as the minimum fruit weight was recorded in the variety Dadabhai pasand (67.92g). Total soluble solids ranged from 12.4 to 20.32^{0}Brix. The highest TSS (^{0}B) was recorded by the variety King fon (20.32^{0}Brix) and lowest value was recorded in the variety Tajmahal (12.4^0 Brix). The variety Kingfon recorded the maximum pulp percentage (76.60%) and minimum pulp percentage was recorded in the variety Dadabhai Pasand (44.80%). The titrable acidity varied considerably among the varieties and ranged from 0.064 to 0.192 per cent. The highest acidity (%) was recorded by Royevol, while the lowest was recorded by Manjeb Pasand.

Fruit characteristics of mango verities

Variety	Fruit weight (g)	Fruit length (cm)	Fruit width (cm)	Fruit thickness (cm)	TSS (^{0}Birx)	Skin weight (g)	Skin thickness (cm)	Stone weight (g)	Acidity (%)	Pulp (%)
King fon	798.46	19.24	8.9	8.36	20.32	126.42	0.2	59.7	0.128	76.6
Tajmahal	159.74	7.32	6.7	5.82	12.4	24.34	0.1	32.26	0.128	64.56
Imam	72.24	4.86	15.59	4.76	13.64	11.78	0.1	12.16	0.192	66.8
Manjeb Pasand	162.98	6.94	6.38	6.16	16.44	34.8	0.1	22.36	0.064	64.92
Irfan	83.92	5.26	5.78	4.54	18.16	20.36	0.1	21.34	0.064	50.3
Mang mari	234.5	7.5	7.55	6.8	19.65	35.9	0.1	31.75	0.192	71.15
lal badam	120.68	6.92	5.64	5	12.98	22.9	0.1	20.4	0.128	64.05
Dadabhai pasand	67.92	5.66	4.58	4.26	15.14	16.48	0.2	20.98	0.128	44.80
Royevol	225.53	8.53	6.87	5.97	17.43	34.63	0.10	35.17	0.192	69.05

3.1.38 ICAR-DoGR, Pune

Directorate of Onion and Garlic Research, Pune is maintaining 55 *rabi* and 11 *kharif* varieties of onion and 24 varieties of garlic. Out of these varieties, long day varieties of onion and garlic are being maintained at CITH, Srinagar; multiplier type onion varieties are being maintained at TNAU, Coimbatore and rest of the varieties are being maintained at DOGR, Rajgurunagar) and IARI, New Delhi. The stored bulbs of previous *rabi* onion varieties and currently harvested bulbs of *kharif* onion varieties were planted in the month of December, 2017 in the nylon cages under strict isolation for further seed production and maintenance. The onion varieties are being maintained as per the mandate during *kharif* and *rabi* seasons whereas garlic varieties being maintained during *rabi* season. Three onion varieties (Bhima Kiran, Bhima Red and Bhima Raj) and one garlic variety (Bhima Omkar) have been registered under extant category with PPV&FRA, New Delhi for its protection whereas seven onion varieties *viz;* Bhima Dark Red, Bhima Shakti, Bhima Shweta, Bhima Shubhra, Bhima Super, Bhima Safed and Bhima Light Red; and one garlic variety Bhima Purple are under registration/ DUS Testing by PPV&FRA.

3.1.38.1 DUS Characterization of *Kharif* Onion Varieties (2017-18)

Seeds of 11 *kharif* onion varieties *viz.*, Agrifound Dark Red, Arka Kalyan, B-780, Bhima Raj, Bhima Red, Bhima Shubhra, Bhima Shweta, Bhima Super, Bhima Dark Red, Bhima Safed and N-53 were sown on 29th June, 2017 and transplanted on 16th August, 2017 in 3 replications with the plot size of 1x 6 m on raised beds. Crops were harvested in the month of November 2017 and all the observations were recorded as per DUS test guide lines. The bulbs obtained after harvest were planted for seed production during December, 2017.

3.1.38.2 DUS Characterization of *Rabi* Onion Varieties (2017-18)

Seeds of 47 *rabi* onion varieties *viz.*, Agrifound White, Agrifound Light Red, Arka Bindu, Arka Niketan, Arka Pitamber, Arka Pragati, Bhima Kiran, Bhima Raj, Bhima Red, Bhima Shakti, Bhima Shweta, Bhima Light Red, Bhima Safed, Early Grano, GWO-1, GWO-2, GWO-3, GJRO-11, Hissar-2, Kalyanpur Red Round, N-2-4-1, NHRDF Red (L-28), NHRDF Red-2 (L-355), NHRDF Red-3 (L-625), NHRDF Red-4, NHRDF Fursungi (L-819), PKV White, Phule Safed, Phule Samarth, Phule Suwarna, Phursungi Local, Pilipatti Junagadh, Punjab Naroya, Pusa Madhavi, Pusa Red, Pusa Ridhi, Pusa White Flat, Pusa White Round, PRO-6, RO-01, RO-252, RO-59, Telagi Local, Udaipur-102 and Sukhsagar along with 2 famer varieties *viz.* Desi-O (Reg/2015/1437) and Dungari Phuli (Reg/2017/1769) were sown on 30th Oct, 2017 and transplanted on 3rd Jan, 2018 in 3 replications with the plot size of 2 x 3 m. Crops were harvested in the month of April-May 2018 and all the observations were recorded as per DUS test guide lines.

3.1.38.3 DUS Characterization of Garlic Varieties (2017-18)

Twenty seven garlic varieties *viz.*, Bhima Omkar, Bhima Purple, CITH-G-1, G-1, G-41, G-50, G-282, G-323, G-386, GG-2, GG-3, GG-4, G-189, G-384, G-2016-05, G-2016-06, G-2016-07, Godawari, Ooty Local, Phule Baswant, PG-17, PG-18, Rani Bennur Local, Sikkim Local and Silkuei Local along with three farmer varieties Kiran Oraon (Reg/2016/339), Nidhi Lakra (Reg/2016/365) and Jeet Uraon (Reg/2016/2317) were planted on 5th November, 2017 in 3 replications with the plot size of 3 x 2 m. Crops were harvested in the month of March 2018 and all the observations were recorded as per DUS test guide line.

3.1.38.4 Varieties under DUS Test

During this year DUS testing was conducted for two onion farmer varieties Desi-O (Reg/2015/1437) and Dungari Phuli (Reg/2017/1769) along with three garlic farmer varieties viz. Kiran Oraon (Reg/2016/339), Nidhi Lakra (Reg/2016/365) and Jeet Uraon (Reg/2016/2317) for its registration.

3.1.38.5 Varieties Filed/ Registered

Three onion varieties (Bhima Kiran, Bhima Red and Bhima Raj) and one garlic variety (Bhima Omkar) have been registered under extant category with PPV&FRA, New Delhi for its protection whereas six onion varieties

viz; Bhima Dark Red, Bhima Shakti, Bhima Shweta, Bhima Shubhra, Bhima Super and Bhima Light Red; and one garlic variety Bhima Purple are under registration/ DUS Testing by PPV&FRA.

Crop	Variety	Application No.	Registration No.
Onion (*Allium cepa* L.)	Bhima Raj (B-780-5-2-2)	E2 AC3 14 1300 dated 1.7.2014	262 of 2015 dated 19.10.2015
	Bhima Kiran (DOGR-597)	E1 AC8 15 2014 dated 19.11.2015	341 of 2016 dated 22.10. 2016
	Bhima Red (B-780-5-3-1)	E2 AC9 15 2015 dated 26.11.2015	342 of 2016 dated 22.10.2016
Garlic (*Allium sativum* L.)	Bhima Omkar (AC-200)	E2 AS4 16 681 dated 6.6.2016	427 of 2016 dated 29.12.2016

Photos of registered onion and garlic varieties

Bhima Kiran

Bhima Red

Bhima Raj

Bhima Omkar

3.1.38.6 Monitoring of DUS Onion and Garlic Trials

Dr. Umesh Srivastava, Chairman, Monitoring Committee along with Dr. R.D. Gautam, Dr. V. Mahajan, Dr. S.J Gawande and Dr. A.J. Gupta, Pr. Scientist (Hort.)/ Nodal Officer (DUS), monitored DUS Onion and Garlic trials at ICAR-DOGR, Rajgurunagar and conducted review meeting with Dr. Major Singh, Director, ICAR-DOGR, on 22th March, 2018. Dr. Major Singh explained ICAR-DOGR activities to Chairman and interacted to DOGR Scientists. Dr. A.J. Gupta demonstrated the maintenance of onion and garlic varieties under DUS Project. He also explained, 47 onion varieties planted for evaluation/ maintenance including two farmers' varieties of onion under DUS testing. In case of garlic, 27 varieties planted under maintenance including three farmers' varieties. Dr. Umesh Srivastava was impressed by the cleanliness and updated form of laboratory, storage and processing facilities at ICAR-DOGR, Rajgurunagar. They were impressed with DUS experiments on onion and garlic which are conducted nicely and as per DUS guidelines. First monitoring was done on 5th March, 2018 by Dr. V. Mahajan, Dr. S.J Gawande and Dr. A.J. Gupta, Pr. Scientist (Hort.)/ Nodal Officer (DUS).

Maintenance of onion and garlic varieties under DUS Project

3.1.39 ICAR-Indian Institute of Soybean Research, Indore

ICAR-IISR, Indore is the nodal centre for DUS testing in Soybean alongwith UAS, Dharwad and VPKAS, Almora as co nodal centre. During 2017-18, nineteen varieties as per the following list were under testing/characterization:

Crops	New		VCK	FV	EDV & IV	Total	Chairman
	1st yr	2nd yr					
Soybean	-	3 (Private)	-	13	-	16	Dr. Sanjay Gupta; PS & I/C Crop Improvement Sec., IISR, Indore

Centre is also maintaining 119 varieties from public sector/other sources/notified variety during 2017-18.

Crops	No of Var notified by the center Since 1966	No of Var notified by the center Since 1999	No of applications filed			Certificates issued
			ExtantNotified	New	VCK	
Soybean	5	2	2	-	-	2

Plan for 2018-19:

i. DUS testing of 13 farmers' varieties.
i. Maintenance of notified released varieties.
ii. Filing of application of plant variety protection of notified soybean varieties released by AICRP Soybean centres.

3.1.40 Central Sericultural Research and Training Institute, Mysuru

Glimpses from reference collection

CSRTI, Mysuru being the nodal DUS centre for Mulberry is maintaining a reference collection of 45 mulberry varieties along with panel of diverse germplasm (264 genotypes). Mulberry DUS descriptors are validated successfully. Updating of IINDUS data base of Mulberry is completed. Establishment of reference genotypes at DUS centre is in advanced stage. The process of testing of new/extant mulberry varieties is initiated.

List of Mulberry reference collection under maintenance breeding	
Reference varieties	Mysore local, Kanva-2,RFS-135,RFS-175,AR-11,S-1635,S-13,S-34,Kajili,MR-2,S-146
Example Varieties	Acc.106, Asiyoake, Badodhi, Barbat Farm, Bilidevalaya, Birds Foot, China-34,Creeping CP×V1 (P5), Creeping Mulberry, Doomar Nali, French,Gajapathipur-2,Harmutty, K2 X BC (P11), Kajali, Kanva-2, Karanjtoli-1, Kokuso, Kosen, Lamia Bay, Lazuraso, *M. Laevigata* (Hybrid), *M. Multicaulis,* Malkai Local, Mizusawa, Moreti (Seringe), Philippines, Punjab Local, Railway Quarter, Ranchi-5, Saravathi Tea Estate, Surat, Urgam-1

3.1.41 ICAR-Project Coordinating Unit (Sesame and Niger), Jabalpur

- 35 Farmer's varieties have been received for two years testing were characterized and evaluation will be done during 2018-19
- Out of 35 varieties, 2 varieties were not uniform as their seed coat colour was a mixture of 2-3 colors (White, Dark brown and black).
- One Farmer's variety viz., Reg/2016/861 (TILARA) did not germinate.
- Rest all others were uniform in all the 3 replications.
- Two Farmer's varieties viz., Reg/2017/494 and Reg 2017/532 were found to be determinate type.
- Farmer's varieties: Reg/2017/497, Reg/2017/496, Reg/2017/494 and Reg/2017/532 were observed to be early maturing
- Varieties viz., Reg/2017/309 and Reg/2016/1004 were multicapsular.

3.1.42 ICAR- Central Agricultural Research Institute, Port Blair:

Brief progresses during 2017-18 are as follows

Objectives

- DUS test procedure for different cultivars/ species of Noni will be used as check for registration of any cultivars and varieties in India.
- The information on biochemical parameters will further sensitize the public for Noni and helps in its commercial utilization.
- Scientific backup to Noni growers in Islands.
- This information also helps to select desired genotype for further genetic improvement programme.

Target milestone (April 2017 – March 2018)

Milestone	Progress
Intercultural operations carried out to the Noni plantation	Silvicultural practices viz., pruning, earthing up and mulching with organic residues were carried out in the 2 ha. noni plantation
Preparation of DUS characterization for noni variety	DUS characterization of four noni varieties prepared

Nursery preparation seedling transplating	Four varieties of noni (CARI Sampada, CARI Rakshak, CARI Samridhi and CARI Sanjivini) seedlings were transplanted in to the poly bags from nursery mother bed.
Data base on Noni reference varieties	Data base were prepared for four noni reference varieties
Yield estimation	Yield observations were taken for eight year old noni plantations

Salient achievement (April, 2017 - March, 2018)

- Noni plantations at two farms were maintained scientifically by providing timely intercultural operations viz., earthing up, mulching, FYM and fertilizer application and pruning.
- DUS characterization and database of noni reference varieties prepared
- The four Institute released varieties of Noni viz., CARI Sampada, CARI Rakshak, CARI Samridhi and CARI Sanjivini fruits were collected from the plantation and seeds were extracted from fruit for seedling production.
- During the reporting period 15000 seedlings were produced and the seedlings will be distributed to the stakeholders for this season.

Detailed report for the period of April, 2017-March, 2018

During the reporting period (2017-18) four noni varieties viz., CIARI-Sampada, CIARI- Sanjivini, CIARI-Samridhi and CIARI-Rakshak released by the institute are maintained by following standard silvicultural practices. DUS characters such as bark colour, branching pattern, crown shape, leaf shape, leaf size, number of fruits per tree, fruit colour, fruit texture, fruit size, fruit shape, number of seeds per fruit and size of seeds were recorded for all the four varieties. The data was analyzed and detailed DUS report was prepared.

The analysis revealed that out of the four varieties maintained CIARI Samridhi recorded highest fruit yield of 32 kg/tree followed by CIARI Sampada (30 kg/tree), CIARI Sanjivini (27 kg/tree) and the least lead of was recorded in CIARI Rakshak (13 kg/tree). In order to study the growth and development of seedlings 15000 elite seedlings were produced from the plus trees maintained in the mother block and are being evaluated. In order to study the growth and yield potential of CIARI Sampada as border plantation 70 seedlings of the variety was planted in the vegetable block. Further, two new accessions of Noni were collected from Afra Bay and Galathea forest area of Great Nicobar and was conserved at CIARI germplasm block for further evaluation. During the year, noni seedlings were identified with the infection of nematodes and the samples were submitted for identification of the nematode so that control measures can be suggested in the future.

3.1.43 ICAR-CISH (Guava), Lucknow

DUS characterization of guava varieties (25) available in the field gene bank was continued as per guidelines for the conduct of test for distinctiveness, uniformity and stability in guava. Reference varieties (100) were maintained in the field gene bank by following all the recommended cultural practices. Replanting and gap filling in the place of dead guava accessions due to wilt in the year 2017-18 was undertaken. On site DUS testing of two farmer's varieties was continued by collecting data as well as varieties were clonally propagated for the field gene bank. Two awareness programmes were organized in the areas where the farmers' varieties of

guava exist and require registration to explain the importance of registration and its process. Farmers were also explained how registration can benefit them.

3.1.44 ICAR-IIHR (Jasmine)

Varieties under maintenance/characterised:

Crop/ species	No of varieties under maintenance breeding
Jasminum auriculatum	6
J.sambac	23
J.multiflorum	3
J.grandiflorum	3

3.1.45 ICAR-IISR, Calicut

ICAR-IISR, Calicut is the Ndal centre for varietal maintenance, breeding and DUS testing for spice cropsspecies. The mandated crop species for DUS testing are: *Piper nigrum* L., *Elettaria cardamomum* Maton, *Zingiber officinale* Rosc., *Curcuma longa* L. During 207-18, details of entries undergoing DUS testing are as follows:

Crops	New		VCK	FV	Remarks
	1st year entries	2nd year entries			
Black Pepper (*Piper nigrum* L.)	-	-	-	4	Preliminary on-site observations taken
Small Cardamom (*Elettaria cardamomum* Maton)	-	-	-	5	Preliminary on-site observations taken
Ginger (*Zingiber officinale* Rosc.)	-	-	3	3	DUS characterization Data on 6 varieties taken
Turmeric (*Curcuma longa* L.)	-	-	4	7	DUS characterization Data on 11 varieties taken

During the period of report, preliminary observation for the on-site testing of 4 black pepper and 5 small cardamom varieties were undertaken. DUS testing completed for 6 ginger and 11 turmeric varieties.Maintenance of example varieties of black pepper, small cardamom, ginger and turmeric was done at different centres. An awareness programme on the "Provisions of PPV&FR act 2001" was organized at ICAR-IISR on 19 Jan 2018. Two applications for the registration of farmer's varieties in nutmeg were forwarded to PPV&FRA through the centre.

3.1.45.1 Varieties under maintenance/characterised:

Mandated Crop Species	**No of varieties under maintenance breeding in 2017-18**
Black Pepper (*Piper nigrum* L.)	18
Small Cardamom (*Elettaria cardamomum* Maton)	14
Ginger (*Zingiber officinale* Rosc.)	27
Turmeric (*Curcuma longa* L.	34

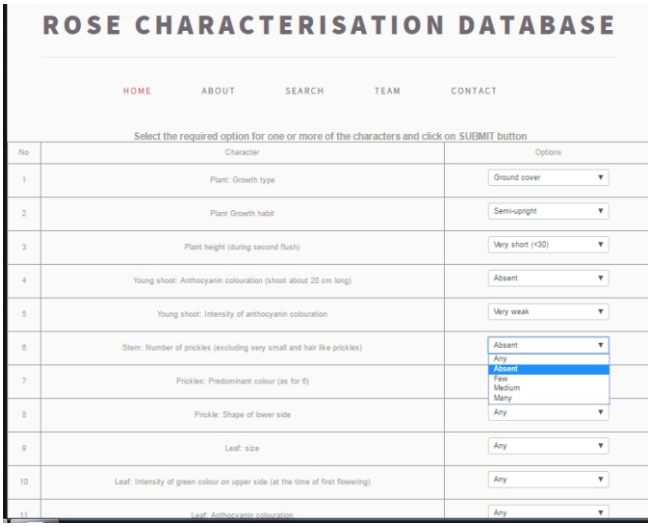
An awareness programme on the "Provisions of PPV&FR act 2001" was organized at this institute on 19 Jan 2018. The programme was inaugurated by Dr. M Anandaraj, former Director, Indian Institute of Spices Research, Kozhikode. More than 100 farmers participated in the function exhibiting their varieties. Various sessions were handled by Dr B. Sasikumar, Head, Crop Improvement and Biotechnology (IISR), Dr. Johnson George K. (IISR), Dr. Suma,TR (MSSRF- Wayanad Centre), Dr. K. Shamsuddin (CPCRI) and Dr. M. N. Sheela (CTCRI).

3.1.45.2 Applications filed with PPV& FRA

Crops	No of Var notified by the center Since 1966	No of Var notified by the center Since 1999	No of applications filed				Certificates issued	Pending applications
			ENV	New	VCK	Farmer		
Black Pepper (*Piper nigrum* L.)	Nil	Nil	-	-	4	8	Farmer-4	VCK-4 Farmer-5
On site characterization completed: VCK- (VCK-4), **Preliminary observation completed:**, Farmer (FV)-4 (1 to be rejected)								
Small Cardamom (*Elettaria cardamomum* Maton)	Nil	2	2	-	1	12	Extant-1 Farmer-5	Extant/VCK-2, Farmer-7
On site characterization completed: Extant/VCK –(2), **Preliminary observation completed :** Farmer-5 (Observation to be taken –FV (1)								
Ginger (*Zingiber officinale* Rosc.)	Nil	Nil	-	-	3	72	Nil	VCK-3 Farmer-72
DUS testing completed (based on the modification suggested for measured values): Extant/VCK –(3), Farmer (FV)-2, For DUS testing 2018-19 FV-(3) Under selection and multiplication: FV (4), Seed rhizomes to be received- Fresh(57) / recollected (6)								
Turmeric (*Curcuma longa* L.	Nil	1 (notified during 2018) also applied under VCK		1	4	155	Nil	VCK-4 New-1 Farmer-155
DUS testing completed: Extant/VCK –(4), Farmer (FV)-7, For DUS testing 2018-19, New(1), FV-(8) Under selection and multiplication: FV (3), Seed rhizomes to be received- Fresh(136) / recollected (9)								

3.1.46 ICAR-IIHR (National Rose Repository), Bengaluru

A total of 320 varieties are being maintained in the field repository. Work is in progress to find the authenticity of varieties and to remove the duplications in the varieties that have been added under different names. Under National Rose Repository, IIHR has developed retrievable digital records of images and data as digital repository over web. The digital repository was developed as a trial for selected category of roses with the support of computer scientist of IIHR. This form of repository will be useful for checking authenticity of varieties on global platform.



3.1.46.1 Details of varieties that were considered for web based digital repository based on color groups

25:Flower: color group	Category of roses		
	Fragrant	Cut flowers	Spray roses
White or Near white -1		2	
White blend -2			
Green -3			
Yellow -4	2	2	2
Yellow blend (includes varieties that are primarily yellow, but yet show some tones of pink-red) -5		1	
Orange -6	2	2	4
Orange blend (includes varieties primarily orange or orange with some other hues) -7	1		1
Pink -8	9	1	3
Pink blend -9			1
Red -10	11	5	6
Red blend -12		1	
Red purple -13	1		
Purple -14			
Violet blend -15			
Brown blend -16			
Multicoloured -17			
Pink blend (varieties primarily pink, but show tones of other hues, yellow, orange, etc.) -18			
Mauve (varieties primarily lavender and purple) -19			
Apricot blend (includes varieties that are primarily apricot, but show tones of some other hues)-20			
Total	**26**	**14**	**17**

3.1.46.2 Details of varieties that were considered for web based digital repository based on flower diameter

26=Flower diameter	Fragrance	Cut	Spray
Small -1	3		16
Medium-3	11	3	1
Large-5	12	11	-
Total	**26**	**14**	**17**

3.1.46.3 Details of varieties that were considered for web based digital repository based on flowering laterals

Flowering shoot: Flowering laterals	Fragrance	Cut	Spray
Absent-1	4	14	-
Present-9	22		17
Total	**26**	**14**	**17**

3.1.47 ICAR-Central Institute for Arid Horticulture, Bikaner

DUS testing of 04 VCKs of watermelon and 03 of muskmelon were undertaken during summer season of 2017 at ICAR-CIAH, Bikaner. Nine reference varieties of watermelon and twelve of muskmelon were also maintained.

3.1.47.1 Watermelon varieties undergone DUS testing(all VCK category): NWMH-455 (Reg/2016/1702); NWMH-945 (Reg/2016/1701); NWMH-975 (Reg/2016/1700); NWMH-354 (Reg/2016/1703)

3.1.47.2 Muskmelon varieties undergone DUS testing(all VCK category): NMMH-225 (Reg/2016/1697) NMMH-24 (Reg/2016/1699); NMMH-203 (Reg/2016/1698)

3.1.47.3 Varieties maintained during 2017-18

Crops	Name of varieties maintained
Watermelon {*Citrulluslanatus* (Thunb.) Mansf.}	Charleston Grey, Asahi Yamato, Arka Manik, Sugar Baby, Durgapura Lal, Durgapura Kesar, AHW-19, AHW-65 and Thar Manak.
Muskmelon (*Cucumismelo* L.)	Arka Jeet, Arka Rajhans, MHY-3, MHY-5, RM-43, RM-50, Durgapura Madhu, Kashi Madhu, Pusa Madhuras, GMM-3, Punjab Sunehri and Hara Madhu.

3.1.47.4 Monitoring of DUS test trial

3.1.48 ICAR- Central Institute for Cotton Research, Regional Station, Coimbatore

ICAR-Central Institute for Cotton Research, Regional Station, Coimbatore-641003, is the Ndal centre for DUS testing in Cotton and the mandated Crops are: Tetraploid cotton, Diploid cotton.

3.1.48.1 Details of DUS testing of candidate varieties in 2015-16, if any:

Crops	New		VCK	FV	EDV	IV	Date of monitoring
	1st year entries	2nd year entries					
Tetraploid cotton	2	5	nil	nil	nil	nil	27.11.2017
Diploid cotton	nil	nil	nil	nil	nil	nil	-

3.1.48.2 Varieties under maintenance/characterized:

Crops	Name or No of varieties under maintenance breeding in 2017-18
Tetraploid cotton- *G. hirsutum*	Abadhita, G Cot. 12, G Cot. 16, L 604, MCU 11, MCU 3, MCU 8, MCU 9, Narasimha, NH452, PKV Rajat, Pratima, Reba B50, RMPBS 155, Suman, ACP71, American Nectariless, Anjali, ARBH 813, Badnawar, Bikaneri Nerma, CA116, CSH 19, Deviraj, DHY286-1, EC344034, F 1378, F 320, F 505, F 846, G Cot. 20, G Cot. 22, G. Cot 18, G.Cot 10, G.cot 100, GLC 02-4-4, GSHV 112, Gujarat 67, H 1157, H 974, H1098, H1117, H1220, H1236, HS 6, J 34, JCC 1, JK 35, JK 4, JLH 168, kanchana, KC 3, Khandwa 2, Khandwa 3, Laxmi, LH 2108, LH 900, LRA 5166, MCU 5, MCU 10, MCU 12, MCU 13, MCU 5 VT, MDH 89, NCH 11, NH 545, NH 615, PG 6, PRS 74, Pusa 8-6, RAJDH 9, RHC 003, RS 2013, RS 875, Sahana, SH 2379, Sivanandhi, Sumangala, Supriya, Surabhi, SVPR 5, T7, TCH 1716, VC 21, Vikram, HLS 329, BN Red, LAHH5, Vagadkalyan, F1054, KC 2, CPD 423, LH 2076, Phule 492, H 1226, KC 3, EC-344025, F1861, RAJHH769, LH113
Tetraploid cotton- *G.barbadense*	RHC 001, Sujatha, Suvin, TCB209, P4, SBYF-425
Diploid cotton- *G. arboreum*	JK 5, AK 235, DLSa 17, KR 111, NACH 12, Dhumad, PA 402, Veena, JLA 794, DS 5, LD 327, G.Cot 17, GAK 423, G.Cot 15
Diploid cotton- *G.herbaceum*	DDhc11, G Cot. 23, G Cot. 25

3.1.48.3 Applications filed with PPV&FRA

Crops	No of Var notified by the center Since 1966	No of Var notified by the center Since 2001	No of applications filed			Certificates issued	Pending applications	Reasons for pendency
			Extant Notified	New	VCK			
	13	**3**	**3**	**1**	**-**	**3**	**1**	**Under process**

3.1.49 ICAR-IIHR (Carnation), Bengaluru

Varieties under maintenance/characterized:

Crop/ species	No of varieties under maintenance breeding
Carnation	74

Plan for 2018-19

- Maintenance and characterization of 74 genotypes of carnation under maintenance breeding
- Registration of one carnation varieties with PPV&FRA

3.1.50 ICAR-IIHR (Tuberose), Bengaluru

Mandated Crop:Tuberose (*Polianthestuberosa* L.)

Crop/ species	No of varieties under maintenance breeding in 2017-18
Polianthestuberosa L.	19

- Application of Arka Prajwal for registration under PPV & FRA was submitted.

Plan for 2018-19

i. Maintenance and characterization of19 genotypes of tuberose along with 8 breeding lines under maintenance breeding
ii. Registration of one tuberose variety with PPV&FRA

3.1.51 ICAR- PC (Pearl Millet) Mandore, Jodhpur

The DUS testing was undertaken as per approved guidelines of PPV and FRA during Kharif 2017. Ten candidate varieties for second year, twenty seven candidate varieties for first year and four farmers' varieties along with fifteen reference/example varieties were tested at ICAR-AICRP on Pearl Millet, Mandor, Jodhpur and MPKV, Rahuri. Observations on candidate and reference varieties on following 26 characters were recorded as per general and specific DUS guidelines (Pearl Millet) notified by PPV & FRA in Plant Variety Journal of India Volume No. 1, Feb-March 2007.

3.1.51.1 List of varieties under DUS testing during 2017-18

S. No.	Name of Variety	S. No.	Name of Variety	S. No.	Name of Variety	S. No.	Name of Variety
1	Marutej	8	BIO MM368Z	5	SYN-PM-DGBI-1450-10	22	M444R
2	PP56	9	BIO EM189Z	6	12 KM 11	23	M162F
3	PSP66	10	M138R	17	SYN-PM-MILKON (Forage)	24	86M74
4	GK1199	11	86M38	18	SYN-PM-DG BB 8960 (Forage pearl millet)	25	SYN-PM-DBB 239
5	BIO 13	12	M297F	9	M172R	26	86M16
6	BIO LM460Z	13	BIO 366	20	BIO 451	27	LG 73.03
7	LG 73.02	14	SYN-PM-POSHAN	21	SYN-PM-DGBI 1453-20		

3.1.51.2 Second Year Test under new category

S. No.	Name of Variety	S. No.	Name of Variety	S. No.	Name of Variety	S. No.	Name of Variety
1.	GK1185	4	GK1186	7	GK1189	10	GK1178
2.	GK1183	5	GK1201	8	GK1207	11	GK1180
3.	GK1155	6	GK1111	9			

3.1.51.3 Farmers' Varietiee

S. No.	Name of Variety	Note
1.	KSKARA	Found to be Sorghum types
2.	MUKI-P	
3.	AKUMBA	
4.	BICHHUA BAJRA	-

The monitoring team led by Dr. O.P. Yadav, Director CAZRI, Jodhpur at ICAR-AICRP on Pearl Millet, Mandor on 20.09.2017 visited the DUS experiments and observed very good conduct of the experiment. All the changes suggested by monitoring team have been incorporated in the respective entries monitoring proforma.

3.1.51.4 Varieties under maintenance/characterized:

Mandated Crop Species	Name or No of varieties under maintenance breeding in 2017-18
Pearl Millet	56

Modifications in DUS Guideline Review of Pearl Millet were presented and discussed at ICAR-IIMR, Hyderabad, on dated 7th September 2017. Final Modified draft of revised guidelines has been submitted. Training cum Awareness programme conducted on dated 19th September 2017 at Jodhpur.

3.1.51.5 Applications filed with PPV&FRA

Crops	No of Var notified by the center Since 1966	No of Var notified by the center Since 1999	No of applications filed			Certificates issued	Pending applications
			Extant Notified	New	VCK		
Pearl Millet	228	127	80	187	68	116	219

3.1.51.6 Reference/example varieties maintained:

S. No.	Reference/example varieties
1	81 B
2	841 B
3	842 B
4	843-22 B
5	ICMB 88004
6	ICMB 92333
7	ICMB 92777
8	ICMB 93333
9	ICMB 94555
10	ICMB 94111
11	ICMB 95222
12	ICMB 97111
13	ICMB 97444
14	ICMB 02333
15	ICMB 04999

S. No.	Reference/example varieties
16	RHRB 1B
17	RHRB 5B
18	RHRB 13B
19	J 2340
20	J 2454
21	J 2467
22	ICMR 356
23	H 77/833-2-202
24	G 73-107
25	H 77/29-2
26	H 77/833-2
27	H 90/4-5
28	HBL 11
29	RHRBI 1314
30	RIB 3135-18

S. No.	Reference/example varieties
31	RIB 494
32	RIB 335/74
33	PIB 686
34	MIR 525-2
35	RHB 177
36	GHB 538
37	GHB 719
38	PB 106
39	RHB 173
40	MPMH 17
41	RHB 121
42	GHB 558
43	GHB 744
44	GHB 732
45	ICMH 356

46	HHB 67 Improved
47	HHB 197
48	HHB 223
49	Pratap

50	Nandi 61
51	86M64
52	Kaveri Super Boss
53	86M86

54	MP 7792
55	JKBH 26
56	Proagro 9444

3.1.52 ICAR-CTCRI, Thiruvananthapuram

ICAR-CTCRI is a DUS Centre with mandated crop species like Cassava and Sweet potato. The gene bank of reference varieties of cassava (30) and sweet potato (40) is being conserved under this project. DUS testing guidelines of both cassava and sweet potato were standardised. DUS testing guidelines of cassava included thirty characteristics of which six traits, *viz.* pubescence on apical leaves, predominant shape of central leaf lobe, petiole colour and colour of mature stem: exterior, tuber rind colour and tuber flesh colour, were selected as grouping traits. DUS testing guidelines for sweet potato included twenty five characteristics including six grouping traits *viz.* plant growth habit, vine pigmentation, mature leaf shape, tuber shape, tuber: predominant skin colour and tuber flesh colour.

3.1.52.1 Varieties under maintenance/characterised:

Mandated Crop Species	Name or No of varieties under maintenance breeding in 2017-18
Manihot esculenta Crantz (Cassava)	24 released varieties and 22 breeding lines/landraces and reference varieties
Ipomoea batatus (Sweet Potato)	40 released varieties and ten landraces as reference varieties

Registration of cassava and sweet potato released /farmers' varieties will be carried out during 2018-19.

3.1.53 ICAR-IIHR (Chilli, Sweet Pepper and Paprika), Bengaluru

DUS testing of Chilli, Sweet Pepper and Paprika is being undertaken at ICAR-Indian Institute of Horticultural Research. Ninety-nine *Capsicum annuum* L. lines were evaluated for 55 DUS traits along with twenty-two reference varieties. Reference varieties were maintained during the period. The crop was monitored by the external expert along with the seed industry persons. Summary of DUS testing is as follows:

New		VCK	FV	Dates of monitoring
1st year entries	2nd year entries			
17	47	30	1	20.07.17 21.07.17 17.11.17

3.1.53.1 No of varieties undergone maintenance breeding

Varieties under maintenance/characterized: Mandated Crop Species	Name or No of varieties under maintenance breeding in 2017-18
Capsicum annuum L.	22

3.1.53.2 Applications filed with PPV&FRA

Crops	No of Var notified by the center Since 1966	No of Var notified by the center Since 1999	No of applications filed			Certificates issued
			Extant Notified	New	VCK	
Capsicum annuum L.	7	4	4	4	-	4

3.1.54 ICAR-NRCSS, Ajmer

ICAR-NRCSS, Ajmer is managing a project on "*Development of DUS guidelines and strengthening of DUS test centres for laboratory and field facilities, digitalization and training in medicinal, aromatic and seed spice crops*". DUS testing experiment details are given below:

	Coriander		Fenugreek	
	Candidate	Reference	Candidate	Reference
Number of candidate variety	11	25	7	18
Line to line distance(cm)	50	50	50	50
Plant to plant distance(cm)	25	25	25	25
DUS Centers	NRCSS, Ajmer and DMAPR, Anand			
Remarks	Each plot was covered by cage for maintenance of coriander seed		--------	
Candidate var denomination	Samandhar, Gaya Prasad, Dhaniya Barati Amar Dhana, Badkwa Guru, Mahaku Khushbu, Sangi, Biran, Harin, Dhaniya Sahab		Purwa, Kudki, Kalmegha, Jatni, Ramiyaram, Methioligram, Yadav(did not germinate)	

3.1.55 ICAR-NRC Banana, Trichy

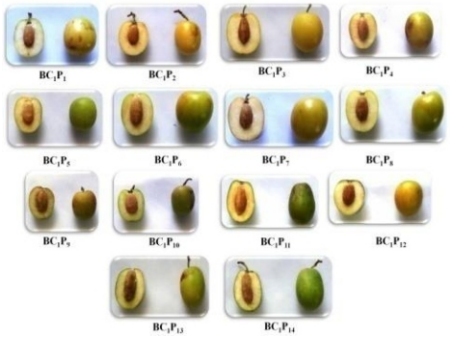
It is a Nodal centre for DUS testing in Banana that developed DUS test guideline for Banana. Brief progress is as follows:

- 38 reference accessions (virus tested) were planted in the NRCB field in February 2018.

- Awareness programmes on farmers' variety registration were conducted in three different places viz., Ainpur, Tandalwadi and Balawadi by which almost 205 farmers were benefitted.
- Applications have been filed for registration of 10 farmers varieties from southern parts of Tamil Nadu with PPV&FRA, New Delhi.

- Kamal Vikas A1 is a farmer's variety bred by the farmer Mr. Mahajan Vikas Dattatray, Ainpur of Jalgaon district, Maharashtra from the existing cv. Grand Naine which has been acquired lawfully. The growth and yield of the variety has been recorded and it was found to be distinct from other Cavendish varieties especially Grand Naine.

3.1.56 ICAR-CIAH, Bikaner



ICAR-Central Institute for Arid Horticulture, Beechwal, Bikaner, Rajasthan, is Nodal Centre for DUS testing in Indian jujube (*Ber*). During the reported period, 14 genotypes (being maintained at ICAR-CIAH, Bikaner) were characterized as per DUS guidelines for submission of data for inclusion in INDUS. Likewise, reference varieties of Indian jujube (Ber) as mentioned in National DUS Test Guidelines for Ber are being maintained. Morphological characteristics of these reference varieties were also recorded so as to confirm the distinctness, uniformity and stability in the described characters.

The centre collected nearly 25 Ber varieties/landraces from various Institutes i.e Banarasi Karaka, Banarasi Pewandi, Chhuhara, Chhuhara Bawal, Dharki No.1, Gola, Gularvasi, Illaichi, Jogia, Kaithali, Kala Gola, Kathaphal, Kismis, Lakhan, Mehrun, Mundia, Narma, Reshmi, Safeda Rohtak, Safeda Selection, Sanaur-5, Seb, Tikadi, Umran, ZG-3. The list for the varieties under maintianance breeding is as follows.

Foliage characteristics of ber varieties:

S. No.	Variety	Foliage characteristics						
		Nature of leaf apex	Nature of leaf base	Leaf length (cm)	Leaf width (cm)	Leaf curving	Leaf shape	Density of leaf pubescence on lower surface
1	Chhuhara	Obtuse	Broad	7.57	7.61	Present	Oval	Densely tomentose
2	Gola	Obtuse	Broad	8.12	7.82	Present	Oval	Densely tomentose
3	Illaichi	Obtuse	Broad	6.83	6.53	Present	Oval	Sparsely tomentose
4	Jogia	Acute	Broad	7.58	7.57	Absent	Cordate	Sparse tomentose
5	Mehrun	Acute	Broad	5.91	5.36	Absent	Cordate	Densely tomentose
6	Umran	Obtuse	Broad	9.13	7.81	Present	Oval	Sparsely tomentose
7	Chhuhara Bawal	Acute	Broad	8.56	8.41	Present	Cordate	Sparsely tomentose
8	Banarasi Karaka	Obtuse	Broad	9.87	6.71	Present	Oval	Sparsely tomentose
9	Banarasi Pawandi	Obtuse	Broad	8.11	6.76	Present	Oval	Densely tomentose
10	Dharki No.1	Acute	Broad	6.23	5.19	Absent	Ovate	Densely tomentose
11	Gularvasi	Obtuse	Broad	8.84	6.27	Present	Oval	Sparsely tomentose
12	Kaithli	Obtuse	Broad	10.21	7.57	Present	Cordate	Densely tomentose
13	Kala Gola	Obtuse	Broad	6.03	6.51	Absent	Cordate	Densely tomentose
14	Katha Phal	Obtuse	Broad	9.17	7.88	Present	Cordate	Densely tomentose
15	Kismis	Broad	Acute	8.89	5.63	Absent	Obovate	Densely tomentose
16	Lakhan	Obtuse	Broad	7.72	8.09	Absent	Oval	Sparsely tomentose
17	Mundia	Obtuse	Broad	9.96	7.84	Present	Oval	Densely tomentose
18	Narma	Obtuse	Broad	8.68	7.35	Present	Oval	Sparsely tomentose
19	Reshmi	Obtuse	Broad	8.92	6.49	Present	Oval	Sparsely tomentose
20	Safeda Rohatak	Obtuse	Broad	5.31	4.77	Absent	Ovate	Densely tomentose
21	Safeda Selection	Obtuse	Broad	8.67	5.96	Absent	Oval	Densely tomentose
22	Sanur-5	Obtuse	Broad	6.88	5.75	Absent	Cordate	Sparsely tomentose

23	Seo	Acute	Broad	7.56	6.92	Absent	Cordate	Densely tomentose
24	Tikdi	Obtuse	Broad	7.23	5.94	Absent	Cordate	Smooth
25	ZG-3	Obtuse	Broad	6.47	6.42	Absent	Oval	Sparsely tomentose

3.1.57 ICAR- Central Institute for Subtropical Horticulture, Lucknow

CISH, Lucknow is a Nodal centre for DUS testing and maintenance of reference varieties in Jamun. Brief progress is as follows:

One farmer variety from Gonda, U.P. was identified for registration from PPV&FRA, New Delhi. After getting fruiting data during the fruiting period 2018, the registration form by farmer will be submitted after fruiting season.

3.1.57.1 Assessment of Qualitative characteristics of different accessions/ varieties:

Morphological data of each character are being recorded every year. A total of 40 accessions/varieties were collected and established in the field gene bank of ICAR-CISH, Lucknow. 40 accessions were characterised with physico-chemical characters and 10 accessions were characterized with following characters.

- **Growth habit:**

The accessions were grouped in to two. 2 accessions found having semi-spreading nature. However, 8 accessions were recorded with spreading growth habit.

- **Tree foliage:**

The visual observations grouped different accessions in to two groups and all 10 accessions having dense foliage type.

- **Leaf characteristics:**

a) Mature leaf colour : Nine varieties were recorded green in colour while one variety was found dark green in colour.

b) Leaf apex : All 10 accessions/varieties were found acuminate type leaf apex.

c) Newly flush colour : On the basis of newly leaf colour of different accessions were grouped the accessions in to 2 groups.The light pinkish brown colour of newly flush was recorded in 4 accessions however, the newly leaf flush colour light greenish brown was observed in 6 accessions.

d) Leaf base : The leaf base in different Jamun accessions/varieties were recorded acute types in 9 accessions and one accession were found rounded.

- **Flowering characteristics** : The flowering characteristics of selected accessions were evaluated and the initiation of bloom and full bloom time period grouped the different accessions in to two groups *i.e.* early (2nd week February), medium (3rd and 4th week of February) and late (1st week March) for initiation of bloom. However, as far as full bloom was concerned it also grouped the accession in to groups as early (2nd week April), medium (3rd and 4th week of April) and late (1st and 2nd week of May).

Initiation of bloom and time of full bloom

- **Fruit characteristics** : The considerable differences in the fruit shape were recorded among different accessions /varieties. According to shape of fruit different accessions /varieties were grouped in to the 3 group. The shape of fruit was observed oblong in 5 accessions, ovoid in 2 accessions and round fruit shape in 3 accessions.

- **Mature fruit shape:**

Ovoid Round Oblong

- **Mature fruit apex** : The observation on the fruit apex was recorded inflattened and depressed among different accessions/varieties and 8 accessions have inflattened fruit apex while, 2 accessions have depressed fruit apex.

Inflattend Depressed

- **Mature Fruit stalk end** : The observation on the fruit base stalk end was recorded flattened, depressed and nipple shape among different accessions/ varieties. Flattened fruit base stalk end was observed in 3 accessions, 2 accessions have nipple shape and 5 accessions were depressed in fruit base stalk end.
- **Fruit colour** : The observation on fruit colour showed the grouping of accessions in to three groups. The fruit colour purple black was recorded in 5 accessions and purple red fruit colour was found in 3 accessions however, the 2 accessions the colour of fruit was recorded deep purple.
- **Fruit pulp colour** : The colour of pulp in mature fruit was observed cream white in all 10 accessions.

3.1.58 ICAR-MULLaRP-Indian Institute of Pulses Research, Kanpur

Mandate Crops: Mungbean, Urdbean, Lentil, Rajmash and Pea

3.1.58.1 Details for DUS testing of candidate varieties in 2017-18

Crop	New		VCK	FV
	1st Year	2nd Year		
Mungbean	13	-	-	13
Urdbean	52	-	-	52
Lentil	17	-	-	17
Field pea	46	-	-	46
Rajmash	6	-	-	6

Report on Mungbean, Urdbean, Pea, Lentil and Rajmash (2017-18)

- In *Kharif* season (2017) the 67 varieties of Mungbean and 41 varieties Urdbean were maintained. In *Rabi* season (2017-2018)61 varieties of pea, 39 varieties of Lentil and 14 varieties of Rajmash were maintained.
- For maintenance of these varieties 10 single plants were selected from each variety and harvested individually.
- In *Kharif* season (2017) thirteen farmers' varieties of Mungbean &fifty two farmer's variety of Urdbean tested along with reference varieties & data recorded as per DUS guideline. In *Rabi* season (2017-2018), forty six farmers' varieties of pea, seventeen farmers varieties of Lentil and six farmers varieties of Rajmash tested along with reference varieties & data recorded as per DUS guideline.
- The farmers varieties i.e. Kislai Moong and Kislai Moong-1 in mungbean and Bari, Arra, Har Urd, Ram Urd, Bhawat Urd, Narsinghpur Urd, Kanchedi Urd, Dhan Urd, Prasad Urd, Urid Pyaribai, Bisan Urd, Karan Urad, Urada Gayaprasad, Kai Urd Brajbhan Pratap, Mankali Urada, Urd Archna, Devki Urd, Udadha

Kope, Urd Sathwari in urdbean were found highly infected by the incidence of MYMV at pre flowering stage . Hence, data could not record due to proper information at all the stage of plant growth.

- In *Kharif* season (2017) two variety of urdbean (UDAY, UDWI) and in rabi season the rajmash farmers variety (Reshma, Raj) were not germinated and three variety of urdbean (MURA, SUKUMAR & MUKUND) were very late flowering type. Hence data could not take due to proper information at all stage like, flowering to maturity etc.
- The candidate variety ORAD in urdbean was found resemblance as mungbean type plant
- In rabi season (2017-18) in the following the farmers field pea variety i.e. kali choti nand, choti kali komal, choti kali jhethu, kali choti rajendra, safed batri gunda, gol batura tedhuha, vindar choti batri, dhan batra, batri mahendra, Atru matar, kanchansa matar, batri kali dana chota seed was not pure.
- One entry Matara Dewaraha received in pea which was actually Lathyrus entry.

Key observations of the monitoring team

3.1.58.2Varieties under maintenance breeding 2017-18:

S. No.	Crop Species	Name of the varieties
1.	Green gram [*Vigna radiata* (L.) Wilczek]	**Total Number of reference varieties: 67** JM 721, TARM 1, PANT M-5, SML-32, OUM 11-5, PUSA BAISAKHI, ML-818, LGG-407, GM-3, TARM-2, PANT-M-2, GM-4, BM-2002-1, PUSA 9072, ML-131, GANGA-8, PUSA-9531, BPMR-145, VAMBAN-1, IPM-2-3, BM-2003-2, MH-2-15, PANT-M-5, CO-6, TMB-37, ML-613, BM-4, LGG-450, ML-267, IPM-2-14, PUSA-VISHAL, ML-5, HUM-1, TARM-18, SML-134, NDM-1, PUSA-RATNA, SML-668, BM-2003-1, PDM-139, OBGG-52, SUJATA, SHALIMAR-M-1, KM-2, ASHA, PRATAP, RMG-62, RMG-344, RMG-268, IPM-99-125, HUM-12, PUSA-0672, PKVAKM-4, PANT M-1, MH-96-1, PAIRY MOONG, MUM-2, SONA MUNG, BDN-2, PDM-54, PS-16, DHOULI, T-44, AKM 8803, CO-4, GANGA-1, HUM-6.
2.	Black gram [*Vigna mungo* (L.) Hepper]	**Total Number of reference varieties: 41** TAU-1, VAMBAN-7, TBG-104, LBG-685, PANT-U-30, BARABANKI LOCAL, PANT-U-19, LBG-709, NDU-1, IPU-2-43, KUG-479, LBG-645, LBG-787, NUL-7, SHEKHAR-3, LBG-752, TPU-4, TU-96-2, LBG-623, IPU-94-1, BDU-1, PANT-U-40, LBG-20, MASH-1-1, PANT-U-31, TBG-123, INDIRA, NAVEEN, SHEKHAR-1, KU-96-7, AZAD-2, HIM-MASH-1, SHEKHAR-2, UG-338, AZAD-1, MASH-144, GU-1, SARLA, WBU-108, PDU-1, T-9
3.	Lentil (*Lens culinaris*)	**Total Number of Reference Varieties: 39** DPL-62, DPL-15, IPL-81, IPL-315, IPL-406, NDL-1, PL -4, PL-5, PL-24, PL-63, PL-234, PL-406, PL-639, PL-77-12, L-4076, LL-56, LL-147, LL-699, L-4147, LH-84-8, VL-1, VL-4, VL-103, VL-126, VL-507, WBL-77, JL-1, JL-3, K-75, KLS-218, HUL-57, ASHA, RANJAN, SUBRITA, BARABHIA LOCAL (RUST SES.), S.SI.S.IPL-316,PL-7,PL-8.

4.	Pea (*Pisum sativum*)	**NO OF REFERANCE VARIETY 61** ARKEL, AZAD P-1, AZAD P-2, AZAD P-3, AZAD P-4, AZAD P-5, AZAD P-31, AGETA-6, DDR-23, DDR-27, VRP-3, VRP-5, VRP-6, VRP-7, VRP-22. KPMR-9, DDR-44, HUDP-15, HFP-4, HFP-529, HFP-8909, IPFD-99-13, IPFD-1-10, IPFD-6-3, JAYANTI, KPMR-144-1, KPMR-400, KPMR-522, IFP-48, PG-3, PANT P-14, SWATI, VL-3, HFP 715, PANT 25, RFPG 79,I NDIRA MATAR 1, B-22, DMR-7, HUP-2, IM-9101, IPF-99-25, IPF-4-9, IPF-5-19, IPF-4-26, JM-6, JP-885, KFP-103, PANT P-5, RACHNA, TRCP-8, VL-1, VL-42, VL-45, VL-46, PANT P 42, HFP-9426, HFP- 9907B, IM9102, PANT P74, SKNP 04-9.
5.	Rajmash (*phaseolus vulgaris*)	**NO OF REFERANCE VARIETY 14** HUR-15, ARKA KOMAL, PDR-14, IPR-98-5, SHRIDHA, ARKA ANOOP, IPR-98-3-1HUR-137, IVFB-1, HUR-203, ARKA BOLD, HPR-35, GUJRAT RAJMASH, Amber

Plan for 2018-19

i. Evaluation of candidate variety.

ii. Maintenance of reference variety.

3.1.59 Darjeeling Tea Research & Development centre, Tea Board of India, Kurseong

FIELD DEVELOPMENT:-

(A). DTR &DC:-The plots of DUS centre were maintained, cultural operations done time to time, logging of and removing of unwanted branches of adjacent *Cryptomeria japonica* in the field.

(B). C.P.S Ging:-For the checking of distinctiveness, stability and uniformity of the tea varieties, C.P.S Ging was selected and here also fields were maintained and done all cultural operations as per required.

COLLECTION AND PRESSING OF SPECIMENS:-

(A) DTR &DC:-04 different T.R.A released clones, namely: P-1258, CP-1, T-135 and BS-9/3/76 were collected and from the selected sites in the field, characters were noted and specimens were pressed for morphological analysis.

(B) C.P.S Ging:-Following different T.R.A released clones; Namely: CP-1, P-1258, BS-9/3/76, T-135 were collected along with the recordings on field from the selected sites and were pressed for further morphological analysis, preservation and consultation.

MORPHOLOGICAL ANALYSIS AND PRESERVATION:-

Collected tea plant specimens were also studied for morphological stable characters and described according to the DUS guidelines as recommended. Worked out specimens were then properly dried and finally a herbarium was prepared representing the type specimen.

COLLECTION ⟹ PRESSING & DIGITIZATION ⟹
DESCRIPTION ⟹ REPRESENTATIVE HERBARIUM

LIST OF SAMPLES WORKED OUT OF BOTH DTR & DC AND C.P.S Ging.

DTR & DC.	C.P.S, GING
	
P-128	CP-1
CP-1	P-1258

DTR & DC.	C.P.S, GING
	
T-135	BS-9/3/76
BS-9/3/76	T-135

TRA RELEASED CLONES FOR DARJEELING.

ACCESSION	NAME OF THE CLONE.
P – 312	PHOOBSERING – 312
B – 157	BANNOCKBURN – 157

ACCESSION	NAME OF THE CLONE.
P – 1258	PHOOBSERING – 1258
TtV – 1	TEESTA VALLEY – 1

T – 145	TUKDAH – 145
AV – 2	AMBARI VALAI – 2
T – 253	TUKDAH – 253
T – 246	TUKDAH – 246
B – 777	BANNOCKBURN – 777
RR – 4/5	RUNGLI – RUNGLOIT – 4/5
B – 668	BANNOCKBURN – 668
L – 12	LINGIA – 12
P – 1404	PHOOBSERING – 1404
K – 1/1	KOPATI – 1/1
HV – 39	HAPPY VALLEY – 39
B/5/63	SUNDARAM

SKM – 1	SIKKIM – 1
CP – 1	CHIRAIDEW PARBAT – 1
T – 78	TUKDAH – 78
T – 135	TUKDAH – 135
T – 383	TUKDAH – 383
RR – 17/144	RUNGLI – RUNGLOIT – 17/144
BS – 17/1A/76	BALASUN – 17/1A/76
BS – 9/3/76	BALASUN – 9/3/76
BT-15/263	BADAMTAM – 15/263
THbo - 3	THURBO – 3
THbo – 9	THURBO – 9

3.1.60 ICAR-IARI, Regional Station, Indore

ICAR-IARI, Regional Station, Indore is the DUS centre for Wheat DUS testing. Wheat trials were sown as per the DUS test guidelines of PPV&FRA. In crop season 2017-18, 10 candidate varieties (Colored Wheat (Blue), Colored Wheat (Blue-2), Colored Wheat (Blue-3), Colored Wheat (Purple), Colored Wheat (Black), NABI MG10*, NABI MG11*, NABI MG 12*, HDCSW 16, HDCSW 18) and 3 Farmers varieties (Mohit Gold, Sonali-KAW and GOHOME,) under new category (2nd year of testing) were tested in three replication against 29 reference varieties in DUS trial 1 for DUS testing, 58 farmers' varieties (1st year of testing) were grown for Grow-out test for purification. The observations as per DUS testing guidelines were collected and compilation work is going on.

The progress of maintenance breeding / characterization, during the reporting year is as under:

Crops	Varieties
Wheat (1st trial)	
1st year entries (3)	NABI MG10*, NABI MG11*, NABI MG 12*
2nd years (7)	HDCSW 16, HDCSW 18, Colored Wheat (Blue), Colored Wheat (Blue-2), Colored Wheat (Blue-3), Colored Wheat (Purple), Colored Wheat (Black),
Farmer Varieties (3)	Mohit Gold, Sonali-KAW and GOHOME
Farmer varieties (for evaluation): 58	Vanshi Mukesh, Gehoon Guljaar, Badam,Tripathi Lali, SKF-CN 5, Mundi, SKF-WA 2022, SKF-WA 462 (Waman), SKF-WA 6058, Genhoo Sarbati Pili, Britta Sujeet, Betaiya, Safeshi Nagendra, Safeda Jokhu, Gorakhnath No.-1, Azad, Patel-10, Guhum, SKF-WA 6051, Palak, Sheriya, Gehu Sitabai, Sharbati Rajpal, Suklal Gehu, Gehoon Sipatiya, Sehwa, Pili Gehu Mahesh, Sarbati Kaluram, Kharia, Barka, Pancha Heera, Churka, Smariti, Maharajpura Genhu, Sonalika, Gehoon Pasi, Hema, Chapatiya, Sakkhu, Chatak, Sehra, Sriman Gehoon, Nandram Genhu, Mangla 1, Gajab, Mangla Ramji, Sehariya Shyam, Mangala Ajay, Gehun Lal Mundiya (GKSS Gehun-1), Gehun Safed Mundiya (GKSS Gehun-2), Gehun Jhunsia (GKSS Gehun-3), Sarbati Phool Seori, Gehu Chandrabhan, Kathia Mukta, Bilase, Shoda, Surajmani, Ulochana


Monitoring team at DUS Field


Mixture observed in farmers varieties

Key observations of the Monitoring team: Over all performance of DUS trials was very good. The crop was in the soft dough stage and most of the candidate varieties of DUS trials expressed the claimed characteristics at the time of monitoring. A lot of mixture was observed in farmers varieties.

Varieties under maintenance/characterized:

Crops	Name or No of varieties under maintenance breeding in 2017-18
Wheat	Released varieties aestivum – 80 Released varieties Durum & Dicoccum – 50

Training cum Awareness programme conducted, publications and other significant achievements, if any: Awareness training programme was given to farmers about PPV & FRA; and about registration of farmers wheat varieties on 02.02.2018 in Dewas District. The farmers visiting our research station are being informed about the same.

Applications filed with PPV&FRA (applicable only for 102 notified crop species. Others file Column 2 and 3, if applicable): NA

Plan for 2018-19:

- Compilation of DUS data 2017-18
- DUS testing of wheat varieties
- Maintenance of reference collection of wheat varieties, procurement of seed of newly released wheat varieties.

3.1.61 ICAR-CPCRI, Kasargod, Kerala

Data on DUS descriptor traits, excluding colour of fruit and petiole, were recorded in eleven reference varieties and entered in excel for development of DUS database. Further, 11 released/extant coconut varieties field planted during 2013, for maintenance breeding were observed for vegetative, reproductive and fruit component traits and facilitating refinement of descriptor traits and DUS test guidelines. A few descriptor traits, viz. plant collar girth, number of leaved produced in one year, leaflet length, leaflet breadth, are accordingly suggested for

reclassification. Higher percentage of flowering was recorded under 6m x 6m spacing as compared to 4m x 4m spacing, with more than 50% flowering in WCT, COD, Kalparaksha, Kera Sankara. Early flowering, 25 months after planting was recorded in Chowghat Orange Dwarf followed by 26 months in Chandra Sankara. Analysis of descriptor data indicated significant differences between accessions and spacing. Palm height, length of petiole, length of leaf bearing portion were significantly higher in closer spacing of 4m x 4m, whereas longer leaflet length, broader leaflet breadth and higher leaf production was observed in 6m x 6m spacing. Kalpa Mitra was found to be having higher palm height, length of petiole, length of leaf bearing portion among the varieties planted, while broader leaflet breadth was recorded in Kalpa Dhenu.

Twenty seed nuts of reference/released/extant varieties (Chowghat Orange Dwarf, West Coast Tall, Chowghat Green Dwarf, Malayan Yellow Dwarf, Malayan Orange Dwarf, Gangabondam Green Dwarf, Kalparaksha, Kalpa Dhenu, Kalpa Pratibha, Kalpa Mitra, Chandra Kalpa, Kera Chandra, Kalpatharu, Kalparaksha) were sown in polybags for raising seedlings for recording seedling growth characters and meeting DUS test requirements.

There are presently no varieties under DUS testing at the centre. One application for recording on-site DUS test traits has been received from PPV&FRA and further data on descriptor traits of the candidate variety has been sought from PPV&FR Authority. The requested information and seedlings for recording DUS test data are awaited.

3.1.62 CCS HAU, Hisar

Total entries:

S. No	New	VCK	EDV & IV	Reference varieties
2nd Year Trial	09	NA	NA	11

DUS trial for CCS HAU, Hisar 2017-18

Candidate Varieties	NCS-904 Bt, RCH 602 BG-II, SVA-371, SVA-145, SVAGMS-47, KR-111, BIO 54510, BIO 6165-2 BG II, SWCH 4704 BG II
Reference Varieties	Abadhita, L-604, JLH 168, MCU 5, AKA-7, Veena, Jawahar Tapti, PKV-Rajat, JK 4, Badnawar, GSHV 112

Monitoring of DUS trial 2017-18 on 20.09.2017

All the 20 entries were sown in randomized block design (RBD) with three replications and the observations were recorded on the following parameters: Hypocotyl pigmentation, Leaf colour, Leaf hairiness, Leaf appearance, Leaf gossypol glands, Leaf nactaries, Leaf petiole pigmentation, Leaf shape, Plant stem hairiness, Plant stem pigmentation, Plant height, Plant growth habit, Bract type, Time of flowering, Petal colour, Petal spot, Flower stigma, Anther filament colouration, Pollen colour, Male sterility, Boll bearing habit, Boll colour, Boll shape, Boll prominence of tip, Boll surface, Boll opening, Weight of seed cotton/ball, Seed fuzz, Fuzz colour, seed index, Ginning percentage, fibre colour, fibre length, fibre strength, fibre fineness, fibre uniformity and fibre maturity.

Training and awareness programme under the Project: The Cotton Section, Department of Genetics and Plant Breeding, CCS Haryana Agricultural University, Hisar has organized two One Day Training-cum-Awareness Programmes on Protection of Plant Variety & Farmer's Right Act (PPV & FRA) 2001 on 30.01.2018 and 15.02.2018 for farmers, students, personnel from public and private seed companies and faculty of the university. 60 participants took part in each of these trainings. The Chief Guests, Dr. S.S. Siwach, Director, Directorate of Research, CCSHAU, Hisar and Dr. K.S. Grewal, Dean, College of Agriculture addressed the participants. Dr. R.S. Sangwan, Head Cotton Section, delivered the brief overview of the PPV & FR Act 2001 its objectives and salient features. The other faculty of the department also delivered the lectures on the various aspects (the importance of registration of plant varieties under PPV & FR Act 2001, Conduct of DUS Test, recording of DUS characters and maintenance of reference varieties in Cotton, procedure for registration of new plant varieties, essentially derived varieties (EDV) and extant varieties and its importance, varietal identification: Molecular & Biochemical techniques etc.) to upgrade the knowledge of the participants. Visit to modern seed store and DUS testing Area was also arranged for the participants.

3.1.63ICAR-Central Citrus Research Institute, Nagpur

Centre is maintaining a DUS Testing Centre for Acid Lime, Mandarin, Sweet Orange.Reference varieties of Mandarin, Acid lime and Sweet orange are maintained at this Institute. On- Site DUS testing for Registration of different citrus varieties with PPV&FRA started last year. Total 3 citrus varieties from Mandarin, Acid lime and Sweet orange group were taken for Onsite DUS testing of Citrus.

On-site DUS testing for second season were completed for registration of 3 new varieties in citrus (NRCC Nagpur Mandarin Seedless- 4, NRCC Acid Lime-7 and NRCC Acid Lime-8). DUS characters were recorded for all varieties and validated by experts. All varieties were characterized as per DUS characters.

3.1.64ICAR- ICAR-Indian Institute of Horticultural Research, Bengaluru

It is maintaining a DUS centre for Papaya and Custard apple.

Brief objectives:

1. To maintenance of reference/ example varieties and digitalized database
2. To develop the digital database of papaya and custard apple varietal wealth.
3. Registration of crop varieties and testing of candidate varieties.

Major achievements:

Papaya: The reference/ example varieties numbering 15 are being maintained in the Field at ICAR-IIHR as well as through seeds.

Custard Apple: The reference example varieties numbering 10 are maintained in the Field Gene Bank at ICAR-IIHR.

DUS testing: On-site DUS testing of custard apple variety NMK-1 has been completed and final report also submitted. Fruit exocarp colour is distinct which is Yellow Green (RHS-144B) in colour whereas reference variety Balanagar has Green (RHS 143C).NMK-1 also produces big sized fruits with self fruitfulness.

3.1.65ICAR-Regional Centre of Central Tuber Crops Research Institute, Bhubaneswar

This DUS centre is maintaining a varietal gene bank with 22 referral varieties of taro and 18 of elephant foot yam.

Taro: In case of taro, 51 primary characteristics used for grouping. The key characteristics are as follows.

I. **Plant growth habit** (height, growth habit)
II. **Leaf type** (shape of leaf tips, position, leaf blade margin)
III. **Petiole type** (colour, bending at lamina junction, petiole junction colour)
IV. **Corm characteristics** (shape, skin surface, skin colour, degree of fibrousness, branching, no. of secondary corms, flesh colour, no. of cormels)
Dasheen & eddoe are major types, besides specific stoloniferous and gaint swamp taros.

Dasheen taro

Eddoe taro

Elephant foot yam: In case of elephant foot yam, 41 primary charecteristics have used for grouping. The key charecteristics are as follows.

I. **Plant growth habit** (Height, Plant type)
II. **Leaf type** (Total number of leaves/rachis, Leaflet shape, Leaflet color, Leaflet vein colour, Leaf waxiness)
III. **Petiole/Culm type** (Size of speckles, Distribution of speckles, Rachis colour, Rachis pattern) Cormlet shape,
IV. **Corm characteristics** [(Shape, No.of corm wrinkle, Epidermal colour, flesh color, Skin texture, Bract colour of main bud, Corm/cormlet shape]

Elephant foot yam with few cormlet

Elephant foot yam with more cormlets

3.1.66 Dr. Balasaheb Sawant Konkan Krishi Vidyapeeth, Dapoli. , Ratanagiri

This Centre has maintaining 10 Reference varieties of Nutmeg for breeding programme and further we have sent total 20 farmers Nutmeg varieties applications to authority for registration

Plan for 2018-19:

1. To survey and Characterization of new genotypes in the region.
2. To collect and characterize newly released varieties of Nutmeg in Konkan region
3. To register the farmers' varieties from Konkan region to PPV & FRA.
4. Creation of database and publication of information generated under the project.
5. Maintenance of farmer's varieties.

Nutmeg seed without pericarp found
at Kelshi Tal- Dapoli and Khanoli Tal- Sindudurg.

Twin nutmeg seed with mace cover found
at Khanoli,Tal-Sindhudurg.

Twin nutmeg seed with mace cover found
at Kelshi Tal-Dapoli

Survey of nutmeg trees on farmers field
at Murudjanjira, Alibag

3.1.67 Division of Vegetable Science,ICAR-Indian Agricultural Research Institute, New Delhi (Chilli, Bell pepper and Paprika)

ICAR-IARI, New Delhi is the co-nodal center for testing the chilli, capsicum and paprika varieties for northern region of the country. The centre maintains 45 number of reference varieties. Due to severe leaf curl incidence which is common in *Kharif* season, ICAR-IARI has started taking up evaluation trials in summer season. The center evaluated 47 entries in summer season of 2017-18 from private companies which included 14 new entries and 33 VCKs along with reference varieties. In *Kharif*, 2017-18, centre evaluated 47 new entries & reference varieties for the second year. This trial was taken up in *Kharif* as first year evaluation was done in *Kharif* 2016.

Crops	New		VCK	FV
Chilli, Capsicum, Paprika	1st	2nd		
	14	47	33	-

- Entries Reg/2015/1694, Reg/2016/77, Reg/2016/80 and Reg/2016/82 did not germinate in summer trial and one of the entries REG/2015/2099 did not germinate in *Kharif* trial.
- Reg/2015/2103 had moderately triangular fruits which were short and broad. Fruits of Reg 2015/2104 were capsicum type but entries were of chilli category as maximum resemblance of plant type was to chilli.

3.2 Field Gene Banks

3.2.1 Dr. Y.S. Parmar University of Horticulture and Forestry, Regional Horticultural Research and Training Station, Mashobra, Shimla

The centre has established a Field Gene Bank for Temperate Fruits at RHRTS, Mashobra near Shimla.

3.2.1.1 Brief objectives are as follows:

- Maintenance of variety collection and maintenance breeding blocks of temperate fruits-apple, pear and sweet cherry.
- Morphological characterization of varieties from the DUS point of view.
- Collection of prominent farmers' varieties.

3.2.1.2 Details of varieties collected in 2017-18: In apple variety collection block, four new varieties viz; Buckeye Gala, Modi, and Red Cap Veltode from Vita Fruit Nursery, Italy were added. In variety collection block of Pear, Carmen, Concorde and Abate Fetel from Vita Fruit Nursery Italy, were also added during the year.

3.2.1.3 Varieties under maintenance/characterised since establishment of Field Gene Bank

Sl No	Crops	Name of the varieties under maintenance
1	**Apple- 258 varieties**	AAS/GP/BSP/04, AAS/GP/BSP/09, AAS/GP/BSP/13, Ace spur, Adams, Akbar, Ambred, Ambri, Ambrich, Ambroyal, Ambstarking, American Apriouge, American Jolly Flower, Antinovika, Auviel Early Fuji, Aurora, Aztec, Beauty of Bath, Belrina, Benoni, Boycan, Braeburn, Bright -N -Early, Brookfield Gala, Bukinghum, Bulter's Grieve, Camspur, Chanpora Selection, Chaubatia Anupum, Check Ambri, Co Fuji, Commercial, Coop-13, Cooper- 4, Crimson Gala, Devenshire Quarrenden, Dorset Golden, Early Shanbury, EC 239451, EC 349914, EC 539446, EC 539449, EC 539450, EC 539451, EC 539457, EC 83683, Empire, Fuji, Fuji Kiku, Fuji Raku Raku, Gala Mitchella, Gala Must, Galaxy, Gale Galla, Ginger Gold, Gloster, Gibson Golden, Gold Rush, Golden Reinders, Golden Smoothee, Green Sleeves, Hardeman, Hardispur, Honey Crisp, Honey Gold, Honey Sweet, Improved Red Delicious, Indo, Jay Darling, Jona Mac,Jonared, Jeromine, Jonica, Kanoil Sinap, King of Pippins, Lal Ambri, Lal Cardinal, Laxton's Fortune, Laxton's Superb, Lodi Early Golden, Lord Lambourne, Maayan, McIntosh, Miller's Sturdee Spur, Neema Earliest, Mariri Red, Neer Early Staying, Oregon spur, Oregon Spur Canada, Oregon Spur II, Parkdale, Pink Lady, Pippin Litovsky, Prima, Priscella, Red Free, Red Gravenstien, Red Royal, Red Spur, Red Velox, Redlum Gala, Resi CR, Rich a Red, Rose Marie, Royal Gala, Rubijon, Sansa, Scarlet Gala, Scarlet spur II, Schlomith, Senator, Shalimar – I, Shalimar – II, Shireen, Silver spur, Stark Cardinal, Stark Earliest, Stark Early Blaze, Stark Summer Gold, Starkrimson Gold, Summer Queen, Summer Red, Sun Fuji, Sunheri, Super Chief, Tallisare, Top Red, Versifield, Vista Bella, Wealthy, Wellspur, Winter Commercial Zillatei Crimson, Tydeman's Late Orange, Vered, Yellow Delicious
2	**Pear- 40 varieties**	Smart, Hayward, Louise Bonne of Jersy, Severenta, Grand Drouard, Zypece Hopece Copeceae, Doyenne du Bussach, PI264649, Clapp's Favourite, Flemish Beauty, Red Bartlett, Virod Anglis, Mannig Elizabeth, Jargonelle, Gentle Blanc,a Bergamet, Berlautsa, King's Pear, Wilder Early, Maryland, Leconte, Hood, Doyenne du Comice, Packham's Triumph, Worden Sickle, Concorde, Conference, Taylor's Gold,Moon Glow, Santya Braskaya, Keiffer,Alozwed Hardee, Lupsi, Beurre Hardy,Vicar of Winkfield, Badshah, Bur Giffard,William Pear, Monarch, Devoe, PI282935

3	**Cherry-46 varieties**	Bedford Prolific, Bigarreau Napolean (Double), Bigarreau Noir Grossa (Mishri), Bing, Black Heart, Bradbourne Black, Celisor, CITH -1, CITH -3, CITH-12, CITH-13, CITH-14, CITH-15, CITH-16, CITH-4, CITH-5, CITH-8, Desna, Durone de Vignola, Durone Nero-I, Durone Nero-II, Durone Nero-III, Early River, Foya Travida, Gaucher, Germarsdofer, Guigne Noir Hative (Makhmali Glassa), Guigne Pourpea Prececce (Awal No), Lambert, Lapins, Merchant, Merton Glory, Mora de Cazzana, Noir de Guben, Rainer, Red Heart, Roundel Heart, Sam, Seneca, Stella, Sunburst, Sweet Heart, Triumph Domini, Van, Vega, White Heart
Fruit characterisation of apple varieties under maintenance breeding block		
4	Apple-61 varieties	Ace Spur, Anna, Bright –N-Early, Brookfield Gala, Carpendoo Bianco, Coe Red Fuji, Criterian, Devonshire Quarrenden, Dorset Golden, Early Red Bird, Early Red One, Ellison's Orange, Gale Gala, Gibson Golden, Gloster, Gold Spur, Golden Delicious, Granny Smith, Hardiman, James Grieve, Lalla Delicious, Lord Lamborn, Laxton's Superb, Liberty, McIntosh, Mollies Delicious, Mutsu, Oregon Spur-II, Parks Dale, Red Baron, Red Chief, Red Fuji, Red Gravenstein, Red Golden, Red Spur, Real Mecoy, Rus Pippin, Silver Spur, Scarlet Gala, Scarlet Spur-I, Scarlet Spur-II, Schalet Spur, Skyline Supreme Delicious, Sparton, Stark Earliest, Starkrimson, Stark Spur Golden, Super Chief, Top Red, Tydemans Early Worcestor, Vance Delicious, Wealthy, Wealthy Double Red, Well Spur, Winter Commercial, Winter Banana, Willson's Red June, Well Spur, Worcestor Pearmain, Yellow Newton, York-A-Red.

In Apple characterization of varieties for vegetative parameters (one year old shoot: thickness, one year old shoot: internodal length, one year old shoot: no. of lenticels, one year old shoot: Colour on sunny side and one year old shoot: Pubescence on shoot, leaf blade: length, leaf blade: width, leaf blade; ratio length/width) was done.

In maintenance breeding block of apple, characterization for flower characters (flower colour at balloon stage and arrangement of petals) and fruit characters (fruit weight, fruit size (length and diameter), length/ diameter ratio, size of eye, length of sepals, number of lenticels, length of stalk, thickness of stalk, depth of stalk, width of stalk cavity, depth of eye cavity, firmness of flesh and colour of flesh were done only for those varieties which came into fruiting during the year 2017.

In pear and cherry, data was recorded for vegetative parameter (Tree: vigour, Tree: branching Tree: habit, One year old shoot; growth, One year old shoot: Length of internodes) and in cherry data was recorded for Tree: vigour, Tree: habit, Tree: branching, One year old shoot: length and one year old shoot: thickness.

3.2.1.4 Training cum Awareness programme on Apple DUS testing:

Two days practical training on ***Principles of DUS Testing of Apple Varieties according to UPOV System*** was jointly organized by Indo-German Bilateral Co-operation in Seed Sector project and Protection of Plant Varieties and Farmers' Rights Authority, New Delhi during 6-7th June 2017 at Regional Horticultural Research and Training Station, Mashobra, Shimla. Dr R C Agrawal, Registrar General, PPV&FRA, New Delhi, Dr Eric Schulte, BSA, Dr H C Sharma Vice Chancellor, UHF, Nauni and Dr Sushma Bhardwaj, Associate Director, RHR&TS, Mashobra were present during the workshop. This training was attended by fruit experts from all over India. Discussions were held on the use of guidelines and characteristics, descriptors and reference collection of apple as per UPOV, PPV&FRA; DUS testing procedures and on-site testing in India during the technical session by different experts. There was

a visit to field gene bank where practical demonstration on recording of data and their interpretation was given. A visit to Stokes Family Plantation, "Harmony Hall Orchards" was made on June 7, 2017. Manager of the plantation briefed about the area under plantation, different varieties planted, intercultural operations and management practices, harvesting and post harvest handling. Discussions were made on canopy management, root stocks, fertiliser management etc.

3.2.2 BAU, Ranchi

It is implementing a Field Gene Bank project "*Maintenance of live repository for fruit trees and medicinal plant varieties under in situ collection for eastern India ecosystem*." Forty-three mango varieties are being maintained in field gene bank.

Under citrus, acid lime, Mosambi and Nagpur mandarin have been collected from NRC, Nagpur and Khasi Mandarin from ICAR-Barapani Shillong.

3.2.2.1 Brief objectives:

i. To establish & maintain live repository of registered/ farmer's varieties and development/refinement of descriptors for regionally important fruit crops namely Mango, Aonla, Guava, Citrus, Jackfruit and Banana (Eastern Region).

ii. To evaluate the farmers' varieties of Eastern India by means of DUS for its morphological characterization and maintenance of registered FVs in Eastern Region

3.2.2.2 Detail of Varieties collected in 2017-18

Sl No	Crop Sp	Name of Varieties	Type of Variety	Reg details, name of the applicant and source
1.	Mango	Sundrag (Sindrauli)	Farmers Variety	Reg/2014/685, Baishakhi devi, Vill. Kuchhu, P.O. - Hundru Dist. Ranchi
2.	Banana (No. of Plant – 5 nos)	Pathari kela		Reg/2015/275, Rajesh Kumar shah, Vill. Garke, P.O. – Kolouhanm Dist. – Kaimur (Bihar)
3.	Banana (No. of Plant – 3 nos)	Sarodag kela		Reg/2015/322, Loknath singh, Vill. – Sarodag, P.O. – Adhaura, Dist. – Kaimur (Bihar)
4.	Menthol mint	Pudina Barahmasi		Reg/2015/311, Tripuri singh, vill.- Bhashi, P.O. – Umapur, Dist.-Kaimur (BIhar)

Farmers' variety received from PPV&FRA regional centre, Ranchi (2018-19)

S.N.	Crop	Acknowledgment No.	Crop/Denomination
1	Mango	REG/2015/1089	Mango/Ali Surjapuri
2	Mango	REG/2016/1571	Mango/Jayanti
3	Grapes	REG/2015/1098	Grapes/Jungli Grapes Beal

3.2.2.3 Varieties under maintenance/characterised since establishment of Field Gene Bank

Centre is maintaining 42 varieties in Mango of commercial importance for Eastern Region and 6 varieties in Citrus.

3.2.3 BBSKKV, Dapoli, Maharashtra

The University is managing a project, viz.,'Collection, Maintenance, Evaluation and Development of Descriptors of Fruits, Plantation Crops and Tree Spices through live repository'

Mandated Crops: Mango, Citrus, Turmeric, Banana, Black pepper, Cardamom, Jackfruit, Nutmeg and farmers' varieties.

3.2.3.1 Varieties under maintenance/Characterised

Sr. No.	Crop	No. of varieties/Ecotypes under maintenance
1.	Mango	36
2.	Turmeric	13 Ecotypes
		31 Varieties
3.	Cardamom	5
4.	Citrus	4 Species
5.	Kachai Lemon	1
6.	Black pepper	6
7.	Banana	30+8
8.	Nutmeg	1 Variety (3 Plants)
9.	Jackfruit	2 Variety (14 Plants)
10.	Farmers' varieties	160

3.2.3.2 Collected and conserved the following material in Field Gene Bank

Sl. No.	Name of species	No. of germplasm collected	Source
1.	Mango	20 Varieties	RFRS Mango Research Station Vengurla, Department of Horticulture, Dapoli. CES Wakwali, Shri. Bhushan Padmakar Nabar, Math, Vengurle
2.	Mango (Villaikolamban)	280 Plants	CES, Wakawli
3.	Banana	30 Varieties	NRC, Tamil Nadu
4.	Citrus	3 Varieties	National Research Centre for citrus, Nagpur
5.	Cardamom	9 Varieties	Cardamom Research Station Appangala and Indian Cardamom Research Institute, Myladumpara
6.	Turmeric	38 Varieties	Dr. Ashok Chiwate, Agri. Research Station Digras Sangli, Indian institute of Spices Research Farm, Peruvannamuzhi, Shri Sanjay Jadhav, Badlapur, Maharashtra
7.	Ginger	4 Varieties	Dr. Ashok Chiwate, Koregaon, Maharashtra, Agri. Research Station Digras Sangli, Shri. Shripad Digamane, Sangli, & Shri. Santosh Darekar, Borgaon, Satara.
8.	Black Paper	15 Varieties	Paper Research Station Panniyur & Indian Institute of Spices Research Farm, Peruvannamuzhi

3.2.3.3 Material received and conserved in the Field Gene Bank

Sr. No.	Name of species	No. of germplasmsreceived	Source
1.	Banana	8 Varieties	Sri Vijayan, President, Chengalikodan Banana Growers Association Erumaprtty, Thrissur, Kerala

2.	Kachai Lemon	10 Plants	Manipur Centre, Imphal
3.	Jackfruit	2 Varieties	Applied at PPV & FR Authority, New Delhi.
4.	Chilli	15 gm	Central Costal Agri. Research Institute, Goa
5.	Turmeric	2 Varieties	Punjab Agri. University Ludhiana
6.	Planting Material	160 Plants	IPR Cell, Kerala Agricultural University, Kerala
7.	Yam	5 Varieties	Shaji . N. M. Arattuthara Wayanad, Kerala

3.2.3.4 Varieties nominated for registration being maintaine maintained in Field Gene Bank

Sr. No.	Name of species	Denomination	Source
1.	Rice	Sarvat	Shri. Parshuram Ramji Lambe, Vadi Jaitapur, Khed, Ratnagiri
2.	Rice	Tichin	Shri. Balkrishna Kanu Daul, Dapoli, Ratnagiri
3.	Rice	Wada Kolam	Shri. Sanjeev Prabhakar Samel, Panvel, Raigad
4.	Rice	Thombe	Shri. Dattaram Tukaram Yelamkar, Dapoli, Ratnagiri.
5.	Coconut	Konkan Bhatye Coconut Hybrid-1	Regional Coconut Research Station, Bhatye, Ratnagiri

3.2.3.5 Applications filed with PPV & FRA

Crops	No of Var notified by the center Since 1966	No of Var notified by the center Since 1999	No of applications filed				Certificates issued	Pending applications
			ExtantNotified	New	Farmers Variety	VCK		
Okra	-	-	-	-	1	-	-	1
Rice (Wadakolam)	-	-	-	-	1	-	-	1
Rice (Sarwat)	-	-	-	-	1	-	-	1
Rice (Tichin)	-	-	-	-	1	-	-	1
Rice(Thombe)	-	-	-	-	1	-	-	1

3.2.4 National Gene Bank, NBPGR Old Campus, New Delhi

The National Gene Bank of PPV&FR Authority was established at the old Campus of National Bureau of Plant Genetic Resource (NBPGR), Pusa, New Delhi. PPV&FR Authority is managing the rented facility for safe custody under Medium Term Storage. The working of medium term facility is being monitored by the technical experts of NBPGR. The temperature of medium term storage is maintained at $\pm 4^0$C and the relative humidity has been adjusted to 35%. The relative humidity and temperature of the medium-term storage (MTS) module and the DUS test repository are recorded everyday by the electrician and major problems, if any, are brought to the notice of technical personnel at NBPGR. Technical help was offered time to time to the Authority official for packaging, sealing and processing the variety samples for DUS test. True ("orthodox") seeds of registered varieties under the medium-term storage conditions and the seed samples for varieties undergoing DUS test/grow out test are being stored. The mandated activities are significantly different in comparison to any ex-situ germplasm bank such as storage under medium term, seed handling, re-packaging, dispatch for field-testing at DUS test centers required for plant variety protection, evaluation of seed quality parameters etc. and the legal necessities are to be followed. The seeds stored for registered varieties can also be utilized for resolving dispute settlement, compulsory licensing and other such issues as deemed fit under the requirements of the Act.

3.2.4.1 Medium Term Storage of Seeds of Registered Varieties & DUS Repository

Seed samples of 3335 varieties notified under section 5 of the Seeds Act, 1966 are being kept in seed cabinets designed specifically for seed storage. These are being kept under controlled climatic conditions at 4^0C temperature with 22±5% relative humidity to ensure that their viability is maintained for longer duration. The seed samples of registered varieties are stored up to the period of protection and viability is checked at prescribed intervals as per crop specific standards and requirement. A total of 6563 seed samples of various categories of varieties were arranged in DUS test repository.

3.2.4.2 Short Term storage of seeds of varieties under DUS testing

Progress of seed samples of registered varieties conserved in the National Gene Bank under Medium term storage condition & DUS Repository (as on 31 March, 2018)

S. N.	Crops	DUS Test Repository (STS) (Candidate varieties for DUS test) SEED RECEIVED A					Medium Term Storage (4˚C) CERTIFICATE ISSUED B					GRAND TOTAL (A+B)
		New	VCK +EDV	Farmer	Extant Notified	Total (A)	New	VCK +EDV	Farmer	Extant Notified	Total (B)	
1	Bread Wheat	20	7	99	12	138	25	5	12	135	177	315
2	Brinjal	111	91	74	4	280	5	21		11	37	317
3	Cabbage	17	1			18				1	1	19
4	Castor	5	3	5		13	2	1		5	8	21
5	Cauliflower	37	11	12	1	61	1			3	4	65
6	Chickpea			59	1	60	2		2	46	50	110
7	Cotton	387	188 156	1	11	743	74	126+1	1	79	281	1024
8	French Bean			4		4						4
9	Pea	3	2	69	2	76				27	27	103
10	Green Gram	4	1	42	2	49		1	2	30	33	82
11	Groundnut	3		18		21				34	34	55
12	Jute	8	1	4		13	6			11	17	30
13	Lentil			52		52				12	12	64
14	Linseed			45	2	47				5	5	52
15	Maize	248	38	220	7	514	95	48	6	74	222	736
16	Mustard	12	8	55	2	77	3	12	6	51	72	149
17	Okra	65	38	16	2	121	8	12		15	35	156
18	Onion	3	11	5	1	20				8	8	28
19	Pearl Millet	131	25	16	6	178	43	30		49	122	300
20	Pigeon Pea	13	2	158	3	176	8	2	7	20	37	213
21	Rapeseed			18	1	19			5	13	18	37
22	Rice	269	32+2	2184	35	2522	89	46	1474	179	1788	4310
23	Safflower	1		1	2	4				6	6	10
24	Sesame			58	3	61			1	8	9	70
25	Sorghum	56	8	57	2	123	57	36	4	37	134	257
26	Soybean	3		21	4	28	2	1		29	32	60
27	Sunflower	63	7			70	28	17		10	55	125

28	Tomato	104	78+3	17	7	209	11	17		10	38	247
29	Urdbean	1	1	100	2	104			1	19	20	124
30	Kidney Bean			20		20		2		8	10	30
31	Coriander	1		26		27						27
32	Bitter Gourd	12	19	11		42						42
33	Pumpkin			26		26				3	3	29
34	Bottle Gourd	7	8	40		55				4	4	59
35	Cucumber	7	15	14		36				2	2	38
36	Barley	3	5	25	3	36		1		14	15	51
37	Fenugreek			9		9						9
38	Watermelon	4	6			10						10
39	Muskmelon	4				4				2	2	6
40	Finger millet			29	5	34				5	5	39
41	Foxtail millet			21		21				1	1	22
42	Chilli	89	96	14	6	205				7	7	212
43	Ridge Gourd	1		18		19				1	1	20
44	Vegetable Amaranth			3		3				1	1	4
45	Spinach Beet										1	1
46	Little Millet			75		75				1	1	76
47	Isabgol			1		1						1
48	Barnyard millet			35		35						35
49	Custard Apple			1		1						1
50	Grain Amaranth			1		1						1
51	Kodo millet			95		95						95
52	Kulthi			1		1						1
53	Marigold			3		3						3
54	Papaya			1		1						1
55	Perilla			1		1						1
56	Spider flower (Cleome viscosa)			1		1						1
	TOTAL	**1692**	**863**	**3881**	**126**	**6562**	**459**	**379**	**1521**	**976**	**3335**	**9897**

3.2.4.3 Monitoring of registered varieties for viability and moisture content

Seeds samples of 599 registered varieties stored in the Gene-bank (MTS) of PPV&FRA were tested after 5 years of their storage for cereals and legumes and 3 years for oil seeds.

Crops	No. of varieties monitored during the FY 2017-18	Germination Range	Moisture range
Rice	146	0-100	5.39-16.52

Sorghum	18	30-100	6.55-13.63
Maize	63	0-100	5.33-13.86
Bread Wheat	34	84-100	6.21-11.03
Pearl millet	45	18-100	7.47-12. 99
Chickpea	15	94-100	8.31-14.08
Pigeonpea	5	58-100	9.99-12.42
Urd	01	96	10.78
Mung gram	01	86	10.35
Cotton	84	30-100	4.71-12.28
Jute	04	66-94	9.32-13.16
Cauliflower	02	52-100	9.83-10.25
Brinjal	01	76	10.06
Castor	06	78-98	4.92-5.96
Linseed	03	58-100	6.76-7.53
Sesame	02	0-98	5.25-6.26
Rapeseed	04	100-100	5.73-6.91
Sunflower	62	18-100	4.43-11.12
Soybean	15	74-98	6.5-11.12
Safflower	06	70-100	6.31-7.90
Groundnut	28	20-100	5.04-8.51
Indian mustard	54	8-100	4.89-8.45

3.2.4.4 Seed Standards

S. No	Crop	Date of Notification	Seed Requirement		Germination %	Moisture %	Physical Purity %	Tentative Season – Months for seed submission for DUS testing	Prescribed size of seed packets (mm)
1	Rice (*Oryza sativa* L.)	1/11/2006	3000	1500	80	11-12%	98	*Kharif* – March-Apr	230x300
2	Bread Wheat (*Triticum aestivum* L.)		3000	1500	95	8-9%	98	*Rabi*- Aug	230x300
3	Maize (*Zea mays*L.)		3000	1500	80(inbred/SCH)90(var/DCH)	8-10%	98	*Kharif*- Mar-AprRabi- Aug	230x300
4	Sorghum (*Sorghum bicolor*(L.) Moench)		3000	1500	80(inbred/SCH) 90(var/DCH)	10-12%	98	*Kharif*- March Rabi- Aug	230x300
5	Pearl Millet (*Pennisetum glaucum* (L.) R.Br.)		1000	500	80(inbred/SCH) 90(var/DCH)	10-12%	98	*Kharif*- March	165x220

6	Chickpea (*Cicer arietinum* L.)		2000(desi) 3000(kabuli)	N.A.	80	8-9%	98	*Rabi*-Aug	230x300
7	Green Gram (*Vigna radiata*(L.) Wilczek)		1000	N.A.	80	8-9%	98	*Kharif* - March	230x300
8	Black Gram (*Vigna mungo*(L.) Hepper)		1000	N.A.	80	8-9%	98	*Kharif*-March	165x220
9	Field Pea (*Pisum sativum* L.)		2000	N.A.	80	8-9%	98	*Rabi*-Aug	230x300
10	Kidney Bean (*Phaseolus vulgaris* L.)		3000	N.A.	80	8-9%	98	June-July	230x300
11	Lentil (*Lens culinaris* Medik)		1000	N.A.	80	8-9%	98	*Rabi*-Aug	230x300
12	Pigonpea (*Cajanus cajan*L.) Millsp.)		2000	1500	80	8-9%	98	*Kharif*-Mar	230x300
13	Cotton (*Gossypium hirsutum* L.)	*31/12/2007*	2000	1000	75	10	98	*Kharif*-North-Feb Peninsular-South-May	230x300
14	Cotton (*G. barbadense* L.)		2000	1000	75	10	98	*Kharif*-North-Feb Peninsular-South-May	
15	Cotton (*G. arboreum* L.)		1500	750	75	10	98		
16	Cotton (*G. herbaceum* L.)		1500	750	75	10	98		
17	Jute (*Corchorus capsularis* L.)		1000	500	85	9	97	Pre-Kharif-early Jan	165x220
18	Jute (*Corchorus olitorius* L.)		1000	500	85	9	97	Pre-Kharif-early Jan	
19	Sugarcane (*Saccharum* L.)	27/07/2009	400 single bud sett						
20	Ginger (*Zingiber officinale* Rosc.)		5000 g (clean and whole sum rhizome of 25-30 g each of 150 pieces)						
21	Turmeric (*Curumma longa*L.)		6 kg (clean and whole sum fresh rhizome with 35-40% moisture content)						

22	Indian Mustard (*Brassica juncea*L. Czern & Coss)	30/04/2010	500	250					
23	Karan rai (Brassica carinata A Braun)		500	250					
24	Rapeseed-Mustard (*Brassica rapa* L.)		500	250	85	8	98	Aug-Sept	165x100
25	Gobhi sarson (*Brassica napus*L.)		500	250					
26	Groundnut (*Arachis hypogaea* L.)		3000(Spanish & Valencia) 8000(kernel) for Virginia bunch and runner type	1500 4000	80	9	98	*Kharif*: May-June Rabi:Aug-Sep	300x450
27	Soybean (*Glycine max* (L.) Merrill)		3000	---	70	9	98	Apr-May	230x300
28	Sunflower (*Helianthus annuus* L.)		3000	2000	70	9	98	July-Aug	230x300
29	Safflower (*Carthamus tinctorius* L.)		3000	1500	80	9	98	June-July	230x300
30	Castor (*Ricinus communis* L.)		6000	2500	70	10	98	April-May	300x450
31	Sesamum (*Sesamum indicum* L.)		500	250	80	9	97	April - May	165x100
32	Linseed (*Linum usitatissimum* L.)		500	250	85	9	98	Jul-Aug	165x100
33	Black pepper (*Piper nigrum* L.)		40 no of rooted cuttings						
34	Small cardamom (*Elettaria cardamomom* Maton)		50 Suckers						
35	Tomato (*Lycopersion lycopersicum* (L.) Karsten ex. Farw.)	02/12/2010	15(open field) 8 (Greenhouse)	same	85	8	98	April-May	165x100
36	Brinjal (*Solanum melongena* L.)		15(open)	15(open)	85	8	98	April-May	165x100

37	Okra (*Abelmoschus esculentus* (L.) Moench.)		200	-					
38	Cauliflower (*Brassica oleracea* L.var. botrytis)		15	15	*	*	*	April-May	165x100
39	Cabbage (*Brassica oleracea* L. var capitata)		15	15	*	*	*	April-May	165x100
40	Potato (*Solanum tuberosum* L.)		300 Fully matured tubers (Tuber size should be 3.5-5.0 cm)						
41	Onion (*Allium cepa* L.)		100 1200 bulblet (multiplier) 50 bulbs(MS lines)	50	70	*	*	As per respective sowing seasons	
42	Garlic (*Allium sativum* L.)		2000 viable clove	--	*	*	*	Aug-Sep	-
43	Rose (*Rosa spp.*(other than *R.damascena*))		9 grafted/budded plants						
44	Chrysanthemum (*Chrysanthemum spp.)*		100 two node terminal rooted cutting taken from mother plant						
45	Mango (*Mangifera indica* L.)		14 grafted plant	-					
46	Duram wheat (*Triticum durum*Desf.)	18/08/2011	3000	1500	95	8-9%	98	Same as wheat	230x300
47	Dicoccum wheat (*Triticum dicoccum* L.)		3000	1500	95	8-9%	98	Same as wheat	230x300
48	Other *Triticum* sp		3000	1500	95	8-9%	98	Same as wheat	230x300
49	Isabgol (*Plantago ovata* Forsk)		250	-	95	8-9%	98		
50	Menthol mint (*Mentha arvensis*L.)		5 Kg suckers (10-15 cm long)						
51	Damask Rose (*Rosa damascena* Mill)		100 Cutting						
52	Periwinkle (*Catharanthus roseus* L.)		10 gm						

53	Brahmi (*Bacopa monnieri* L.Pennell)		500 Cutting (clean and wholesome vegetative parts 10-15 cm long)						
54	Coconut (*Cocos nucifera* L.)		30 number of one year old seedlings raised in polybag containing standard potting mixture						
55	Orchids (*Cymbidium Sw.*)	27/03/2012	20 plants (10 for each centre) with at least two pseudo-bulbs and one back-bulb. Age 3-4 years						
56	Orchids (*Dendrobium Sw.*)		20 plants (10 for each Centre) with at least two shoots. Age 2-3 years						
57	Orchids (*Vanda jones* ex R. Br.)		20 plants, Age 2-3 year						
58	Pomegranate (*Punica granatum* L)	15/04/2014	10 propagules, One year old raised through air layering or rooted stem cutting (multiplied from the same tree) or tissue culture raised plants for each location.						
59	Orchid (*Cattleya Lindl.*)		20 plants two or three year old with at least two shoot						
60	Orchid (*Phalaenopsis Blume*)		20 flowering size plants						
61	Casurina (*Casurina equisetifolia* L.)		50 rooted cutting (at least three month old), measuring minimum 20 cm from collar to apical tip with a well developed root system						
62	Casurina (*Casurina junghuhniana* Miq.)								
63	Bitter gourd (*Momordica charantia* L.)		300 gm or 1500 no	-	80	8	98	April	230x300
64	Bottle gourd (*Lagenaria siceraria* (Mol.) Standl.)		250 gm or 1500 no	-	80	8	98	April	230x300
65	Cucumber (*Cucumis sativus*L.)		50 gm or 1500 no	-	80	8	98	April	230x300
66	Pumpkin (*Cucurbita moschata* Duch. ex Poir.)		200 gm or 1500 no	-	80	8	98	April	230x300
67	Barley (*Hordeum vulgare* L.)		1500	1000	95	8	98	Aug-Sep	230x300
68	Coriander (*Coriandrum sativum* L.)		250	-	80	8-9%	98	Aug-Sep	165x100
69	Fenugreek (*Trigonella foenum graecum*L.)		250	-	80	8-9%	98	Aug-Sep	165x100
70	Almond (*Prunus dulcis* (Mill.) D.A. Webb)		10 grafted or budded plants						
71	Apple (*Malus domestica* Borkh)		6 grafted or budded plants						

72	Pear (*Pyrus communis* L.)		6 grafted or budded plants						
73	Apricot (*Prunus armeniaca* L.)		10 grafted or budded plants						
74	Cherry (*Prunus avium* L.)								
75	Walnut (*Juglans regia* L.)								
76	Grapes (*Vitis spp.*)		12 grafted plants(one yr old) for each location						
77	Indian jujube (Ber) (*Ziziphus mauritiana*Lamk.)		7 plants for each DUS centre(minimum age 3 months)						
78	Eucalyptus (*Eucalyptus camaldulensis* Dehnh.)		60 rooted plant (plant should be in 250 cc root trainer)having minimum age of 6 months						
79	Eucalyptus (*Eucalyptus tereticornis* Sm.)								
80	Tea (*Camellia sinensis L.)*	16/10/ 2014	75 Plants (15-18 inches height), young plant having pencil thick stem with their own root						
81	Tea (*C. assamica*)								
82	Tea (*C. assamica* ssp lasiocalyx.)								
83	Acid Lime (*Citrus aurantifolia* Swingle)		10 plants for each DUS centre. Age should be above six months						
84	Mandarin (*Citrus reticulate* Blanco)								
85	Sweet Orange (*Citrus sinensis* (L.) Osbeck)								
86	Bougainvillea (*Bougainvillea Comm.* Ex Juss.)		10 well rooted and established plant						
87	Banana (*Musa spp.*)		40 uniform tissue cultured plant in one submission per location						
88	Orchid (Oncidium sw.)		20 plants 2-3 year old with at least two pseudo-bulbs/shoots						
89	Canna (*Canna* L.)	21/01/20 15	20 young plants or 20 matured rhizomes						
90	Gladioulus (*Gladioulus* L.)		30 Corms (4 - 4.5 cm in diameter)						
91	Muskmelon (*Cucumis melo*L.)		100 gm seed for open field cultivation	-	80	8	98		

92	Watermelon (*Citrullus Lanatus*(Thunb.) Mansf.)		150 gm seed for open field cultivation	-	80	8	98		
93	Jasmine (*Jasminum auriculatum*. L.)	02/07/2015	20 rooted plant						
94	Tuberose (*Polianthes tuberosa* L)		75 Bulbs of more than 2 cm (diameter at broadest point) weighing 25-30 gm						
95	Papaya (*Carica papaya* L.)		20 gm for gynodioecious varieties & 40 gm for dioecious varieties in both season	-	60	7% for ambiant storage	98% for varieties & 90% for Hybrids		
96	China Aster (*Callistephus chinensis* (L.) Nees.)		2 gm each in two packets	-	60	6-9%	98		
97	Peach (*Prunus persica* L.Batsch.)		10 grafted or budded plants						
98	Japanese Plum (*Prunus salicina*L.)		11 grafted or budded plants						
99	Strawberry (*Fragaria x ananasan* Duch.)		120 runners or plant propugules or seedling plants (tissue cultured plant hardned at 4-5 leaf Stage)						
100	Chilli, Bell Pepper and Paprika (*Capsicum annuum* L.)		15 gm for Open polinated crop & 10 gm for Hybrid and Parental line	-	85	8	98		
101	Finger Millet (*Eleusine coracana* (L.) Gaertn.)		250 gm & 10 Panicles	-					
102	Foxtail Millet (*Setaria italic*		250 gm & 10	-					

	(L.) Beauv)		Panicles						
103	Vegetable Amaranth (*Amaranthus tricolor* L.)	19/04/2016	150 g (in one submission only)		80	<8%	98		
104	Ridge gourd (*Luffa acutangula* (L.) Roxb.)		250g or 1500 seeds (in one submission only)		80	<8%	98		
105	Spinach beet (*Beta vulgaris* var. bengalensis Roxb.)		250 g (in one submission only)		80	<8%	98		
106	Carnation (*Dianthus caryophyllus* L.)		150 rooted cuttings						
107	Orchid (*Paphiopedilum* Pfitz.)		10 plants for each centres						
108	Noni (*Morinda citrifolia* L.)	13/07/2016	10 grafted or budded plants for each location						
109	Bael (*Aegle marmelos* (L.) Correa)		5 Plants for each centres						
110	Jamun/Black plum (*Syzygium cumini* (L.) Skeels.)		07 grafts for each location						
111	Nutmeg (*Myristica fragrans* Houtt.)		10 grafted or budded plants for each location						
112	Jasmine/Mogra (*Jasminum sambac* L.)		20 rooted plants for each location						
113	Custard apple / Sugar apple (*Annona squamosa* L.)		8 grafts						
114	Kalmegh /King of Bitters (*Andrographis paniculata* (Burm.f.) Wall. ex Nees)		30 gm		95%	8-9%	98		
115	Neem (*Azadirachta indica* A. Juss.)	12/05/2017	40 clonally rooted plants with 60 cm height						

116	Karanj (*Pongamia pinnata* (L.) Pierre.)		40 clonally rooted plants with 60 cm height						
117	Indian Gooseberry (*Emblica officinalis* Gaertn.)		03-04 months old plants						
118	Betelvine (*Piper betle* L.)		Rooted cutting terminal shoots shall be 3 months old with 25 cm height						
119	Marigold (Tagetes spp. L)		10 gm seed or 200 Nos rooted cuttings		80%	Not more than 8%	98%		
120	Guava (*Psidium guajava* L.)		10 grafts/ air layers for each locations						
121	Litchi (*Litchi chinensis* Sonn.)		7 air layers for each location						
122	Deodar (*Cedrus deodara*) (Roxb.) G. Don		5 trees						
123	Chir pine (*Pinus roxburghii*) Sargent		5 trees						
124	Mulberry (*Morus* spp.)		50 stem cuttings						
125	Jasmine (*Jasminum multiflorum* L.)		20 numbers of 6 months old, fully rooted plants						
126	Buckwheat (*Fagopyrum esculentum*)		500 gram		80%	upto 10%	98%		
127	Buckwheat (*Fagopyrum tataricum*)		500 gram		80%		98%		
128	Grain Amaranth (*Amaranthus hypocondricus*)		50 gram		80%		98%		
129	Grain Amaranth (*A. cruentus*)		50 gram		80%		98%		
130	Grain Amaranth (*A caudatus*)		50 gram		80%		98%		
131	Grain Amaranth (*A. edulis*)		50 gram		80%		98%		
132	Faba bean (*Vicia faba* L. var. major Harz)		150 gram		70%	upto 9%	98%		
133	Elephant Foot Yam (*Amorphophallus Paeoniffolius*)		36 tubers 200-400g each						

134	Taro (*Colocasia esculenta* var. esculenta, *Colocasia esculenta* var. antiquorum, *Colocasia esculenta* var. stoloniferum)		36 tubers 30-40g each						
135	Giant Swamp Taro (*Cyrtosperma chamissonis*/ *C. merkusii*)		36 tubers 30-40g each						
136	Jatropha (*Jatropha curcas* L.)		60 rooted plants with 60 cm height, in June-July						
137	Barnyard millet (*Echinocloa frumentaceae* (Roxb.) Link)		250 grams seed with 10 panicles		80%	12%	97%	Kharif March-April	165x100
138	Kodo millet (*Paspalum scorbiculatum* L.)		500 grams seed with 10 panicles						
139	Little millet (*Panicum sumatrense* Roth. Ex Roemer And Schultes)		150 grams seed with 10 panicles						
140	Proso millet (*Panicum miliaceum* L.)		200 grams seed with 10 panicles						
141	Cashew (*Anacardium occidentale* L.)	23/10/2017	8 grafted plants						
142	Arecanut (*Areca catechu* L.)		10 numbers of one year-old seedlings						
143	Chironji (*Buchanania lanzan* Sperng.)	09/01/2018	09 grafts for each location						
144	Tamarind (*Tamarindus indica* L.)		09 grafts for each location 150 vine cuttings (each one with a length of 30cm with 5 to 8 buds) for both centres						
145	Sweet potato (*Ipomoea batatas* (L.) Lam.)								
146	Cassava (*Manihot esculenta* Crantz.)		100 cuttings for each centre, length 20 cm with minimum 5 to 8 viable buds						

147	Poplar (*Populus deltoides* L.)		120 cuttings from 1 year old plants

3.3 National Review Meeting of DUS Centers and Projects

12th DUS Review meeting was conducted at ICAR-IISR, Lucknow during Jan 15-17, 2018. Appox 80-100 Scientists/Nodal/Co Nodal Officers, Research Scholars, Representatives from Private Seed Industry participated. Technical programme was divided into 9 sessions and one session was dedicated to discuss Administrative and Financial matters. Session wise recommendations are placed below:

Day 1: Jan 15, 2018

- Authority shall ensure that seeds received from farmers' are free of diseases and sufficient no of viable seeds are sent to DUS centres
- All Centers shall characterise farmers' varieties s in the 1st season in a limited trial plot and conduct the DUS testing in the 2nd season with the reference varieties identified from 1st season's data
- Varietal/Species level mixtures in farmers' varieties shall be discarded unless any pre-dominant types can be identified, however, no selection is to be done
- FVs in Soybean from NE may be tested at NE AICRP Centre due to thermo-sensitiveness, proper expression of characters are not possible under sub tropical conditions
- Authority shall review the progress in Lathyrus project at UAS, Dharwad as it is not a normal Lathyrus grown area
- Existing DUS guideline in Maize need amendments and TF to be constituted to initiate the work
- Centres shall always utilise RHS colour chart/give the chart no for record of Colour characters

Day 2: Jan 16, 2018

- In case of Cotton, either Bio assay/Elisa can confirm the gene expression, DUS test fee may be released, revision of DUS guideline to be taken up
- Authority shall constitute Monitoring team at the beginning of each crop season with suitable experts conversant with DUS procedure
- Database of varieties undergone maintenance breeding in different DUS centres shall be sent to Authority
- Several FVs in Sugarcane are from *Officinarum* sp and may be tested at South Indian conditions as suitable reference varieties are not available with the IISR, Lucknow centre(sub-tropical condition)
- Authority may constitute a TF to review the methodology and working guideline for On-site DUS testing
- In case of Jackfruit, it is suggested that DUS guideline should be developed with the help of HARP/NBPGR Ranchi centre and CISH Malda centre can be identified for Eastern Region so that diversity across India is captured
- Core group of Experts need to be constituted for documentation of landraces, variability existing in all parts of India in species endemic to India
- In many fruit crops, standard Root stocks are to be used by applicants as per DUS guideline(Action: All DUS Centres as Applicant and PPV&FRA as Examiners of Applications)
- It is advised that FGBs shall stick to mandated activities in specified crop species; can mentor farmers to submit applications for varieties in their specified region
- Male sterility characters may be included in certain guidelines, e.g., Chilli and Authority identify mechanisms to include biotic/abiotic stress resistance traits and develop guidelines for use of molecular markers

- Several DUS Guidelines like Sugarcane, Pulses, Tomato, Brinjal, Okra may be revised by appointing suitable TF
- DUS centres shall record data as per the format, ensure data recording are as per guideline, ensure authenticity of data sent to Authority
- Authority shall develop/update IINDUS database immediately, start on e-governance and on line filling; meeting on EDV shall be conducted before end of Feb 2018
- Authority will conduct special meetings at IIVR to discuss issues related for Vegetable crops, invite some other centers for participation, understanding of DUS test procedure and knowledge sharing
- Concerns were expressed from Seed Industry about delay in issuance of Registration certificates even after completion of mandatory 90 days in PVJ publication of Passport data; high renewal fee; fast-track EDV applications and sharing of reference variety data: it was informed that issue of high renewal fee has been discussed in Authority meeting and final decisions are awaited
- Authority has taken a decision to count 90 days for filing pre-grant objection from date of online publication of PVJ each month
- Applicants shall disclose source of parental material and work out modalities so that Benefit sharing provisions can be realized
- Authority shall finalise on Agronomic & commercial attributes of major crop species and notify in the PVJ

Day 3, Jan 17, 2018

- BBSKKV shall include both the Garcinia species and data shall be generated with the help of IISR, Calicut/NBPGR-Thrissur who has already developed minimal descriptors
- Characterisation of useful traits in important varieties of crop species like Sea Buckthorn shall add value in the DUS guideline
- No centre shall disclose the name/Ack no, performance, DUS test details and registrability of any candidate variety undergone DUS testing during any public meeting/workshop without expressed permission from PPV&FRA
- Centres need to sign an MoU (Institute wise) and send to PPV&FRA by 1st week of Feb, 2018 as per the agreement of PPV&FRA with DAC&FW, Govt of India
- Authority will convene a meeting with all centres developing guidelines in last 2-3 years to address several issues: timeline for submission of draft, suggest TF constitution, complete any pending matters like sketches, database; development and follow standard procedure to assign notes in trait expression; identification of uniformity/stability level in DUS testing

  Certain centres/project did not represent and discuss the technical progress despite scheduled slots which has been considered seriously and centers are requested that written submission on AUC/SOEs; technical progress shall be submitted to PPV&FRA immediately
- SKAUS&T is requested to inform about other species(Rice, Rajma, Vegetables) where FVs can be collected and documented
- IFGTB is requested to submit SOEs and coordinate with NAU, Navsari to develop guideline for one Eucalyptus sp applied by JK Paper
- For DUS project at Nagaland University(Ashgourd, Chow Chow, Snake Gourd, IVY Gourd), one additional centre should be included in consultation with Director, IIVR
- All centres shall forward details of cheques & funds received from the Authority since 2012 onwards

CHAPTER 4: DEVELOPMENT OF DUS TEST GUIDELINES AND ESTABLISHMENT OF GERMPLASM BANKS

4. DEVELOPMENT OF DUS TEST GUIDELINES

The Authority has established number of Task Force committees to finalize the DUS testing guidelines to enlarge the registration basket of the Authority. The crops covered are Poplar, Willow Salix, Chironji and Tamarind, Drumstick, Greater Yam & Yam Bean, Tectona, Melia, Bamboo, Date Palm and Oat. Brief information on the meetings held is given hereunder:

- Meeting of the Task Force for two crops i.e. **Chironji (*Buchanania lanzan Spreng*.) and Tamarind (*Tamarindus indica L*.)** to finalize DUS guidelines at PPV&FRA Office on 28th April, 2017.
- Task force meeting for **Poplar *(Populus deltoides L.)*** to finalize DUS test guidelines at PPV&FR Authority office on 10th August, 2017.
- Task force meeting for **Willow salix *(Salix species)***to finalize DUS test guidelines at PPV&FR Authority office on 11th August, 2017.
- Task force meeting for bamboo, two crop species i.e. **Bholuka bah (*Bambusa balcooa*) and Kako Bah (*Dendrocalamus hamiltonii)***to finalize DUS test guidelines at PPV&FR Authority office on 27th September, 2017.
- Meeting to finalise DUS Test guideline of **Date Palm** was held in the committee room of PPV&FRA office, New Delhi on Oct 24th, 2017 under the chairmanship of Dr. S.N. Pandey, Ex-ADG (Hort.), ICAR, New Delhi
- Task force meeting for **Drumstick (*Moringa oleifera lam*)** to finalize DUS test guidelines at PPV&FR Authority office on 06th February, 2018.
- Task Force meeting to finalise **Oat (*Avena sativa* L.)** DUS Test guideline was held at PPV&FRA Office on Feb 07, 2018 under the Chairmanship of Dr Bhagmal, Fmr Director, ICAR-IGFRI
- Task force meeting for two crop species **Teak (*Tectona grandis*)and Melia (*Melia dubia*)**to finalize DUS test guidelines at PPV&FR Authority office on dated 08th March, 2018.
- Task force meeting for two crop species **Yam bean (*Pachyrhizus erosus*) and Greater Yam (*Disoscorea alata*)** to finalize DUS test guidelines at PPV&FR Authority office on 20th March, 2018.

4.1 Revision of DUS Test Guideline for Sorghum and Pearl Millet

The PPV&FR Authority, New Delhi earlier constituted a Task Force under the Chairmanship of Dr. C L Laxmipathi Gowda, Former Deputy Director General (Research), ICRISAT to review and harmonise the existing DUS testing guidelines in sorghum and pearl millet. A meeting was organised at ICAR-IIMR, Hyderabad on 7th Sept, 2017 to review the amendments made in the existing guidelines based on the discussions held during previous meetings and to finalise the revised guidelines. It was attended by Dr Vilas Tonapi, Director, ICAR-IIMR, Hyderabad; Dr Tara Satyavathi, PC(AICPMIP)-ICAR, Jodhpur; Dr T K Nagarathna, Registrar & Sh Dipal Roy Choudhury, Joint Registrar, PPV&FRA; Scientists from IIMR; PC Unit and representatives from various seed companies etc

Dr. BS Rajpurohit (Nodal Officer, DUS testing, Pearl millet) made a detailed presentation on the modifications proposed in DUS test guidelines in Pearl millet. He presented status of DUS testing in Pearl Millet during 2008-2016, manner of DUS testing, the descriptor traits for DUS testing as per existing guidelines and proposed amendments based on the previous discussions held during the first meeting on 29th July 2015 at IIOR, Hyderabad and second

meeting on 1st October 2015 at PC Unit, AICRP on Pearl Millet, Jodhpur.

Dr. Hariprasanna K. (Nodal Officer, IIMR, DUS testing, Sorghum) made a detailed presentation on revised DUS guidelines of Sorghum based on the agreed test traits in the earlier meeting held on 23rd September 2015 at IIMR, Hyderabad. He also informed the house that the amended guideline was presented before the sorghum researchers of AICRP on Sorghum for suggestions and improvement during the Annual Group Meeting held at MPUA&T, Udaipur during 24-26 April, 2016 in the presence of Dr. RC Agrawal, Registrar General, PPV&FRA. The existing guideline includes 33 characteristics (comprises 15 essential, 9 descriptive and 11 other traits) of which 7 are VS, 14 are VG, 11 are MS and one trait assessed as MG. In the revised guideline, there will be 32 characteristics including two new traits and 2 additional characteristics depending on the type of sorghum.

4.2 Task Force on DUS test guideline for Date palm

The meeting was held in the committee room of PPV&FRA office, New Delhi on Oct 24, 2017 under the chairmanship of Dr. S.N. Pandey, Ex-ADG (Hort.), ICAR, New Delhi, to discuss and finalize DUS testing guidelines on date palm. The meeting was attended by Registrar(s), Joint Registrar(s), Deputy Registrar and officers from PPV&FRA, New Delhi and Principal Scientists of ICAR-CIAH, Bikaner.

After presentation, suggestions were given for incorporation in draft and it was suggested that after incorporating the suggestions made during Task force meeting that final DUS test guidelines draft shall be submitted to PPV&FRA, New Delhi. Further, it was suggested that ICAR-CIAH, Bikaner will act as Nodal centre for DUS testing on Date palm crop.

4.3 Project Appraisal Committee

Sl. No.	Title of the Project	PI Name & Address	Duration	Amounts	Date of starting	Task Force
1	DUS characterization using diverse germplasm, released varieties and land races of Cowpea	Dr. S. K. Deshpande, Professor and Head Dept. of Genetics & Plant Breeding, College of Agriculture, UAS Dharwad- 580005	2 years	18 lakhs	FY 2016-17 (28/02/2017)	Not constituted
2	Validation of DUS testing guidelines for Cucurbits I.E Chow-Chow, ash Gorud, Snake Gourd & ivy Gourd.	Dr. S.P Kanaujia, Associate Professor, Department of Horticulture, SASRD Campus, Medziphema, Nagaland University.	2 years	18 lakhs	FY 2016-17 (01/03/2017)	Not constituted
3	Development of DUS Testing Guidelines For Broccoli	Dr. Pritam Kalia, Head, Division of Vegetable Science, Indian Agricultural Research Institute, IARI, Pusa, New Delhi – 110012	2 years	18 lakhs	FY 2015-16 (31/03/2016)	Not constituted
4	Development of guideline for the conduct of test for DUS in Horse gram, Mothbean, Clusterbean & Lathyrus	Dr. P.K. Roy Senior Scientist (Plant Breeding) & PI Central Institute of Arid Zone Research Institute (CAZRI) Jodhpur- 342003, Rajasthan	3 years	13 lakhs	FY 2014-15 (11/06/2014)	Not constituted

5	Development of guideline for the conduct of test for DUS in Horse gram, Moth bean, Cluster bean & Niger	Dr. Vijaykumar A.G Scientist (Plant Breeding) AICRP on MuLLaRP Main Agricultural Research Station,UAS, Dharwad- 580005, Karnataka	3 years	29.94 lakhs	FY 2014-15 (11/06/2014)	Not constituted
6	Development of descriptors for promoting DUS guideline for Saffron indigenous to temperate regions of Jammu & Kashmir	Dr. S. A. Dar, Associate Professor & I/C Saffron Research Station Sher-e-Kashmir University of Agriculture Science & Technology of Kashmir	2 years	18 lakhs	FY 2017-18 (15/02/2018)	Not constituted
7	Validation and descriptor of DUS testing guideline under Indian Condition for Olive.	Dr. Shiv Lal, (Scientist, Senior Scale) Horticulture (Fruit Science) Division of Fruit Science, ICAR-Central Institute of Temperate Horticulture,	3 years	27 lakhs	FY 2017-18 (21/03/2018)	Not constituted

4.4 On-going Projects

4.4.1 ICAR-Central Plantation Crops Research Institute, Regional Station, Vittal

Milestone of 2017-18

- Recording of DUS characters from experimental plots comprising of distinct genotypes of arecanut.
- Collection of data of all the varieties of arecanut for the preparation of database.

4.4.1.1 Achievements:

During the year 2017-18, a total of 20 distinct morphological/reproductive/nut characteristics *viz*., crown shape, plant height, crown length, leaf length, leaf breadth, leaf sheath length, leaf sheath breadth, number of inflorescences, spadix length and breadth, fresh fruit weight, fruit length, fruit breadth, dry fruit weight, kernel length, kernel breadth, dry kernel weight, dry kernel weight/palm, husk thickness, dry husk weight were recorded in the adult palms of 28 varieties/ germplasm of arecanut including the reference/example varieties for the development of database. The estimation of special characters, *viz.,* arecoline content and tannins (total polyphenols) has been initiated for reference/example cultivars/varieties. Photographs of the different varieties/cultivars of arecanutat the nodal centre as well as collaborating centres have been documented for the preparation of database. At nodal centre, field gene bank of DUS example/reference varieties have been established.

Target 2018-19

1. Recording of DUS characters in adult palms of distinct genotypes of arecanut.
2. Collection and compilation of data and finalization of database.

4.4.2 ICAR-NRC Cashew, Puttur

Objectives

i. Evaluation and cataloguing of cashew varieties
ii. Identification of distinct types and conservation in Field Gene Bank
iii. Developing DUS test guidelines for cashew
iv. Establishment of reference variety block

4.4.2.1 Work done during the period

- Forty two released varieties have been characterized for 68 characters and they are maintained in the National Cashew Field Gene Bank
- 1884 images of different plant parts of 164 germplasm accessions has been uploaded on to Decision Support System for cashew germplasm management
- The general procedure for DUS testing in cashew is finalized
- The grafts of 30 reference varieties has been prepared and established in the field

Work envisaged during the April 2018 to March 2019:

1. Maintenance of reference variety block
2. Efforts for registration of promising varieties (both extant and new) with PPV-FRA

List of reference varieties:

NRC 116	NRC-140	NRC 183	NRC 190
NRC 406	NRC-492	NRCC Sel-1	NRCC Sel-2
Bhaskara	Ullal-1	Ullal-2	Ullal-3
Vengurla-1	Vengula-2	Vengurla-3	Vengurla-4
Vengurla-7	Madakkathara-1	Madakkathara-2	VRI-1
VRI-2	VRI-3	BPP-4	Priyanka
Taliparamba-1	K-22-1	VTH 30/4	VTH 174
VTH 30/2	Purple mutant		

REFERENCE VARIETY BLOCK

4.4.3 Central Coffee Research Institute, Chikkamagalore, Karnataka

CCRI is working on "Development of DUS guidelines and Establishment of DUS centre for Coffee (*Coffea arabica* and *Coffea canephora*)".

4.4.3.1 Brief progress of the project in 2017-18:

To develop DUS guidelines for coffee, descriptor data in respect of popular Arabica selections have been recorded on various characters *viz*., vegetative, floral, fruit and bean parameters from different agro-climatic regions. The descriptor data generated for various CCRI selections has been analyzed taking into account the DUS guidelines described by UPOV for coffee as basis. Analysis revealed that although the phenotypic diversity among the CCRI selections of Arabica is low, distinct variation has been observed with respect to few characters viz., Plant height, Young leaf colour, Leaf shape, Leaf width, Corolla tube length, Stigma length, Harvest duration (Blossom to Fruit ripening), Fruit colour, Fruit (Berry) shape (Matured-un-ripened) and Seed - 'A' grade (%) stand on 6.6 mm.

Based on these distinctive characters, preliminary grouping of the Arabica selections has been defined**.** The variability among the groups with respect to short listed characters has been observed to be stable across the locations. Nevertheless, considering the unique way of cultivating coffee under shade canopy in India, the relation between shade and expression of characters is critical for fixing DUS criteria. Thus, out of the 10 distinctive characters used for grouping, seven characters viz., Plant height, Young leaf colour, Leaf shape, Corolla tube length, Stigma length, Fruit (Berry) shape (Matured-un-ripened) and Seed - 'A' grade (%) are less influenced by shade indicating that these are the prospective characters for fixing DUS criteria.
In order to establish the reference block, seedlings of all the coffee selections have been raised and being maintained in the secondary nursery. Land preparation has been completed in the identified block, for planting during the forthcoming season (August-September 2018).


Bronze


Light bronze


Green

Variability in young leaf colour among different Arabica selections


Red


Orange Red


Yellow

Variability for fruit colour in coffee

4.4.4 ICAR-DMAPR, Anand

4.4.4.1 Maintenance of reference varieties of Kalmegh (*Andrographis paniculata*)

The guidelines for Kalmegh DUS testing were notified by the authority and published in Plant variety Journal (Vol. 10, No. 01) in January 15, 2016. The major characteristics finalized were leaf colour (light green, green or dark green), leaf lamina shape (lanceolate, elliptical, ovate/ovate lanceolate/elliptical); leaf lamina length (short,

long), leaf lamina breadth (narrow, medium, broad); stem shoot apex(tender leaf grouped at apex, tender leaf not grouped at apex), leaf lamina (inwardly closed or outwardly curved); leaf lamina surface (smooth, wrinkled); stem branching pattern (erect, spreading); anthesis pattern (early, medium and late); spikelet type (flower buds closely arranged or distantly arranged); plant main axis growth habit (erect or prostrate); stem internode length (short, long); plant canopy shape (columnar, bushy/globular, pyramidal); plant height (short, medium, tall); leaf andrographolide content (low, medium, high). Accordingly 20 example varieties identified were maintained during the kharif 2017. During 2016, a new plant type DMAPR AP 35-1 was identified from DMAPR AP 35. Up to vegetative stage, both DMAPR AP 35 and the new morphotype look similar and at reproductive stage the new plant type attains a feathery canopy (mayur= peacock canopy). The new plant type has very late and shy flowering also. Anthesis (first flower opening in a season) occurs at 110-120 days after transplanting. The morphotype was first identified in 2016 and selfed seeds collected and sown during 2017 also showed the same morphotype.

4.4.4.2 Maintenance of reference varieties of Isabgol (*Plantago ovata*)

During the year, in November last week, eleven reference varieties of Isabgol (Plantago ovata) i.e. DMAPR PO1, DMAPR PO2, DMAPR PO3, DMAPR PO4, DMAPR PO5, DMAPR PO6, DMAPR PO7, DMAPR PO8, DMAPR PO9, DMAPR PO10 and DMAPR PO11 of Isabgol were sown for maintenance. DMAPR 35-1, a new morphotype has been identified. The new plant type has feathery canopy (mayur= peacock canopy) with very late and shy flowering behaviour. Anthesis (first flower opening in a season) occurs at 110-120 days after transplanting.

4.4.5 ICAR-CTCRI, Trivandrum

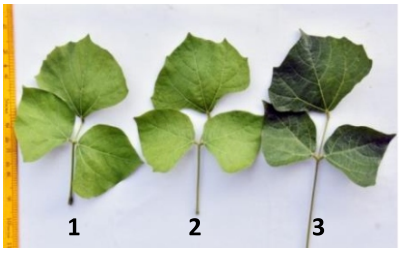
Centre is managing a project for development of DUS guideline for Greater Yam*(Dioscorea alata)* **and Yam bean** (Pachyrhizus *erosus)***.** The project was initiated with the objective to identify distinct, uniform and stable characteristics and standardise the DUS testing guidelines for yam bean and greater yam. A draft guideline of greater yam was prepared with 30 characteristics. It included six grouping traits *viz.* leaf shape petiole colour, tuber: shape, tuber: colour of cortex, tuber: colour of flesh and tuber length. The field gene bank of 30 reference varieties of greater yam was conserved for conducting DUS testing trials in future.

Leaf shape characters:

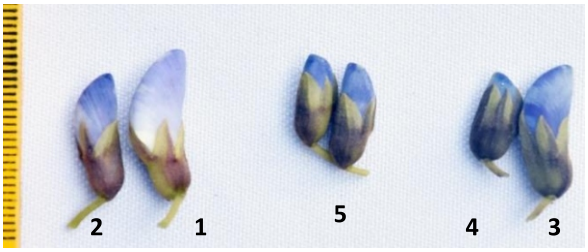
1. Cordate
2. Cordate long
3. Cordate broad
4. Sagitate long
5. Sagitate broad

Variation in tuber shape among reference varieties of greater yam

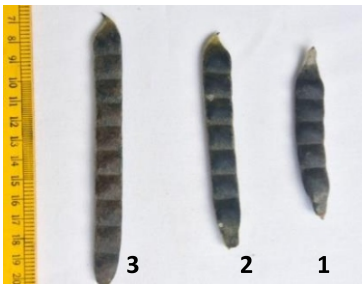
In the case of yam bean, the draft of DUS guidelines was prepared with various grouping characters *viz*., leaf shape: terminal leaf (no of teeth) flower characters pod length tuber shape and seed shape.



Trifoliate teethed leaf, Less than 5 teeth (1), 5 - 7 teeth (2), More than 7 teeth (3)



Flower pigmentation (sepal and petal colour), Light brown sepal with light purple petal (1), brown sepal with purple petal (2), light brownish purple sepal with purple petal (3), deep brownish purple sepal with purple petal (4), deep brownish purple sepal with deep purple petal (5)



Pod length, low (1), medium (2), high (3)

Tuber shape, fusiform (1), round to fusiform (2), round with deep lobing (3)

Seed shape, square inure (1), flattened (2)

4.4.6 ICAR-IARI, New Delhi

Divn of Vegetable Sc, IARI is developing DUS test guidelines for radish and carrot and the draft guidelines were submitted to PPV&FRA, New Delhi which was discussed in the Task force meeting held on 23-12-2017. The suggestions of the Task force were incorporated and final guidelines were submitted to the Authority. As per the directions of the PPV&FRA, the project duration was extended for a further period of 2 years i.e up to March, 2020 with IARI Regional Centre, Katrain being added as Co-nodal centre and with additional work to be done in the project.

4.4.7 ICAR-CTRI, Rajamundry

CTRI is working on "Development of Distinctiveness Uniformity and Stability (DUS) Guidelines for FCV and Bidi Tobacco".

Brief progress of the project in 2017-18:

The project work was initiated during the current season, 2017-18. 31 FCV and 15 bidi varieties; 265 FCV and 208 bidi germplasm lines were planted at Katheru Farm for identifying the distinctive characteristics specific to tobacco. A draft table of characteristics (53 No.) prepared and 45 characters being recorded in 31 FCV and 15 bidi varieties for DUS characterization of FCV and Bidi tobacco varieties. Further, 29 characters

identified and being recorded in around 1399 germplasm lines. Digital photographs of FCV and bidi varieties recorded. Collection of data is in progress.

FCV VARIETIES RAISED UNDER FIELD CONDITION

CTRI Special (MR)

Hema

VT 1158

Thrupthi

BIDI VARIETIES RAISED UNDER FIELD CONDITION

Anand 145

GT7

VARIABILITY OBSERVED FOR LEAF AND FLOWER CHARACTERS

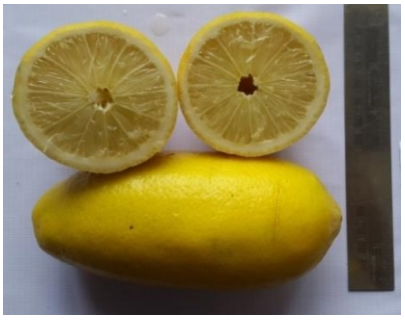
4.4.8 Division of Horticulture, ICAR Research Complex for NEH Region, Meghalaya

Formulation and validation of DUS testing guidelines for lemon (*Citrus limon L. Burm*.) and Pummelo (*Citrus grandis*) is being under implementation at ICAR NEH centre, which is a co nodal centre.

4.4.8.1 Progress of the project:

On the basis of vegetative characters, the lemon varieties viz., Assam lemon, Jaintia lemon and Elachi lemon were characterized which showed significant variations. Jaintia lemon showed upright growth habit while Assam lemon and Elachi lemon showed drooping. All the varieties had simple leaf with dentate leaf margin while leaf shape varies from elliptic (Assam and Elachi lemon) to ovate (Jaintia lemon). Leaf blade length was medium (6-10 cm) in Jaintia and Elachi lemon while long (>10cm) in Assam lemon. In all varieties, leaf blade width was medium (4-7 cm) and spines were present (>10cm per 30 cm shoot length) on the shoot. Petiole was found absent in Assam lemon but present in Jaintia and Elachi lemon.In all varieties flowers were complete and hermaphrodite and had stamens more than 4/petal. Fruit shape varies from spheroid (*Jaintia lemon*) to ellipsoid (Assam and Elachi lemon). Shape of fruit base varied from concave collared (Assam lemon) to truncate (Jaintia and Elachi lemon). Fruit apex was found mammiform with smooth skin surface in all the varieties. Fruit length was found medium (5-7 cm) in Elachi and Jaintia lemon while long (>10cm) in Assam lemon. Fruit diameter was found medium (5-7 cm), large fruit weight (>80 g) with low TSS (<7 0B)in all the varieties. Reference varieties/lines were propagated by vegetative means and planted in institute field germplasm bank.

Jaintia lemon



Assam lemon

Elachi lemon

Fig --. Variation in fruits of different lemon varieties

4.4.9 Department of Plant Biotechnology, UAS, GKVK, Bengaluru

Development of Distinctness Uniformity and Stability (DUS) guidelines for Jackfruit and registration of farmers' varieties in India are being implemented at UAS, GKVK

The centre collected following varieties:

Sl. No.	Name of varieties	Source of planting material	Variety description
1.	**Renukaiah – 6** 	Sannappanahall, Doddaballapur Tq, Bengaluru Rural district	The variety is excellent an average fruit weight of 3-5 kg, with a bulb yield of 10 per Kg fruit weight and the per cent recovery is 0.40%. TSS 19-21^0 Brix. The tree bears an average of 150 fruits per year.
2.	**Renukaiah-7** 		The variety is excellent an average fruit weight of 5-10 kg, with a bulb yield of 10 per Kg fruit weight and the per cent recovery is 0.45%. TSS 27^0 Brix. The tree bears an average of 100-150 fruits per year.
3.	**KK-1 (Red)** 	Rampura, doddaballapura Tq, Bengaluru Rural district	The variety is excellent an average fruit weight of 10-13 kg, with a bulb yield of 15 per Kg fruit weight and the per cent recovery is 0.47%. TSS 17-18^{0}Brix. The tree bears an average of 100-150 fruits per year.
4.	**KK-2** 		The variety is excellent an average fruit weight of 8-11 kg, with a bulb yield of11 per Kg fruit weight and the per cent recovery is 0.54%. TSS 15-23^0 Brix.

5.	**KK-6** 		The variety is excellent an average fruit weight of 9-12 kg, with a bulb yield of16 per Kg fruit weight and the per cent recovery is 0.41 %. TSS 21.3^0 Brix.
6.	**KK-9** 		The variety is excellent an average fruit weight of 6-9 kg, with a bulb yield of 17 per Kg fruit weight and the per cent recovery is 0.39 %. TSS18^0 Brix.
7.	**HANUMAIAH** 	Chikkabelavengala, in DoddaballapuraTq, Bengaluru Rural district	The variety is excellent an average fruit weight of 5-7 kg, with a bulb yield of 20 per Kg fruit weight and the per cent recovery is 0.40%. TSS 20-26^0 Brix.

4.4.10 ICAR- Central Coastal Agricultural Research Institute, Old Goa

Centre is involved in the development of descriptors for Kokum (Garcinia indica). In the present study of this centre, variation in fruiting season and fruit characters were estimated in 112 trees of *Garcinia indica*from 09 different populations geographically distributed in Goa by assessing the phenotypical variations of fruit, during April to June, 2017. Fruiting season varied from early to mid and mid to late season, *i.e.,* from February to June. External fruit colour varied from pink to red, fruit clustering habit solitary and occasionally in clusters, fruit shape oblate to spheroid, fruit surface smooth, fruit apex shape blunt to pointed, fruit length 22.51- 42.80 mm, fruit diameter 28.12 – 50.21 mm, fruit weight 9.21 – 59.33 g, rind thickness 1.12 – 5.16 mm, number of seeds per fruit 2 – 8, pulp attachment to fruit rind loose to tight, internal rind and pulp colour white to dark red. Besides, the digital colour values were also recorded and it varies as per the external colour.Later on, in June-July 2017, Centre was involved in clonal propagation of promising trees identified from the previous project and also the running DUS project. After planting in germplasm bank, the remaining grafts are being maintained in the nursery currently. Thereby, promising accessions are being ex-situ conserved and evaluated at institute.

Dark maroon fruits

Red coloured fruits

Light red fruits

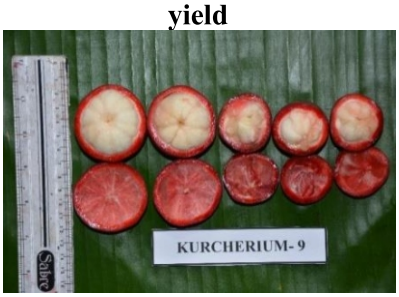
Maroon fruits; early type

Mid season; sweet type

Mid season; promising type for yield

Small, maroon fruits

Orange coloured pear shaped fruit



Spherical fruits, mid season bearing, promising accession

4.4.11 Institute of Forest Genetics and Tree Breeding, Coimbatore

Brief Objectives:

- To study the tree morphological characters of different populations/ clones for identification of Distinct and unique characters in teak and Melia
- To identify the stable characters across different locations/ years in teak and Melia.
- To establish germplasm bank for teak and Melia with different population/ clones as reference collection.

Major Achievements (Quantitative and Qualitative)

Teak

The project aims at developing DUS test procedures for Teak and *Melia dubia*. For developing DUS test guidelines for teak, visits were made to SPA at Sankarankode and PPP at Conolly, Nilambur are few of the oldest planted teak plots, Seed Production Area (SPA) and Permanent Preservation Plot (PPP) in Kerala. Observations on various tree characters were recorded. In Tamil Nadu, visited teak plantation of Chengampally Sempatty, Sathiyamangalam, Karaikal, Tanjore, Anaikkatti, Krishnakiri, Pallagoundanpalayam, Karur, Peramanallur Kanuvai, Chinnathadagam, Mettupalayam, Thudiyalur, Pannimadai, Periyathadagam and Anaikatti.

Also visited the natural and planted teak plantations in Cherupuzha, Nellikutha, and Parambikulam. During the visit the Clonal Seed Orchard of teak at Top Slip, Tamil Nadu and Walayar, Kerala. Study on the natural and plantations of teak showed that the variability within a plantation was found to be low with respect to all the leaf, bark flower and fruit characters. Some amount of variability was observed in the natural populations. The tree stem form, leaf, branching habits and reproductive characters were found to be discriminating characters. Draft DUS guideline was prepared and presented before the Task Force on Teak during the meeting conducted at Delhi.

Obtus

Cuneate

Truncat

Attenuat

Decurre

Melia dubia

In case of *Melia dubia*, variation in morphological characters of Tree habit, Crown Appearance, Clear bole height, Branching pattern, Branching angle, Branch thickness, Bark colour, Bark peeling, Leaf shape, Leaf base, Leaf arrangement, Leaf margin, Leaf petiole length, Flowers, Fruits and Endocarpwere studied in Panampally, Karur, Nellore, Tirupathi, Thithimathi, Hoskote, Annur and Chennai for developing DUS descriptors and DUS test guidelines. Studies were also conducted in clonal trials for quantifying the uniformity and stability of the selected morphological traits. The final DUS characters were presented before the Task Force on Melia dubia on the meeting conducted at Delhi. The suggestions of the committee are being carried out.

Variation in leaf tip:

Acute

Acuminate

Acuminate elongated

4.4.12 YSPUHF, Solan

Dept of Tree Improvement and Genetic Resources, UHF, Nauni, Solan is a nodal centre for Poplar DUS testing, maintenance of reference varieties and germplasm field bank. No. of variety undergone maintenance breeding / characterisation / progress of development of DUS guidelines are as follows:

Name of the species	No of varieties	Source(own released/ICAR/SAU)
Populus deltoides	L6105, L30/06, L621/84, G-48 (Uttrakhand Forest Department) S_7 C_{15}, S_7 C_8,WSL 22, WSL 39(Wimco Seedlings Ruderpur, UK) 6503, 5503, 1007, L200/86 (Department of TIGR, UHF, Nauni) PL-3, PL-6, PL-7 (Department of Forestry PAU, Ludhiana)	SAU, Forest Deptt, WIMCO

DUS guidelines on Poplars have been published online by Protection of Plant Varieties and Farmers' Rights Authority Govt. of India, Ministry of Agriculture & Farmers Welfare, New Delhi, during, this period under report. DUS Test Guidelines on Poplar (*Populus deltoides*) have also been published in Hindi and English in Plant Varieties Journal of India, 11(10): 252-269 (2017).

4.4.13 Bidhan Chandra Krishi Viswavidyalaya, WB

The centre is managing a project i.e., *Validation of DUS testing guidelines for pointed gourd (Trichosanthes dioica Roxb.)* where DUS guideline is being developed and finalized alongwith ICAR-IIVR, Varanasi. Brief progress is as per the following:

The investigation was carried out at "C" Block Farm under the research field of All India Coordinated Research Project on Vegetable Crops, Bidhan Chandra Krishi Viswavidyalaya, Kalyani, West Bengal, India during 2017-18. Thirty two cultivars/varieties of pointed gourd were collected from different parts of West Bengal, U.P. and Jharkhand and tuberous root cuttings of each genotype were planted during 2nd week of October, 2017 at 5 cm deep pits previously mixed with well rotten cow dung manure and carbofuran 3G (@ 5 g/pit) with 1.0 m and 0.6 m spacing between rows and plants, respectively in 15-20 cm raised bed that were 6.0 m long and 1.5 m width, accommodating twelve plants per plot following Randomized Block Design with three replications. Fertilizers at the rate of 75 kg N in the form of urea, 75 kg P as single super phosphate and 75 kg K as murate of potash per hectare were applied pre-plant to the soil. Then 75 kg N was applied in two split doses at the time of peak vegetative stage and flowering, respectively. Hand pollination was done in the morning hours (5.00 a.m. to 6.00 a.m.) to take all the fruit characters for better expression. Other management practices were followed in time as scheduled for its cultivation.

4.4.13.1 Observations taken:

- Twenty five traits were used for the testing of candidate/reference varieties for DUS.
- For the assessment of distinctiveness, uniformity and stability, observations were made on 36 plants or parts of plants, which were divided among 3 replications (12 plants in each replication).
- Number of side shoots per branch was recorded as the number of secondary branches arising from the primary branch.
- Number of off types is considered to be nil as the crop is vegetatively propagated.
- Observations on the leaf characters were made on the widest part of fully developed leaf.
- Observations on the flowers were made on node number at which first female flower appears in 50 % populations.
- All observations on fruits were made on hand pollinated fruits around 12 days after anthesis at marketable maturity.
- All observations on the seed were made on fully developed and dry seed after washing and drying in the shade.
- Stages for recording of different observation on specific characteristic will be as follows:

Description			Code
A	Active vegetative phase	:	10
B	50% flowering stage (when 50% of the plants produce single flower or 1st flower)	:	20
C	Fruits attaining marketable maturity (12 days after anthesis)	:	30
D	Full maturity (ripened fruit)	:	40

4.4.13.2 Grouping of varieties

During DUS Testing, candidate selected varieties are divided into groups to facilitate the assessment of distinctiveness. The following characteristics will be used for grouping of pointed gourd cultivars/varieties.

Sl. No.	Plant parts	:	Characteristics
a.	Leaf: Shape		(Characteristic 5)
b.	Fruit: Shape	:	(Characteristic 15)
c.	Fruit: Skin primary colour	:	(Characteristic 16)
d.	Fruit: Surface colour pattern	:	(Characteristic 17)
e.	Fruit: Length	:	(Characteristic 19)
f.	Fruit: Diameter	:	(Characteristic 20)

4.4.14 ICAR-CIAH, Bikaner

A total of 42 datepalm varieties were maintained in field repository and evaluated for morphological and fruiting characters. The observations on spathe emergence/opening and flowering were recorded in 30 varieties during 2017-18, since other varieties are under vegetative phase; however, fruiting, bunch character and fruit quality of 30 varieties is presented in tables. The spathe emergence was started from second week of January and completed in first week of March. Delay in emergence of spathe was noted in few germplsams during the year which may due to low temperature conditions. Early emergence of spathe/flowering and even *doka* stage of fruit maturity was recorded in cvs. Khuneizi and Muscat.

The maximum length of bunch was observed in cv. Sewi (141cm) followed by Migraf (116cm) and Bikaner Local (97 cm). The variation in number of bunches from 3-11 per plant was recorded. Similarly, number of berries/strand varied from 6 to 26. The maximum number of bunches/ plant were observed in cv. Sewi and Braim (11) followed by cvs. Halawy, Sayer and Tayer (10). The maximum number of berries (26 per strand) was recorded in cv. Zahidi followed by Hayani, Bikaner Local and Hamara (20) while minimum was in Javantri variety (8). The early maturity of fruits (*doka*) was observed in cv. Khuneizi, Muscat and Halawy and harvested from mid June to first week of July. The maturity of fruits (*doka* stage) recorded in maximum cultivars in the second week of July. However, cvs. Medjool, Dayari and Sewi were harvested late. Total soluble solids (TSS) of *doka* fruits varied from 18.6 to 43.80^0 brix among varieties.

4.4.15Dr.B.S.Konkan Krishi Vidyapeeth,Dapoli

Dr. BSKKV, Dapoli is working on “Development of Descriptors for Kokum (Garcinia indica Choisy)”.

Brief progress of the project in 2017-18:

This centre has done survey in Konkan area and 689 individual trees are marked for recording during survey for observation. The details are given below:-

Sl. No.	State	District	Tahsil	No. of selected plants
1.	**Maharashtra**	Ratnagiri	Dapoli	165 (D.B.S.KKV Campus)
			Dapoli	23 (Farmers field)

2	**Maharashtra**	Sindhudurg	Kudal	450 (College of Horticulture mulde Campus)
			Vengurle	2 (Farmers field)
3	**Maharashtra**	Raigad	Sawantwadi	2 (Farmers field)
			Alibag	2 (Farmers field)
			Total	**689**

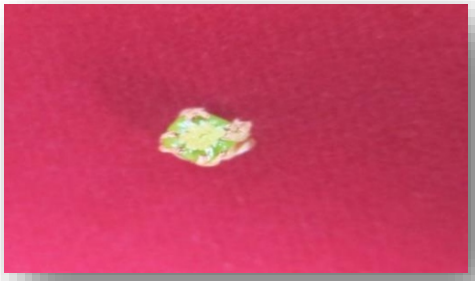
The following observations were recorded on individual trees and grouped are as follows to use during "Development of DUS guidelines for Kokum".

Characters grouped	Variations in Characters
Tree vigor	Strong, Intermediate, Weak
Height of tree	4.5-16.5 m
Crown shape	Conical, Pyramidal
Branching habit	Plagiotropic
Attachment of Leaf	Opposite
Leaf blade length (cm)	6.15 - 15.21 cm
Leaf blade width (cm)	2.72 - 6.89 cm
Leaf blade shape (cm)	Oblong, Elliptic, Oblanceolate
Prominancy of veins	Non Prominent
Leaf Margin	Entire
Shape of Leaf apex	Acute, Obtuse, Shortly acuminate
Shape of Leaf base	Acute, Obtuse
Flower	
Sex Types	Staminate or Male
	Hermaphrodite or bisexual
	Pistillate or Female
Position of Flower	Terminal/ Axillary
Form of Flower	Solitory/Cluster
Petal colour	Pale yellow with pink margin
	Pale yellow and Reddish colour inside petal
Sepal colour	Light green, Pale yellow, Light green to light red
Number of Turfts	2 turfts, 4 turfts
Structure of Flower	Hypogynous/Tetramerous
Length of Fruit	1.9 – 4.43 cm
Diameter of Fruit	2.1 – 5.8 cm
Shape of Fruits	1.Apple 2.Spherical/Round 3.Pear
Colour of Fruit	1. Red 2. Brownish Red 3.Dark Brown
	4.Blackish Red
Weight of Fruit	14.2- 65.4 g
Weight of Rind	5.6 – 34.07 g
Thickness of Rind	0.18 – 0.53 cm
Weight of Seed	0.53 – 1.38 g
Number of seeds / Fruit	3.2 – 7.8

Pyramidal

Conical

Two Turfits



Four Turfits

Shape of Apex

Shape of Base

Pear **Apple** **Round**

CHAPTER 5: ACTIVITIES RELATED TO FARMERS

5.1 Training-cum-awareness programmes

5.1.1 Zone- I

5.1.1.1 Krishi Vigyan Kendra (KVK), Baramulla

Training cum awareness programme on Protection of Plant Varieties and Farmers' Right Act (PPV&FRA), 2001 was organized by Krishi Vigyan Kendra (KVK) Baramulla at Braman village in boarder area of Rohama block of Baramulla district on 25th May 2017. The Chief Guest of the function was Sh. Daljit Singh Chib, (MOS) & Vice Chairman, State Advisory Board for Development of Kisans, J&K. He stressed the need for making optimum use of the latest agricultural technologies and creating awareness among the farmers enabling them to produce quality products in different crops. He also stressed to take benefits of different agricultural development schemes of central government as well as state government to achieve tangible results. DrManoj Kumar, Head (KVK) delivered lecture and advised farmers to register the plant varieties and species under PPV &FRA to get benefit. Sh Abdul Hamid Wani, Secretary, Kisan Advisory Board briefed about the programme and activities of the board for development of farming community. More than 200 farmers, farm women and rural youth from nearby village attended the programme. At this occasion lectures on improved agricultural technologies and farm inputs were distributed among participants.

5.1.1.2 Krishi Vigyan Kendra, Budgam

Training cum awareness programme PPV&FR Act, 2001 was organized by KVK Budgam at the New Conference Hall of District headquarters of Budgam on 25th of November 2017 under the chairmanship of Prof. Nazeer Ahmad, Hon'ble Vice Chancellor SKUAST-Kashmir. Dr Ravi Prakash, Registrar PPV&FRA and Mr. Mohammad Harun, Deputy Commissioner Budgam were the Guests of Honour. Prof. Nazeer Ahmad deliberated on the act stressed that scientists of KVK Budgam need to popularize the high value low volume and exotic vegetables like lettuce, broccoli etc. Dr. Nasir Ahmad Dar, Programme Co-ordinator, KVK Budgam highlighted the working and achievements of the KVK. Dr. Ravi Prakash Registrar PPV&FRA Authority (GOI) further elucidated the Act along with the procedure of registration and crops that can be registered. Mr. Mohammad Harun, Deputy Commissioner Budgam appreciated the role of KVK Budgam in ensuring the positive change in the outlook of farmers regarding agriculture and allied sectors in his jurisdiction and also stressed on the lookout of possible remedial measures for the land degradation in the district. The programme was attended by 165 farmers from various areas of Budgam districtA stall was also organized to display various landraces of agriculture and horticulture crops in collaboration with (DARS, Budgam) and NSP SKUAST-K.

5.1.1.3 CSK HPKV, KVK Kullu at Bajaura

Training cum awareness programme on PPV&FR Act, 2001 was organized on 19thFebuary 2018 by CSK HPKV, KVK Kullu at Bajaura, H.P. The Chief Guest of the function was Dr. Ram Lal Markanda, Hon'ble Minister of Agriculture, Information and Technology and Tribal Affairs, Govt. of Himachal Pradesh. Dr. J K Sharma, Professor & Head Seed Science cum Nodal Officer PPV& FRA Cell, CSKHPKV Palampur; Dr. S.C. Sharma, Deputy Registrar, PPVFRA, Branch Office at Palampur delivered lecture on PPV&FR Act. The farmers were sensitized and motivated on Protection of Plant Varieties & Farmers' Rights Act 2001 by the resource persons. An exhibition was also put on the

Protection of Plant Varieties & Farmers' Rights Act 2001. In the exhibition various information's on the rights of farmers, provision of the Act, the process of Registration in the form of posters were displayed.

More than 150 Farmers, farm women and rural youth from nearby village attended the programme. The impact of the programme was the entry of live samples of seeds of various mountain crops, fruits and vegetables by 38 farmers from different parts of the district. Ten farmers were also awarded appreciation certificate for conserving varieties of different mountain crops. Finally the Chief Guest sensitized the farmers to come forward for registering the plant varieties under Protection of Plant Varieties & Farmers' Rights Act 2001.

5.1.2 Zone-II

5.1.2.1 List of KVKs who have conducted training Programme during 2017-18

SN	Name of KVK	Date of Prog	No of Participants
1	Jaisalmer-I	22.03.2018	100
2	Pratpgarh	12.01.2018	100
3	Dausa	20 & 21.02.2018	200
4	Sikar	07.02.2018	200
5	Jalore	12.01.2018	120
6	Nagaur-I	11.01.2018	152
7	Pali	12.02.2018	35
8	Karauli	08 & 09.03.2018	290
9	S.Madhopur	09.03.2018	105
10	Alwar-I	16.02.2018	65
11	Baran	23.01.2018	76
12	Ajmer	23.02.2018	60
	Total participants		**1503**



5.1.2.2 Krishi Vigyan Kendra, Jaisalmer, Rajasthan

One day Training cum awareness programme on Protection of Plant Varieties and Farmers' Right Act (PPV & FRA 1961) was organized at Krishi Vigyan Kendra, Jaisalmer, Rajasthan on 22nd March, 2018. The Chief Guest, Chairman and special guest of this programme were Smt Anjana Meghwal, Jila Pramukh, Shri Kailash Chand Meena (District Collector, Jaisalmer) and Dr S.B. Gaurav, Dy Registrarof PPV&FRA Branch office, Pune, Maharashtra, Agriculture Scientists, progressive farmers and more than 100 farmers participated in the programme.

5.1.3 Zone- III

5.1.3.1 Training programmes on PPV & FRA

S.N.	KVK	No. of Participants	Training Date	Venue
1	Sitapur-II	117, 256, 118, 104, 88, 216, 97, Mass	06-09-2017, 09-09-2017	Villege–Biswan, Villege-Sakaran, All India Radio, Lucknow
4	Ballia	150	28/03/2018	KVK Ballia Campus
8	Candauli	105	28/03/2018	KVK campus
9	Jhansi	310	20/03/2018	KVK campus
10	Raebareli	110	26/03/2018	KVK campus

11	Aligarh	110	27/03/2018	Village of Surajpur of Jawan
				block district, Aligarh
12	Kannuj	125	22/03/2018	KVK Campus
13	Etawah	115	23/03/2018	KVK Campus
14	Mainpuri	113	21/03/2018	KVK Campus
15	Mahoba	110	27/02/2018	KVK Campus
16	Hamirpur	220	28/02/2018	KVK Campus
17	Lakhimpur Kheri	111	28/03/2018	KVK Campus
18	Lalitpur	350	24/03/2018	KVK Campus
19	Banda	150	27/02/2018	KVK Campus
20	Rampur		21/03/2018	KVK Campus
21	Saharanpur	101	07/03/2018	KVK Campus
22	Meerut	107	08/03/2018	KVK Campus
23	Muzaffarnagar	150	28/02/2018	KVK Campus
24	Baghpat	100	24/02/2018	KVK Campus
25	Mirzapur	74 ,56 & 123	05/03/2018 & 12/03/2018 & 28/03/2018	Dist-Mirzapur & BHU-Krishi Vigyan Kendra, Mirzapur
26	Gonda	510	29/03/2018	KVK Campus
27	Chitrakoot	125 & 155	02/02/2018 & 08/03/2018	KVK Campus
28	Allahabad	60 & 40	21/03/2018 &23/03/2018	KVK Campus
29	Pratapgarh	56 & 101	24/01/2018 & 17/03/2018	Raichandrapur & KVK Campus
30	Unnao	60	29/01/2018 & 30/01/2018	KVK Campus
31	Kaushambi	110 & 80 & 80 & 105	01-02-2018 & 09-03-2018 & 23-2-2018 & 17-03-2018	Village- Govindpur Newada, Block-Newada, KVK Campus
32	Auriya	134	24/03/2018	KVK Campus
33	Ghazipur	57 & 60 & 110	14, 18 & 27/03/2018	KVK Campus
34	Kushinagar	135	13/03/2018	KVK Campus
35	St. Ravidas Nagar	175	23/03/ 2018	KVK Campus Sant Ravidas Nagar, Bhadohi
36	Bareilly	504	09/03/2018	Village Devachara
37	Lucknow	300	16/02/2018	ICAR-IISR, Campus Hall
38	Mathura	1000	21/02/2018	Village-Palso, Mathura
39	Agra	286	5, 6, 7, 8, 9 March 2018	KVK Conference hall Bichpuri, Agra
40	Firozabad	100	24/03/2018	KVK, Campus
41	Etah	45, 40, 40, 60	7,8,12,19 February, 2018	KVK Campus, Etha

5.1.3.2 Krishi Vigyan Kendra, Hastinapur

Training cum awareness programme on PPV&FR Act, 2001 was organized by KVK , Hastinapur, Sardar Vallabhbhai Patel University of Agriculture and Technology, Meerut on 08 March, 2018. The Chief Guest of the function was Dr S K Sachan, Director Extension, SVPUA&T, Meerut, And other invitees were Dr Akash Tomar, Assistant Professor, Biotechnology (SVPUA&T, Meerut) and Dr Ritesh Sharma, Principal Scientist, Basmati Export Development Authority, Meerut. An exhibition of plant varieties, production technologies and other farmer oriented activities was arranged at KVK campus. Farmers were getting awareness to understand the rights on the issue. Some NGOs are also taking interest in protection of plant varieties. More than 125 farmers, farm women and rural youth from nearby village attended the programme.

5.1.3.3 Krishi Vigyan Kendra, Chinyalisaur, Uttarkashi

One day Training cum awareness programmeon Protection of Plant Varieties and Farmers' Rights Act, 2001 was organized at KVK, Chinyalisaur, Uttarkashi on 17th March, 2018. Shri Prakash Chandra Ramola, Vice-Chairman, Zila Panchayat, Uttarkashi was the Chief Guest of the event. The objective of the workshop was to create awareness on identification of the local and indigenous varieties and their registration through PPV&FRA. Dr Pankaj Nautiyal, Horticulture Expert from KVK, Uttarkashi created awareness regarding vegetable fruit and spice crops available in the district. He urged to the farmers and motivated them to come forward for registering the traditional varieties of the district. Dr. Gaurav Papnai, Extension Expert created awareness on the Protection of Plant Varieties and Farmers' Right Act, crops which can be registered, certain qualities of the crops for which they can be registered, procedure of registration of indigenous varieties and benefits of the registration.

In the programme Shri G S Chaudahry, AGM(NABARD) and Sri A K Mishra, Additional Horticulture Officer, Uttarkashi also shared insights regarding the provisions. During open discussion with the farmers, it was

identified that rajma of Harshil and some local pulses can be registered under this act. More than 160 progressive farmers of Uttarkashi district participated in the workshop.

5.1.4 Zone- IV

5.1.4.1 Programmes organized at Zone -IV

Name of KVK	Date and location	No. of Participants
ARWAL	29 July 2017, KVK Arwal	100
BHAGALPUR	24 – 26 February, 2018, BAU, Sabour	160
JEHANABAD	09/03/2018, KVK, Jehanabad	109
MUNGER	20/03/2018, KVK, Munger	145
NALANDA	15/03/2018	250
DEOGHAR	27th and 28th March, 2018, KVK Deoghar and Pidit Lokshala madhupur, Deoghar	114
GARAWAH	27 & 30 March 2018 at KVK, Garhwa	125
RANCHI	30 March 2018 at KVK Ranchi	210
WEST SINGHBHUM	27 th March at Panchayat BhawanHatgamhria and 30th March, 2018 at Asanpath Village	100
GUMLA	24th March 2018 at KVK HQ	269

5.1.5 Zone- V

In order to sensitize the farmers about their rights and protection acts an awareness programme on "Protection of Plant Varieties and Farmers Rights" was organized at 07 KVKs under ICAR ATARI, Kolkata in collaboration with PPV&FRA, Government of India, New Delhi. Details given are as follows:

SI. No.	Name of KVK	Date of organizing the programme	No. of participants in the programme	No. of registered variety(s)	Name the crop Species
1	Araria	05/06/2017	75	4	Paddy
2	Arwal	29/07/2017	100	-	-
3	Khagaria	23/05/2017	120	29	Cereals, Vegetables, Tuber crops, Fruits, Spices, Pulses, Oilseeds
4	Deoghar	29/04/2017	151	3	Paddy-3
5	Howrah	08/09/2017 15/09/2017	104	7	Paddy-7
6	Nadia	16/06/2017 22/06/2017	180	16	Vegetables
7	West Medinipur	10/10/2017 01/11/2017 11/11/2017 16/11/2017 20/11/2017 23/11/2017 27/11/2017	383	107	Cereals, Pulses, Vegetables, Oilseeds, Spices
Total			1113	166	

5.1.6 Zone- VI

5.1.6.1 Krishi Vigyan Kendra, Bongaigaon, Assam

Krishi Vigyan Kendra, Bongaigaon organized training cum awareness programme on *Protection of Plant Varieties and Farmers' Rights Act, 2001* at Kala Parishad Bhawan, Abhayapuri, Bangaigaon on 17th March, 2018. Dr. Ranjit Sarma, Assoc. Dean, SCS College of Agriculture, Assam Agricultural University, Dhubri chaired the programme and explained the importance of protection of plant varieties and farmers' rights. He encouraged the farmers to conserve the varieties and get them registered for the benefit of farming community.

Dr. S. K. Paul, Chief Scientist, Regional Agricultural Research Station, Assam Agricultural University, Gosaigaon highlighted the salient features of the Act which safeguards the interest of plant breeders and farmers in conserving the valuable varieties and encourage the development of new varieties. It protects the right of the farmers in respect of their contribution made at any time in conserving, improving and making available plant genetic resource, protect plant breeder's rights and facilitate growth of seed industries. MsMary Sadhana Sarma, SMS (Plant Breeding and Genetics), KVK, Bongaigaon stressed the farmers about conservation of germplasm of local varieties and seed production of major crops in the district in order to avoid dependency on others. Altogether 153 numbers of participants attended the programme.

5.1.6.2 Krishi Vigyan Kendra, Jorhat

KVK, Jorhat organized an awareness programme on Protection of Plant Varieties and Farmers Rights Act, 2001 on 17th March, 2018 at Fesualgaon in presence of 450 farmers and farm women of the locality. The programme was inaugurated by Dr. K.M. Bujarbaruah, Hon'ble Vice-Chancellor of Assam Agricultural University in presence of Dr. P.K. Pathak, Associate Director of Research (Agri); Dr. R. Saud, Associate Director of Extension Education, Dr. M.K. Sarmah, Senior Extension Specialist; Dr. K.K.Sarmah, Principal scientist and Dr. N. Sarmah Baruah, Professor, Dept. of Plant Breeding & Genetics of Assam Agricultural University. In connection to this, Dr. K.K.Sarmah and Dr. N. Sarmah Baruah delivered lectures on PPV&FR Act, 2001 which was followed by a farmers-scientist interaction programme.

5.1.6.3 KVK, SIVASAGAR

KVK, Sivsagar organized an awareness programme on Protection of Plant Varieties and Farmers' Rights Act, 2001 on 17th March, 2018 at KVK Sivsagar in presence of 425 farmers and farm women of the locality. The chief Guest of the programme was Ms S Bordoloi, CEO, Zila Parisad and others invitees of the programme were Mr L Mahanta, DDM, NABARD; Dr B C Bhattacharyya, VO; Dr N Borah, Sivasagar College. Lecture was delivered on importance of preserving traditional varieties and importance of PPV&FRA & its' relevance to Farmers. The Farmers have expressed interest in registering their traditional varieties being cultivated by them since many years and already have submitted few varieties for register and programme was successfully ended with the active participation of the people of the locality.

5.1.7 Zone-VII

5.1.7.1 Krishi Vigyan Kendra, Mon (Aboi)

Krishi Vigyan Kendra, Mon (Aboi), Nagaland organized training cum awareness programme on "*Protection of Plant Varieties and Farmers' Rights Act*, 2001" at KVK, Mon (Aboi), on 09th March, 2018. The chief Guest of the programme was Shri Hito Sema, Additional Deputy Commissioner, Aboi, Mon, Nagaland He encouraged the farmers to conserve the varieties and get them registered for the benefit of farming community.

Dr. M.S. Sachan, Asst. Chief Technical Officer (Genetics & Plant Breeding), KVK, Mon, Dr. PaihemMichui, Asst. Chief Technical Officer(Animal Science), KVK, Mon was the resource person and delivered lecture on PPV&FR Act. Nearly 100 participants attended the programme.

5.1.7.2 KVK, Tawang, Arunachal Pradesh

Training cum Awareness programme on Protection of Plant Variety and Farmers' Rights Act, 2001 was organised by KVK, Tawang, Arunachal Pradesh i.e. 29.03.2018 at Zomkhang Hall, Tawang. Altogether 126 farmers and representative from allied departments attended the programme.

Dr D S Chhonkar, Senior Scientist & Head, KVK, Tawang highlighted the aim and objective of the programme. Mr Dorjee Yodon Thungon, SMS (Home Science) briefed on the Act and Mr C. K. Singh, SMS (Agronomy), explained on DUS (Distinctness, Uniformity, Stability) Testing. Later in the interaction session farmers shared their problems and cleared doubts. Nearly 126 participants attended the programme

5.1.8 Zone-VIII

5.1.8.1 Detail of the programmes

State: Maharashtra			
Raigadh	12/12/2017	KVK Raigadh	107
Pune-II	20/05/2017	College of Agriculture, Pune	24
Satara-I	19/01/2018 28/10/2017	Swarupkhan wadi, Tal – Man Bhushangad, Tal - Khatav	45
Beed-I	08/03/2018	Warpgaon	54
State : Gujarat			
KVK Tapi	25/04/2017	Village-Amaniya, Block-Dolvan, Dist. Tapi	162
	26/03/2018	KVK, NAU, Vyara-Tapi	
	27/03/2018	NAU, Navsari	
Kutch-I	19/03/2018	Sadau (Mundra)	42
Dahod	28.03.2018	KVK, AAU, Dahod	71
Sabarkantha	17/03/2017 18/03/2017	Village : Navavavkampa and Kesharganj	312
Junagadh	28/03/2018	KVK JJunagadh	23
Navsari	27/03/2018	Central Examination Hall, Navsari Agriculture University, Navsari	625

5.1.9 Zone IX

5.1.9.1 Training Programmes conducted under PPV & FRA Act, 2001 during 2017- 18

S.No	Name of KVKs	Venue	Deatils	Date of conducted programme
STATE: Madhya Pradesh				
1	Narsinghpur	Village: Andhiyari, Block : Gotegaon	Exhibition and Kisan Gosthi	06.02.2018

2	Datia	Krishi Vigyan Kendra		20.02.2018
3	Jabalpur	Krishi Vigyan Kendra		07.03.2018
4	Jhabua	Krishi Vigyan Kendra		16.02.2018
5	Mandsaur	Village: Amlavad, Distt: Mandsaur		28.01.2018
6	Raisen	Krishi Vigyan Kendra		07.02.2018
7	Neemuch	Krishi Vigyan Kendra		04.02.2018
8	Shahdol	Village Khatauli, Block Sohagpur		08.02.2018
9	Sehore	Krishi Vigyan Kendra		02.02.2018
10	Tikamgarh	Krishi Vigyan Kendra		30.01.2018
11	Sidhi	Krishi Vigyan Kendra		30.01.2018
12	Umaria	Village -Dhavaijhar , Block -Karkeli		10.2.2018
13	Badwani	Krishi Vigyan Kendra		09.03.2018
14	Dhar	Krishi Vigyan Kendra		21.02.2018
15	Dindori	Village: Chapwar, Block: Samnapur		09.02.2018
16	Harda	Village: Cheerakhan Teh. Hadia		02.02.2018
17	Khargone	Krishi Vigyan Kendra		17.03.2018
18	Sagar	Krishi Vigyan Kendra		15.02.2018
19	Satna	Pagarkhurd and Amirti Panchayats of Majhgawan block		28.01.2018 03.02.2018
20	Shajapur	Krishi Vigyan Kendra		29.01.2018
21	Panna	Village Tara, Batasha		30.01.2018 21.02.2018
STATE: Chhattisgarh				
22	Balrampur	Krishi Vigyan Kendra	Exhibition and Kisan Gosthi	25.02.2018
23	Bastar	Krishi Vigyan Kendra		20.02.2018
24	Bijapur	Zila Panchyat Sabhagar		20.03.2018
25	Dhamtari	Vilage : Kodebod Block Dhamtari		07.02.2018
26	Bilaspur	Krishi Vigyan Kendra		09.02.2018
27	Dantewada	Krishi Vigyan Kendra		20.02.2018
28	JanjgirChampa	Krishi Vigyan Kendra		05.02.2018
29	Jashpur	Krishi Vigyan Kendra, Dumarbahar, Jashpur		26.02.2018
30	Kanker	Village - Ghotulmunda, Block - Durgukondal		07.02.2018
31	Kawardha	Krishi Vigyan Kendra		15.02.2018
32	Korea	Village - Salka		23.02.2018
33	Rajnandgaon	Krishi Vigyan Kendra		01.02.2018
34	Surguja	Krishi Vigyan Kendra		24.02.2018
35	Raipur	Krishi Vigyan Kendra		14.03.2018

5.1.9.1.1 Number of participants attended the programme.

S.No.	State	No. of farmers	No. of Scientists	No. of State Govt. Officers/Officials	No. of NGO persons and other participants	Total no. of participants
1	Madhya Pradesh	5016	152	192	78	5438
2	Chhattisgarh	2483	132	103	73	2791
3	Total	7499	284	295	151	8229



5.1.10 Zone X

5.1.10.1 KVK wise Details of awareness cum training programmes on PPV and FR Act 2001

Sl.No	State	Name & Address of KVK	Venue of the programme	Date of Aw Prog.	No of participants
1	Andhra Pradesh	KVK, PO. Reddipalli ,Dist-Anantapur	Respective KVK campuses	March 17, 2018	503
2		KVK, Amadalavalsa, Dist. Shrikakulam.			584
3		KVK . PO. Rastakuntabai, Dist. Vizianagaram.			562
4		KVK, P.O. Utukur, Dist. Kadapa.			450
5		KVK, Dist. Krishna.			678
6		KVK Yagantipalli ,Kurnool			754
7		KVK, Dist East Godavari			344
8		KVK, Dist. West Godavari			644
9		KVK, Dist. Chittoor.			450
10		KVK, Rass, TirupatiDist. Chittoor			384
11		KVK Lam, Guntur			780

Sl.No	State	Name & Address of KVK	Venue of the programme	Date of Aw Prog.	No of participants
12		KVK Darsi, Prakasham			480
13		KVK Nellore			304
14		KVK, Dist Nellore.			350
15		KVK, Dist Visakhapatnam.			4780
16		KVK Vishakapatanam			343
17		KVK Kurnool, Banvasi			540
				Total	**12930**
1	Tamil Nadu	KVK, Sandhiyur , Dist Salem	KVK Campus	March 17, 2018	216
2		KVK, Vridhachalam, Dist. Cuddalore			240
3		KVK, Sirugamani, Dist Trichirappali			846
4		KVK,Valikandapuram, Dist Perambalur			763
5		KVK, (ZARS), Dist Pudukottai			347
6		KVK ,(ZARS), Dist Ramnathapuram	Collector's Campus		197
7		KVK, Dist Kanyakumari	KVK Campus		131
8		KVK, Dist Madurai	Kakkan Auditorium, Madurai		515
9		KVK,Tindivanam, Dist Villupuram	NBC Govindammal	17-3-18	477
10		KVK, Virinjipuram, Dist Vellore	KVK Campus	March 17, 2018	222
11		KVK,Tirur, Dist Thiruvallur.			176
12		KVK, Needamangalam, Dist Tiruvarur.			234
13		KVK, Sikkal, Dist Nagapattinam.	Collectors' office		238
14		KVK, Dist Virudhunagar	KVK Campus		132
15		KVK, Dist Dharmapuri			217
16		KVK, Dist Kancheepuram			238
17		KVK, Dist Shivagangai	Mandabam, Kundrakudi		412
18		KVK, Dist Namakkal	KVK Campus		576
19		KVK, Gandhigram, Dist Dindigul			312
20		KVK, Vivekanandapuram, Dist Coimbatore			429
21		KVK, Kamatchipuram, Dist Theni.			187
22		KVK, Mallinayanapalli, Dist Krishanagiri	Shanthi Mahal, Krishnagiri		638
23		KVK ,Gobichettipalayam, Dist Erode	KVKCampus		531
24		KVK, Mudivithanedal, Dist Tuticorin			647
25		KVK, Kulithalai, Dist Karur			477
26		KVK,Chozjamadevi, Ariyalur			740
27		KVK, Taluka Vembakkam Thiruvannamalai			592
				Total	10730

Sl.No	State	Name & Address of KVK	Venue of the programme	Date of Aw Prog.	No of participants
1	Telangana	KVK, ARS, Dist Adilabad.	KCB, Adilabad	March 17,	654
2		Krishi Vigyan Kendra, Mancherial	KVK Campus	2018	449
3		KVK, Madanapuram, Dist Mahaboobnagar			186
4		KVK Palem, Mahaboobnagar			353
5		KVK,Zaheerabad, Dist Medak			130
6		Krishi Vigyan Kendra, Rudrur, Dist. Nizamabad			2015
7		KVK Medak (E)			200
8		KVK Jammikunta, Dist. Karimnagar			255
9		KVK, Ripurammandal, Dist. Nalgonda			1251
10		KVK, Malyal, Dist. Warangal	KVK Campus		457
11		KVK, Wyra, Dist Khammam			856
12		KVK, Mamnoor, Dist Warangal			375
				Total	**7181**

5.1.11 Zone –XI

A training cum awareness programme was organized at KVK, Bengaluru Rural, village Hadonahalli on April 11, 2017. Dr Niranjana Murthy, Professor and Head, AICRP on Potential Crops, GKVK, UAS, Bengaluru and Dr K Narayanagowda , Associate Director of Extension, UAS, Bengaluru gave lectures. KVK, Dept. of Agriculture/Horticulture/Animal Husbandry/ Sericulture, Sahaja Seeds isplayed varietal wealth in different stalls. Nearly 94 farmers/ farm women, 30 extension persons and 6 agencies participated in the programme.

5.2 Other Programmes

5.2.1 Regional workshop on Farmers' Rights and Agro-biodiversity exhibition at NRRI, Cuttack

A regional workshop on Farmers' Rights and Agro-biodiversity exhibition was organized on 17th November, 2017 by PPV&FRA in association with ICAR-National Rice Research Institute, Cuttack, Odisha. In this occasion, Dr. Himanshu Pathak, Director, ICAR-National Rice Research Institute, Cuttack, conveyed his hearty welcome to the Chief Guest andother dignitaries, scientists, farmers participated to the Regional Workshop organized by PPVFRA and ICAR-NRRI at Cuttack. Dr. B. Rajender, Joint Secretary (Seeds) & Chairperson, PPV&FRA in his inaugural remarks appreciated the ICAR-NRRI for organising this regional workshop for awareness among farmers about the rights enshrined in the PPV&FR Act, benefit sharing, compensation and benefit of registration of farmers' varieties. Dr T Mohapatra, Secretary, DARE and Director General, ICAR thanked PPV&FRA to organize such workshop with the august presence of Sh. S. K. Pattanayak, IAS, Secretary, DAC&FW and urged that people from Odisha are eager to hear advice from the Experts present in the gathering.

Dr. R. C. Agrawal, Registrar General gave a brief description of the Technical session and its mandate to discuss about mainstreaming of FVs, benefit sharing and compliance mechanism. He requested that PPV&FRA is looking for opinions and concepts to develop strategies for benefitting farmers for their registered varieties through such regional workshops. The agro-biodiversity exhibition is arranged to show case such diversity amongst the farmers' varieties. The meeting was attended by farmers of the state of Odisha, Jharkhand and Chhatisgarh. A stall of PPV&FR Authority was displayed with posters and publications of the Authority. And applications forms were distributed to the farmers and KVKs for filing of applications of farmers varieties displayed at the stalls.

5.2.2 Regional workshop on Farmer's Rights and Agro-biodiversity at Assam Agricultural University, Kahikuchi, Guwahati.

A regional workshop on Farmer's Rights and Agro-biodiversity exhibition was organized on 14th December, 2017 by PPV&FRA in association with Assam Agricultural University, Kahikuchi, Guwahati. The exhibition and workshop was inaugurated by Sh. K.K. Mitial, Additional Chief Secretary and Agriculture Production Commissioner, Govt. of Assam. The meeting was attended by more than 800 farmers from different parts of North Eastern states. A stall of PPV&FR Authority was displayed with posters and publications of the Authority. About 100 applications forms were distributed to the

farmers and KVKs for filing of applications of farmers varieties displayed at the stalls. Dr. R.C. Agrawal, Registrar General, along with other staff of PPV&FR Authority visited the PPV&FR Guwahati Branch Office, Guwahati on 14th December, 2017 and reviewed the functioning of Branch Office and took stock of the infrastructure and made valuable suggestion and provided guidance for future working. Another meeting on use of Hindi in official communications was also chaired by Dr. R.C. Agrawal, Registrar General and valuable suggestions were provided to increase use of Hindi in official communications.

5.2.3 Regional Workshop and Agro-biodiversity Exhibition at Indian Institute of Sugarcane Research Institute, Lucknow

The regional workshop and Agro-biodiversity exhibition was organized at IISR, Lucknow on 15th January, 2018 wherein more than 400 farmers participated in the programme. Several exhibition stalls were installed and exhibited huge collection of crop diversity representing different regions.

The exhibition was inaugurated by Dr. B. Rajender, Joint Secretary, (Seeds) and Chairperson of PPV&FRA (I/c) and Registrar General, Dr. R.C. Agrawal and Director of IISR, Dr. A.D. Pathak were also present during the workshop. Officers of PPV&FRA delivered lectures on mainstreaming of Farmers Varieties. In addition, several farmers shared their experiences. Dr. R.C.Agrawal, Registrar-General explained the importance of traditional varieties conserved by farmers and the importance of protecting those varieties under PPV&FR Act. He urged the farmers to come forward to register their varieties.

5.2.4 Regional workshop on Farmers' Rights and Agro-biodiversity Exhibition at PJTSAU, Hyderabad

The programme was jointly organized by Protection of Plant Varieties & Farmers' Rights Authority, Government of India, New Delhi in association with PJTSAU, Hyderabad and ICAR - Agricultural Technology Application Research Institute (ATARI) - Zone X (Hyderabad) and Zone – XI (Bengaluru) with an objective to sensitize the farmers / breeders to recognize the importance of farmers' varieties, their registration and mainstreaming for further utilization in breeding programme and conservation of agro-biodiversity.

Around 450 farmers from five southern states i.e., Telangana, Andhra Pradesh, Tamil Nadu, Karnataka and Kerala, 170 scientists from various ICAR institutes, PJTSAU and KVK's from different southern states and 50 PG students of University have participated in the workshop. Several sessions were conducted during the workshop covering various aspects relating to registration of varieties and conserving agro biodiversity. A separate session for Plant Genome Savior Awardees and other farmers was organized wherein the farmers from various states have expressed their views, shared their experiences & clarified their doubts with regard of the Act. Smt. Anjamma from Gangwar village, Zaheerabad mandal, Medak district of Telangana, who is the recipient of *Plant Genome Savior Farmer Reward* in 2015, shared her experience regarding cultivation of diversified crops and sharing of farm saved seed of all the crops to the neighboring farmers.

Dr. R.C. Agarwal, Registrar-General, PPV&FRA remarked on the following issues that emerged during the technical deliberations.

- Views expressed by the farmers and other stakeholders in the workshop will be compiled
- The present prize money given to KVK's will be revised

- The Authority is persuing the issues of benefit sharing, claim compensation and also misuse of farmers' varieties.
- The Authority will take clarification from DDG (Crop Sciences / Horticulture) regarding registration of varieties with PPV&FR Authority at AVT - II stage of evaluation
- The Authority is also taking initiative steps to reduce the registration fee from Rs. 2000/- to Rs. 500/-

At the end, he once again urged the farming community to hasten up the registration process as the dead line for registration of farmers' varieties and extant varieties is 2020.

5.2.5 National Seminar on Farmers' Rights and Agro-biodiversity Exhibition

The "National Seminar on Farmers Rights and Agro-biodiversity Exhibition" was held on 23rd February, 2018 at ICAR-Indian Institute of Vegetable Research, Varanasi, Uttar Pradesh. The seminar was inaugurated by Shri Radha Mohan Singh, Hon'ble Minister of Agriculture and Farmers Welfare, Govt. of India.

Nearly five thousand farmers, farm women, extension workers and development functionaries from Uttar Pradesh, Uttarakhand, Jammu & Kashmir, Himachal Pradesh, Punjab, Haryana, Chandigarh, Delhi and many other states participated in the Seminar. Various ICAR institutes dealing with different Agri-horticultural crops, State Agricultural Universities, developmental agencies from public and private sectors, Banks and NGOs also participated and displayed their latest technologies/products in the form of live specimens, charts, photograph etc. in the National Exhibition.

5.2.6 National Seminar on Farmers Rights and Agro-biodiversity Exhibition at DRI, Chitrakoot

The PPV&FRA organized a "**National Seminar and Agro-Biodiversity Exhibition"** at Deendayal Research Institute, Chitrakoot on 26th February, 2018. The progarmme was inaugurated by Dr. T. Mohapatra, Director General, ICAR and Secretary DARE, New Delhi and it was attended by Dr. Naresh Chandra Gautam, Vice-Chancellor, Mahatma Gandhi Chitrakoot Gramodya Vishwavidalaya, Chitrakoot, Dr. K. V. Prabhu, Chairperson PPV&FRA, New Delhi, Sh. Virandra Jeet Singh, Chairman, Deen Dayal Research Institute, Chitrakoot, Sh. Atul Jain, Joint Secretary, Deen Dayal Research Institute, Chitrakoot, Dr. R. C. Agrawal, Registrar-General, PPV&FR Authority, New Delhi and Dr. Ravi Prakash, Registrar, PPV&FR Authority, New Delhi.

During inaugural session, Sh. Ganesh Singh Hon'ble MP, Satna Constituency, Madhya Pradesh, appreciated the activities of PPV&FRA. Director General, ICAR explained the importance of registration of farmers' varieties in the Authority. Dr. K.V. Prabhu, Chairperson, PPV&FRA spoke about the importance of conservation of the farmers' varieties and benefits sharing; Sh. Atul Jain, Joint Secretary, Deen Dayal Research Institute, Chitrakoot presented a detailed progress about the DRI and activities undertaken in the Institute; Dr. R. C. Agrawal, Registrar General, PPV&FRA addressed the gathering in detail about the authority and its future road map and Dr. Ravi Prakash, Registrar delivered a lecture on farmers' rights.

5.2.7 Regional Workshop and Plant Variety Diversity Exhibition on 27th March, 2018 at Navsari Agriculture University, Navsari

"Regional Workshop and Plant Variety Diversity Exhibition" was organized on 27th March, 2018 at Navsari Agricultural University, Navsari which was inaugurated by Dr. K. V. Prabhu, Chairperson, PPV&FRA and presided over by Dr. S. R. Choudhary, Director of Research & Dean Studies, Navsari Agriculture University. Dr. G.R. Patel, Additional Director Research, Director Extension Education, Project Coordinator of Krishi Vigyan Kendra, Navsari Agriculture University was also present. There were more than 500 farmers present during the workshop.

During the workshop, 24 stalls by KVKs of the University were exhibited and some of the new varieties of stevia and suratponk were also exhibited. In addition to these varieties, Chairperson urged to register sorghum cultivars with PPV&FRA. Similarly some of the vegetable cultivars such as Indian beans, sponge gourd are also required to be registered with PPV&FRA.

Dr. K. V. Prabhu, Chairperson, in his inaugural address, requested the audience to register their variety with PPV&FRA for legal right and farmers benefits sharing of the variety developed/conserved by the farmers for several years. The chairperson appreciated the presence of several women participants who were keen to know about the activities of PPV&FRA.

5.2 Plant Genome Saviour Community Awards, Rewards and Recognitions

The Plant Genome Saviour Awards Ceremony was held on 19th April 2017 at Mothihari, Champaran, Bihar in the presence of Shri Radha Mohan Singh, Hon'ble Union Minister for Agriculture and Farmers Welfare, Government of India. A total of thirty-five awards were presented to farmers and farming communities from different parts of India. There are three categories of awards: ***Plant Genome Saviour Community Awards, Plant Genome Saviour Farmers' Rewards and Plant Genome Saviour Farmers' Recognition.*** In the programme, five farming communities were awarded with a citation, a memento and cash prize of Rs. 10 lakh; ten farmers are rewarded Plant Genome Saviour Farmers' Rewards with a citation, a memento and cash of Rs. 1.5 lakh; and twenty farmers were awarded Plant Genome Saviour Farmer Recognitions that includes a citation, a memento and cash of Rs. 1 lakh.

5.2.1 Plant Genome Saviour Community Awardees:

5.2.1.1 Nonglawai Orchid Society, Nonglwai-II, Nongstoin, West Khasi Hills, Meghalaya- 793119

Nonglwai Orchid Society, Nonglwai-II, Nongstoin, West Khasi Hills, Meghalayalocated in Khasia Jaintia Garo Hills Agro-biodiversity hotspot region, is actively involved in conservation of more than 75 species of Orchids like *Cymbidium, Dendrobium, Bulbophyllum, Paphiopedilum, Pleione* and other species. They have also maintained RET orchid species which found in and around Meghalaya. Society members were trained in conservation and cultivation by ICAR-NRC on Orchids, Sikkim with the assistance of Basin Development Unit, West Khasi Hills.

5.2.1.2 Gramin Khadya Samprabhuta Samooha filed by Seven Village Panchayats of Almora, Uttarakhand - 263678

Gramin Khadya Samprabhabhuta Samooha *(a community of s*even village panchayats , viz., Suri, Garsyari, Harare, Bergaon, Inan, Suniakote and Matila)**, Block Tarikhet, Almora, Uttrakhand,** located in Western Himalaya agro-biodiversity hotspot region is actively involved in the conservation and sustainable utilisation of native crop genetic resources that are important for food sovereignty and indigenous farming. This community represents a model site for crop-livestock small-scale mixed rainfed farming in Uttrakhand Hills.

5.2.1.3 Tribal Council filed by Nicobari Tribe, Car Nicobar, Nicobar, Andman & Nicobar – 744301

Nicobari Tribe, Car Nicobar, Andaman and Nicobar Islands**,** located in Islands agro-biodiversity hotspot region is actively involved in the conservation and sustainable utilisation of traditional varieties like Achin, Domrit, Bolta, Thirose, Kaniya etc in Nicobari Aloo(Greater Yam) and other tuber species. The conservation, cultivation and farmer to farmer exchange through tuhet/joint family system have ensured sustainable livelihood of these communities.

5.2.1.4 Ahinsa Club, Bhutibahal, Gaisilat, Raisalpadar, Bargarh, Odisha – 768037

Ahinsa Club, Bhutibahal, Gaisalat, Bargarh, Odisha, located in Koraput agro-biodiversity hotspot region is actively involved in the conservation and sustainable utilisation of traditional varieties in rice, millets, vegetables, tuber crops, oil seeds and pulses. This community based organisation is promoting organic practices for seed treatment, plant nutrition, storage and mixed farming among local farmers for livelihood promotion.

5.2.1.5 Kunbi Tribe, Joida, Uttara Kannada, Karnataka - 581186

Kunbi Tribe, Joida Taluk, Uttar Kannada, Karnataka**,** located in Konkan agro-biodiversity hotspot region is actively involved in the conservation and cultivation of different tuber crops and shared "Mudli"(dasheen Taro) with ICAR-CTCRI, which is rich in carbohydrate, protein and other nutrients. The community follows indigenous method of cultivation, storage and processing.

5.2.2 Plant Genome Saviour Farmers' Rewards Awardees

5.2.2.1 Shri Reji Joseph, Palakkatharappe, Near Kuttichathan Kavala, Ottappalam , Sreekrishnapuram

Palakkad, Kerala

Shri Reji Josephis a progressive grower and conserver of many local cultivars of Aonla including Sholayoor type, Puthoor type, Eruthayampathy type and other medicinal crop species. He supplies Aonla fruits to Arya Vaidya Sala, Kottakkal; root stocks of wild Aonla and scions of selected varieties to nurseries and research institutions.

5.2.2.2Shri Dwarikesh Pandey, Masturi, Baniyadih, Sipat, Bilaspur, Chhattisgarh - 495001

Shri Dwarikesh Pandey is a progressive grower and conserver of many local cultivars of Rice, Chickpea, Sunflower etc. He also shared Karhani-1 with IGKV, Raipur which is being used as a genetic resource for breeding of Rice varieties.

5.2.2.3Shri Chaitram Yadav, Bilah, Dhooma, Bilaspur, Chhattisgarh - 495001

Shri Chaitram Yadavis a progressive grower who developed a Ber cultivar called 'Angoori' and deposited material with KVK, Bilaspur. Angoori Ber is having a cluster of fruits like Grape and sweet in taste with small stone size and this variety is being utilized as a donor for development of a variety.

5.2.2.4 Shri Navnath Malhari Kaspate, Madhuban Niwas, Near Swayanvar, Mangal Karyalaya, Latur Road, Barshi, Solapur, Maharashtra - 413401

Shri Navnath Malhari Kaspate is a progressive grower and developed a Custard Apple cultivar called 'NMK-1(Golden)' through selection which has been used for crop improvement at MPKV, Rahuri. The mature fruits of NMK-1(Golden) are having attractive colour, size, keeping quality etc.

5.2.2.5 Shri Mathew Sebastian, Thazhethel House, Melatoor Post, Perinthalmanna, via, Malappuram, Kerala

Shri Mathew Sebastianis a progressive grower who developed a Nutmeg cultivar called 'IISR-Keralashree' in collaboration with ICAR-Indian Institute of Spices Research, Kozhikode through farmers' participatory breeding programme. The variety was developed from an elite mother tree from Burliar, Tamil Nadu and sourced from IISR. The variety is having very bold nut, mace and nut oils are rich in Sabinene; low Myristicin and Elemicin content in nut and mace.

5.2.2.6 Shri Sanjeev Kumar, Hajipur Chakwara, Vaishali, Bihar - 844101

Shri Sanjiv Kumaris a progressive grower who has shared his Cauliflower germplasm that was used for development of an early maturing cauliflower variety "*Sabour Agrim*" at Bihar Agricultural University, Sabour.

5.2.2.7Dr. Mruthunyappa C. N., #72, Santhrpathi, Shanthala Marg, ShrirampuraMysore, Karnataka – 570008

Dr Mruthunjayappa C.N.,is a progressive cultivator and conserver of many varieties in fruits, medicinal plants and other crops which have been used as donor of genes for development of varieties at College of Horticulture (UHS Bagalkot), Mysore.

5.2.2.8 Shri Sundaram Verma (Kumavat), Dantaramgarh, Dhabhiyon wali kothi, Danta Sikar, Rajasthan – 332702

Sh Sundaram Verma (Kumavat)is a progressive cultivator and developer of many crops like Sorghum, Green gram, Pearl Millet, Chickpea, Coriander etc. He has shared his germplasm of Chickpea, Carrot, Cauliflower and Chili which are being used in breeding programme for development of improved varieties at PAU, Ludhiana. He had deposited accessions of Coriander, Cumin, Guar, Pearl millet and Trigonella germplasm(s) at NBPGR.

5.2.2.9 Shri T.T. Thomas, Thekkel (H), Kanchiyar, Kakkattudkada, Idukki, Kerala - 685511

Sh T T Thomasis a progressive cultivator and selected a high yielding Black pepper variety "Thekkan" that has long, fully branched spikes with higher no of berries per spike than other traditional cultivars of Black pepper. This unique character of branched spike is being evaluated at KAU, Thrissur for further crop improvement studies.

5.2.2.10 Smt. Anjamma Gangwar, Zaheerabad, Medak, Telangana - 502251

Smt Anjammais a conserver and grower of traditional varieties in Jowar, Rice, Millets, Arhar, Black gram, Greengram and other crops. These varieties are being utilized in breeding programme at Agricultural Research Station (UAS, Raichur), Bidar.

5.2.3 Plant Genome Saviour Farmer Recognitions Awardees

5.2.3.1 Smt. Phula Bai Tikamgarh, Soriyana, Lar, Madhya Pradesh – 472001

Smt Phula Bai is conserving "Lal Dhan", a local variety in Rice since long time. In this variety, donor gene has been identified and utilized in the genetic improvement programme for the development of varieties at JNKVV, Jabalpur, M.P.

5.2.3.2 Shri Raghuwar Adwashi Jatara, Nadiya, Bijrawan, Tikamgarh, Madhya Pradesh - 472001

Sh Raghuwar Adwashiis conserving "Paddy Local", a local variety in Rice since long time. In this variety, donor gene has been identified and utilized in the genetic improvement programme for the development of varieties at JNKVV, Jabalpur, M.P.

5.2.3.3 Shri Pyrae Lal Sauryana, Lar, Tikamgarh, Madhya Pradesh - 472001

Sh Pyrae Lalis conserving "China", a local variety in Small Millet since long time. In this variety, donor gene has been identified and utilized in the genetic improvement programme for the development of varieties at JNKVV, Jabalpur, M.P. The grains are sweet and can be used in Chapati making during winter months.

5.2.3.4 Shri Mathura Prasad Kushwaha Kanti, Heeranagar, Tikamgarh, Madhya Pradesh – 472001

Sh Mathura Prasad Kushwaha is conserving "Kodon", a local variety in Small Millet since long time. In this variety, donor gene has been identified and utilized in the genetic improvement programme for the development of varieties at JNLVV, Jabalpur, M.P.

5.2.3.5 Smt. Beni Bai Soriyana, Lar, Madhya Pradesh – 472001

Smt Beni Baiis conserving and maintaining "Kutki", a local variety in Small Millet since long time. In this variety, donor gene has been identified and utilized in the genetic improvement programme for the development of varieties at JNKVV, Jabalpur, M.P.

5.2.3.6 Shri Dwarka Prasad Vishwakarma, Kanti, Heeranagar, Tikamgarh, Madhya Pradesh – 472001

Sh Dwarka Prasad Viswakarma is maintaining and conserving "Fikara", a local variety in Small Millet since long time. In this variety, donor gene has been identified and utilized in the genetic improvement programme for the development of varieties at JNKVV, Jabalpur, M.P. The grains are sweet and the variety is used both for fodder and grain purposes.

5.2.3.7 Shri Swami Pal, Jatara, Nadiya, Bijrawan, Tikamgarh, Madhya Pradesh- 472001

Sh Swami Palis maintaining and conserving sawan Paddy (variety Local Sathiya) since long time. In this variety, donor gene has been identified and utilized in the genetic improvement programme for the development of varieties at JNKVV, Jabalpur, M.P. It is a short duration variety and used for grains.

5.2.3.8 Shri BhagirathYadav Kanti, Heeranagar, Tikamgarh, Madhya Pradesh – 472001

Sh Bhagirath Yadav is maintaining and conserving Small millet variety called **Swan** since long time. In this variety, donor gene has been identified and utilized in the genetic improvement programme for the development of varieties at JNKVV, Jabalpur, M.P. It is a short duration variety and used for grains.

5.2.3.9 Smt. Rama Bai Tikamgarh, Soriyana, Lar, Madhya Pradesh - 472001

Sh Rama Baiis maintaining and conserving Small millet variety called **Swan** since long time. In this variety, donor gene has been identified and utilized in the genetic improvement programme for the development of varieties at JNKVV, Jabalpur, M.P.

5.2.3.10 Shri Amar Chandra Prajapati Jatara, Nadiya, Bijrawan, Tikamgarh, Madhya Pradesh- 472001

Sh Amar Chand Prajapatiis maintaining and conserving Small millet variety called **Fikara** since long time. In this variety, donor gene has been identified and utilized in the genetic improvement programme for the development of varieties at JNKVV, Jabalpur, M.P. It is a short duration variety and used for both fodder and grain purposes.

5.2.3.11 Shri Lakhan Lal Ahirmar Jatara, Nadiya, Bijrawan, Tikamgarh, Madhya Pradesh- 472001

Sh Lakhan Lal Ahirwar is conserving “China”, a local variety in Small Millet since long time. In this variety, donor gene has been identified and utilized in the genetic improvement programme for the development of varieties at JNKVV, Jabalpur, M.P. It is a short duration variety used for grains.

5.2.3.12 Shri Pumma Khushwaha Jatara, Nadiya, Bijrawan, Tikamgarh, Madhya Pradesh- 472001

Smt. Pumma Khushwaha is conserving “Kodon”, a local variety in Small Millet since long time. In this variety, donor gene has been identified and utilized in the genetic improvement programme for the development of varieties at JNKVV, Jabalpur, M.P. It is a short duration variety used for grains.

5.2.3.13 Shri Mahendra Singh Yadav Barath, Bangaon, Chhattarpur, Madhya Pradesh - 471201

Sh Mahendra Singh Yadavis conserving “Sathiya”, a local variety in Rice since long time. In this variety, donor gene has been identified and utilized in the genetic improvement programme for the development of varieties at JNKVV, Jabalpur, M.P.

5.2.3.14 Shri I.P. Singh Yadav Nowgong, Barath, Bangaon, Chhattarpur, Madhya Pradesh - 471201

Sh I P Singh Yadavis conserving “Kodon”, a local variety in Small Millet since long time. In this variety, donor gene has been identified and utilized in the genetic improvement programme for the development of varieties at JNKVV, Jabalpur, M.P.

5.2.3.15 Shri Shiv Prasad Rajput Nowgong, Barath, Bangaon , Chhattarpur , Madhya Pradesh – 471201

Sh Shiv Prasad Rajputis conserving a variety “Local” in Rice since long time. In this variety, donor gene has been identified and utilized in the genetic improvement programme for the development of varieties at JNKVV, Jabalpur, M.P.

5.2.3.16 Shri Har sevak Patel Sukva, Chhattarpur Madhya Pradesh - 471201

Sh Har Sevak Patel is conserving a local variety called Kodon in Small Millet since long time. In this variety, donor gene has been identified and utilized in the genetic improvement programme for the development of varieties at JNKVV, Jabalpur, M.P.

5.2.3.17 Shri Dharam Das Rajput Nowgong, Manpura, Lugasi, Chhattarpur Madhya Pradesh - 471201

Sh Dharam Das Rajput is conserving a Small Millet (Kutki) variety Lathara since long time. In this variety, donor gene has been identified and utilized in the genetic improvement programme for the development of varieties at JNKVV, Jabalpur, M.P.

5.2.3.18 Shri Rangi Rajput Chhattarpur, Nowgong, Manpura, Lugasi, Chhattarpur Madhya Pradesh - 471201

Sh Rangi Rajput, Manpur is conserving a Kodo Millet variety “Kudva” since long time. In this variety, donor gene has been identified and utilized in the genetic improvement programme for the development of varieties at JNKVV, Jabalpur, M.P.

5.2.3.19 Shri V.S. Siddeswara Reddy Challakere, Viddapanakunte, M. S.Halli, Chitadurga, Karnataka – 577522

Sh V S Siddeshwara Reddyis a progressive grower and conserving a Ragi/Finger Millet variety "Uduru Mallige"; Navane variety "Rudra Dante"; Korle Variety "Andu Korle". The farmer has shared his Ragi/Finger Millet variety which was evaluated for crop improvement programme at PC Unit, AICRP Small Millets, UAS, GKVK, Bengaluru.

5.2.3.20 Shri Shiv Kumar Chandravanshi Karvadha, Koko Kabir Dham, Chhattisgarh - 491336

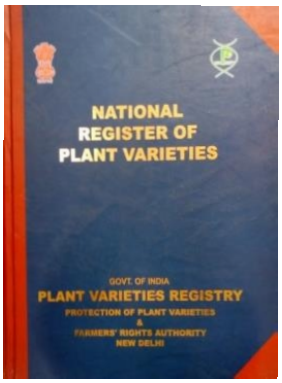
Sh Shiv Kumar Chandrabanshi is a progressive grower and conserver of local varieties (SKT 1 to SKT 40) in Brinjal and shared his varieties with Pd. Kishori Lal Shukla Horticultural College (Indira Gandhi Krishi Viswa Vidyalaya), Rajnandagaon that are being used for development of new varieties. His variety Madhu Baigan is being used as donor of genes in development of varieties at IGKVV, Raipur.

CHAPTER 6: PLANT VARIETY JOURNAL OF INDIA, NATIONAL REGISTER OF PLANT VARIETIES AND PUBLICATIONS OF THE AUTHORITY

6.1 Plant Variety Journal of India

In accordance with Rule 2(g) of PPV&FR Rules, 2003 the Authority publishes its official journal "*Plant Variety Journal of India*" (PVJ) as a monthly bilingual (Hindi & English) publication and made available to public on the first working day of each month on its official website. This Journal has the equivalent status of a Gazette under the Regulations, 2006. The contents of Journal includes official and public notices, Gazette notifications, passport data of plant varieties along with photographs, DUS test guidelines of different crop species, details of certificate of registration and other related matters.

6.2 National Register of Plant Varieties



The PPV&FR Authority, in compliance with section 13 of the PPV&FR Act, 2001, has opened the National Register of Plant Varieties at the Headquarters of the Plant Varieties Registry. It contains complete details of the names of all the registered plant varieties along with the names and addresses of the respective breeders, denomination, specifications, salient features etc. During the period of reporting, 619 varieties including 76 new varieties, 182 extant varieties including Extant VCK and 361 belonging to Farmers' Varieties which have been registered under the Act.

6.3 Publications of the Authority

Authority is regularly published in bilingual mode(Hindi as well as in English), the brochures on PPV&FR Act, 2001 and Farmers' Rights, Frequently Asked Questions(FAQ) and distributed in several Farmers fair organized by the different institute of ICAR, State Agricultural Universities and by the Ministry of Agriculture and Farmers Welfare, meetings, training-cum- awareness programmes, workshops etc. Compendium of registered varieties, posters, annual report, annual accounts and other publications were prepared and published by the Authority in Hindi language also. The Authority maintains its website in bilingual mode. DUS test guidelines were published regularly by the Authority in both the languages. During the year DUS test guidelines of 10 crops species have been published and sent to Department of Agriculture, Co-operation and Farmers Welfare for notification. These crop species represent Dry fruits and Forestry crops. The letters and official communications received in Hindi were responded in Hindi. The officers of the Authority also delivered their lectures in Hindi and English as per the requirement of the audience / occasion.

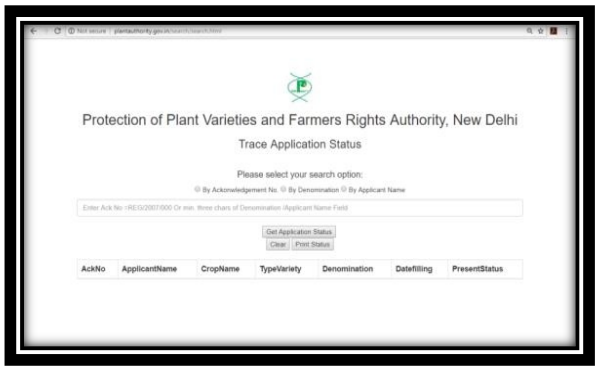
CHAPTER 7: DEVELOPMENT OF DATABASE, IINDUS, NORV, WEBSITE AND INFORMATION AND COMMUNICATION TECHNOLOGY (ICT)

Website:

The official website (*www.plantauthority.gov.in*) of the *Protection of Plant Varieties and Farmers' Rights Authority* (PPV&FRA) was shifted from National Informatics Centre (NIC) shared server to NIC cloud server. It is essential for all government departments and related offices to shift their websites and web applications to NIC cloud server. The feature of cloud server is scalability/ elasticity, more performance, improved disaster recovery system and flexible billing over existing shared server. The website shifting work has been done by Authority officials with the assistance of NIC coordinator in time bound manner.

The website is maintained in bilingual (Hindi and English).Improved crop DUS guidelines web page is introduced in Hindi version of Authority website also. In this page table is divided into crop group, crop name followed by botanical name along with crop DUS guideline in downloadable format (in pdf). Total 147 crop species have been listed. A new FAQ web page is introduced with collapse and expands all features using java script. Other web pages designed are Plant Genome Saviour Community Award, Reward & Recognition. RTI Page, Plant Variety Registry Related Information Webpage, Annual report and annual account web page, about the employees of the authority, list of registration open for 148 crop species under the category of New / Extant/ Farmer Variety and important Gazette notifications webpage etc.

Online Tracking of Applications Status:



The Authority has developed the online tracking system of applications onthe website. It is a dynamic mode search page in which applicant can search its application status either their Acknowledgement number or by denomination or Name of applicant. It is very feasible to view and print the status report. This web page is compatible with all web browsers.

Information and Communication Technology (ICT)

The Authority also gives a copy of tenders on Central Public procurement portal (https://eprocure.gov.in/eprocure/app), purchase for Authority is taken from GeM (Government E-Marketplace), update General Pool Residential Accommodation (http://gpra.nic.in/gpra), quarterly reports of RTIs (http://dsscic.nic.in/users/pn-login), New Pension System Contributions Accounting System (https://npscan-cra.com/CRA/), Representation of Reserved Categories in Posts and Services in Govt. of India Monitoring System (http://www.rrcps.nic.in/). The Authority is also trying to fulfil the concept of national e-governance and has taken initiatives in this regard.

Online Filing of Applications for Registration:

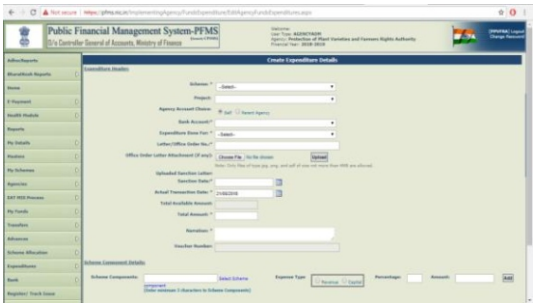
The Authority initiated registration of plant varieties in 2007 with 12 crop species which has been extended to 147 crop species at present. Authority is accepting the applications filed by the applicants along with prescribed fee (fee deposited in the form of demand drafts) either by hand or by postal services. Proposal for development of online application submission and payment processing for registration process of plant varieties which has been submitted to DAC&FW through NIC will facilitate/permit the applicants to file their applications online in the Authority and also to pay the prescribed fee through 'Payment Gateway' which may be either through Debit card/Credit card/Net Banking.

E-National Register:

The database of all the registered varieties in the PPV&FR Authority is maintained in a Register known as National Register of Plant Varieties. The same database is also maintained in digital form in E-national register. Through this software one can search data by registration number, crop name, denomination and can generate report. There are many important entries like Registration No., Nationality of Breeder, Date of grant of registration certificate, denomination as granted, date of gazette notification, essential characters making the variety distinct etc. in this software.

Public Financial Management System (PFMS)

The Authority has implemented PFMS, Digital Payment Systems and e-payment like RTGS/NEFT. The Authority discourages off-line payment system like deposition of cash in the different accounts of Authority. The Authority has been shifted on e-payment systems like PFMS and other digital payments.



CHAPTER 8: ADMINISTRATIVE MATTERS

8.1 Legal Cell

The Legal Cell of the Authority has successfully defended all cases filed against the Authority. Further in case of quasi-judicial proceedings before the Registry and Authority, legal inputs were rendered and daily order sheets were dispatched to the parties promptly. During the reporting period, none of the orders passed by Authority or Registrar were set-aside. The Authority approached the Hon'ble Supreme Court of India vide SLP Nos. **19305-19306/2017**challenging the order dated 02.12.2016 of Hon'ble Delhi High Court in W.P. (C) No.250/2009 striking down Section 24 (5) of PPV&FR Act, 2001. The Hon'ble Supreme Court of India was pleased to grant interim stay against the said order of the Hon'ble Delhi High Court.

During the reporting period, 30 cases were pending against the Authority and two cases were disposed in favour of the Authority during the reporting period. The Hon'ble Delhi High Court in R.R. Pradhan –Vs- UOI & Ors., by order dated 18.12.2017 in WP (C) No. 1221/2017 dismissed the writ petition in favour of the Authority. The details of forum and number of cases pending for adjudication are given below:

Central Administrative Tribunal	High Courts	Supreme Court
3	21	5

The following Gazette Notifications were published in the year 2016–17:

- Gazette Notification **S.O. 1536(E)** dated **May 12, 2017** regarding notification on the 140 crop species (new, extant and farmers' varieties) for the purpose of registration of varieties.
- Gazette Notification **S.O. 3406(E)** dated **October 23, 2017** regarding notification on the 2 crop species (not being extant varieties and farmers' varieties) Cashew, Arecanut for the purpose of registration of varieties.
- Gazette Notification **S.O. 133(E)** dated **January 9, 2018** regarding notification on the 5 crop species (not being extant varieties and farmers' varieties) Chironji, Tamarind, Sweet Potato, Cassava, Poplar for the purpose of registration of varieties.
- Gazette Notification No. **S.O. 908 (E)** dated March **01, 2018** on "Gazette notification for appointment of Dr. Kumble Vinod Prabhu, Chairperson, PPV&FR Authority.

8.2 Rights of Information (RTI)

Under the RTI Act, 2005, the Protection of Plant Varieties & Farmers' Rights Authority (PPV&FRA) has nominated officers as Central Public Information Officer (CPIO) and Assistant Central Public Information Officer (ACPIO)and first Appellate Authority for furnishing information to the concerned applicants. The details of the designated officers are available on website of the Authority under the menu heading RTI. Compliance of provision contained under section 25(2) of RTI Act, 2005 for submission of information to Chief Information Commissioner (CIC) are being done on a regular basis. During the reporting period, the Authority received 35 applications either directly from the applicant or transfer from other departments seeking information under RTI Act, 2005. The information sought was made available within the stipulated period. There are no applications pending before the first Appellate Authority or Chief Information Commissioner (CIC).

The status of the applications received by the authority is uploaded on its website. The quarterly status of the applications is available on the website of the authority and on the Chief Information Commissioner (CIC) website with full details including receipt of fees too.

8.3 Human Resources

8.3.1 Recruitments made during the period from 1st April, 2017 to 31st March, 2018 in the PPV&FRA

- Dr. R.R. Hanchinal, Chairperson, PPV&FR Authority relinquished the charge of Chairperson w.e.f. **31.05.2017 (A.N).**
- Dr. B. Rajendra, Joint Secretary (Seeds), Ministry of Agriculture & Farmers' Welfare, DoAC&FW, Krishi Bhavan. N.D. 110001 assumed additional charge as Chairperson, PPV&FR Authority w.e.f. **13.06.2017** and relinquished the charge of Chairperson w.e.f. **20.01.2018.**
- Shri R.S. Sengar, Assistant Director, Coconut Development Board, MDIC, Delhi was appointed as Deputy Registrar (on deputation) w.e.f**. 04.08.2017 (F.N)**
- Dr. T.K. Nagarathna, Prof. Of Crop Physiology, AICRP on Subflower, UAS, GKVK, Bangaluru was appointed as Registrar (on deputation) w.e.f. **16.08.2017 (F.N)**
- Dr. S.A. Desai, Prof. (GPB) & Sorghum Breeder, Regional Agril. Regional Station, Vijaypur UAS, Dharwad was appointed as Registrar (on deputation) w.e.f. **06.09.2017 (F.N)**
- Dr. S.B. Gurav, Former Prof. Of Horticulture, MPKV, Rahuri was appointed as Deputy Registrar (on contract basis) w.e.f. **03.10.2017(F.N)** at PPV&FRA Branch office, Pune (M.S)
- Dr. K.G. Parameshwarappa, Former Principal Scientist & In-charge, Associate Director of Research, UAS, Dharwad (Karnataka) was appointed as Deputy Registrar (on contract basis) w.e.f**. 06.10.2017 (F.N)** at PPV&FRA Branch office, Shivamogga
- Dr. Akhter Hussain Khan, Former Addl. Principal Chief Conservator of Forest, Office of the Principal Conservator, Guwahati, Assam, was appointed as Deputy Registrar (on contract basis) w.e.f. **12.10.2017 (F.N)** at PPV&FRA Branch office, Guwahati
- Dr. Satish Chander Sharma, Former Associate Director of Research, H.P. Agril. University (CSKHPKV), Palmapur (H.P) was appointed as Deputy Registrar (on contract basis) w.e.f. **27.10.2017 (F.N)** at PPV&FRA Branch office, Palampur
- Dr. Ritu Jain, Scientist, Division of Floriculture, ICAR-IARI was repatriated to her parent department w.e.f. **10.11.2017(A.N)** on promotion as Sr. Scientist
- Dr. K.V. Prabhu, Joint Director (Research), ICAR –Indian Agricultural Research Institute, Pusa Campus, New Delhi -110012, was appointed as Chairperson, PPV&FR Authority w.e.f. **06.02.2018 (A.N)**

8.3 2. Human Resources Training

8.3.2.1 Sh D S Raj Ganesh, Legal Advisor and Sh Nitesh Kr Verma, Computer Assistant, attended 2 days training on GeM (Govt e-Marketplace) at National Institute of Financial Management, Faridabad, during Sep 18-19, 2017

8.3.2.2 Orientation cum Training programme for newly recruited Deputy Registrar(s) of the branch offices were organized during Nov 13-14, 2018 wherein all the Deputy Registrar(s) were briefed about manner and method of setting branch offices, mandated activities to be carried out at respective branch offices under the jurisdiction, important provisions of the Act, Farmers' rights, financial management, DUS testing and administrative issues

CHAPTER 9: GENERAL ACTIVITIES OF THE AUTHORITY

9.1 Progress in use of Hindi

PPV&FRA celebrated the Hindi Pakhwada (promotion of Hindi as official language) starting during Sept 14-21 where all officers and staff employees including Registrar General took participation. Dr Ritu Jain, Joint Registrar and Dr D S Pilania, Technical Asistant organized several programmes: recitation, writing of short précis, quiz/debate. Employees from all sections participated and a committee of 3 judges were made for these competition.

9.1.1 Workshop on Hindi at IASRI, New Delhi

Authority organized one day Hindi workshop on 13th Feb, 2018 at Dr Daroga Singh Auditorium, ICAR-IASRI, Library Avenue, New Delhi. It was inaugurated by Dr K V Prabhu, Chairperson, PPV&FRA in presence of Dr R C Agrawal, RG; Dr L M Bhar, Director, IASRI; Dr S K Singh, ICAR-DKMA and Dr P R Rao, ICAR-ASRB. In his opening address, Dr Prabhu conveyed his sincere gratitude for the participants and informed that use of Hindi in official work can be promoted and noting/drafting can be made even in simple languages.

Dr R C Agrawal, Registrar General, has discussed about several beneficial provisions, e.g. registration of farmers' varieties, PGSC Award and Community recognition has enabled a large no of traditional farming communities to realize farmers' rights. He urged before the participants to mentor farmers/communities who are conserving agro-biodiversity or developing imporved varieties for PGSC Award.

Sh P R Rao, ASRB-ICAR, suggested that use of simple words and processes shall promote use of hindi in official work and in cases where exact translation is not available, officers/employees can also write transliterary words in hindi. Sh R S Sengar, Hindi Officer proposed the vote of thanks.

In the workshop there are 75 participants from different institutes ICAR and other organizations has participated. During workshop there were several presentations and lectures were delivered by the different speakers. Almost all are very interested to use Hindi language in daily work and now we can made Hindi language very easy for common peoples and more user friendly language.

Shri P.R.Rao, emphasized that the software Unicode can be use in the office and all official documents should be in Hindi. As per Directions from Rajbhasha Vibhag, Govt. of India oficial website should be in bilingual. At the end all members are agree to use more Hindi language in our daily work.

9.2 Vigilance awareness week

The PPV&FR Authority celebrated the vigilance Awareness week, the staff of the Authority joined together in pledging their support to make corruption free India and being vigilant as part of the Vigilance Awareness Week (30 November–04 October, 2017). An essay writing competition (Bilingual) was also organized as part of the activity during the vigilance week.

Report on expeditious disposal of Pending disciplinary cases against Government Servants.

- During the year 2017-18 an enquiry was conducted by enquiry officer against Shri R. R. Pradhan, Legal Advisor the enquiry continued during the year 2018-19.

9.3 PPV&FR Authority Meetings

During 2017-18, two meetings of PPV&FRA were held and salient details are given as below:

9.3.1 Authority held its 27th meeting at IGH, NASC complex on 31st May, 2017 and deliberated on the following:

- Establishment of 3 more branch offices vide Gazette Notification No.182 dated 19.01.2017 at Palampur, Shivamogga and Pune with their respective jurisdiction
- Approval of DUS test guidelines under Rule 29(9) of PPV&FRA Rules, 2003, fixation of DUS test fee and fixation of time limit for registration of extant varieties for Cashew and Arecanut
- Approval of the proceedings of the Standing Committee meeting held on Apr 24, 2017
- Issue of NOC from technology provider for registration of plant varieties
- Proposal for Re-framing of regulations for fixing breeder's expense for depositing seeds or propagating material to National Gene Bank of PPV&FR Authority on registration.
- Adoption of Modified Assured Career Progression Scheme for the employees of PPV&FR Authority

9.3.2 Authority held its 28th meeting at IGH, NASC Complex on 22nd Nov, 2017 and some important issues discussed are as follows:

- Consolidated proposal for amendment in PPV&FR Act, 2001, PPV&FR Rules, 2003 and PPV&FR Regulations, 2006.
- Approval of DUS test guidelines under Rule 29(9) of PPV&FR Rules, 2003; fixation of DUS test fee and On site test fee for Chironji, Tamarind, Sweet Potato, Cassava, Poplar and fixation of time limts for registration of extant varieties in these crops
- The time limit for registration of extant varieties of fourteen crop species of ENV and VCK was extended by the Authority under Rule 22 (2) of PPV&FR Rules, 2003 upto 27.07.2020.
- Fixation of DUS Fee for Cashewnut and arecanut
- Approval of Annual Report and Annual Accounts of the Authority for 2016-17
- Dispensing of printing of *Plant Variety Journal of India*

9.4 Participation of Chairperson in various meetings and discussions during 2017-18:

Date	Description
1st April, 2017	Dr R R Hanchinal, Chairperson, visited IIHR, Bangalore to participate in the Institute Research committee meeting and talked on importance of IPR in public bred varieties and also visited DUS test plots of ornamental & vegetable crops. Dr. R.R. Hanchinal, Chairperson was nominated by His Excellency, Governor of Karnataka as a member of the scrutiny committee for Awarding D.Sc (*honoris causa*) by UAS Dharwad The meeting was organized at Jain University, Bangalore.
5th April, 2017	Dr R R Hanchinal, Chairperson attended ISPGR Award Function & 2nd Dr A.B. Joshi Memorial Lecture at AP Shinde Symposium Hall, NASC Complex, Pusa Campus, New Delhi. Chairperson was bestowed with Honorary fellowship of ISPGR.
9th -10th April	Dr R R Hanchinal, Chairperson attended awareness program cum filing the applications of Noni Crops at Chennai.
11th April, 2017	Dr R R Hanchinal, Chairperson attended a meeting to discuss arrangements fo PGSC Awards 2014-2015 at ICAR, Patna

14th April, 2017	Dr R R Hanchinal, Chairperson, received 6th M.S. Swaminathan Award at FAPCCI Bhavan, Lakhidikapul, Hyderabad. He delivered a talk to the gathering on "*The Indian Seed Industry: Achievements and Way Forward*"
19th April, 2017	Dr R R Hanchinal, Chairperson and other staff of PPV&FRA attended PGSC awards, rewards and recognition function for 2014-15 on 19th April, 2017 at Zila School Ground, Motihari, East Champaran, Bihar
21st - 22nd April, 2017	Dr. R.R. Hanchinal, Chairperson attended Interface Meeting on "*Decades of Protection of Plant Varieties and Farmers Rights Acts – Initiatives by PPV&FRA*" at Bhubaneswar and visited DUS centre at National Rice Research Institute (NRRI) Cuttack
24th April, 2017	Dr. R.R. Hanchinal, Chairperson attended meeting of the Standing Committee of PPV&FR Authority held on 24th April, 2017 at Shri Purushotham Rao Krishi Sanshodhana, Pratishtan, Thirthahalli, Karnataka to discuss various issues related to Authority
27th - 28th April, 2017	Dr. R.R. Hanchinal, Chairperson attended the Task Force meeting for Chironji and Tamarind at PPV&FR Authority, New Delhi
3rd May, 2017	Dr. R.R. Hanchinal, Chairperson attended the inauguration of PPV&FRA Branch Office at Shivamogga.
6th -13th May, 2017	Dr. R.R. Hanchinal, Chairperson attended meetings in Germany & The Netherlands to explore and discuss steps for co-operation in the field of plant variety protection and discussed about the issue of convention country and other related issues.
20th May, 2017	Dr. R.R. Hanchinal, Chairperson attended the inauguration of PPV&FRA Branch Office at College of Agriculture, MPKV, Pune.
26th May, 2017	Dr. R.R. Hanchinal, Chairperson attended as a member for selection committee meeting at University of Agricultural Sciences, GKVK, Bangalore
30th May, 2017	Dr. R.R. Hanchinal, Chairperson attended inauguration of PPV&FRA Branch Office at CSK – Himachal Pradesh Agricultural University, Palampur.
31st May, 2017	27th Authority Meeting was conducted at Delhi. The agenda related to technical legal and progress of registry was discussed during the meeting.
19th July, 2017	Meeting of Plant Authority Bhawan at Room No. 297 D, Krishi Bhawan, New Delhi was held under the under the Chairmanship of Chairperson, PPV&FR Authority.
8th August, 2017	Shri Sachin Ombase - IAS (Maharashtra Cadre) 2015 Batch and Shri Jogendar Singh – IAS (U.P. Cadre) 2015 Batch were briefed by Chairperson and Registrar General about the various activities of PPV&FR Authority
17th Nov, 2017	Dr B Rajender, IAS and Chairperson, participated in the Regional Workshop of Farmers' Rights and Agro-biodiversity Exhibition at ICAR-NRRI, Cuttack
22nd November, 2017	28th Authority meeting was conducted at Board Room IGH, New Delhi. The agenda related to technical legal and progress of registry was discussed during the meeting.
14th Dec, 2017	Dr B Rajender, IAS and Chairperson, participated in the Regional Workshop of Farmers' Rights and Agro-biodiversity Exhibition at Assam Agricultural University, Kahikuchi Campus, Guwahati
15th Jan, 2018	Dr B Rajender, IAS and Chairperson, participated in the Regional Workshop of Farmers' Rights and Agro-biodiversity Exhibition at ICAR-Indian Institute of Sugarcane Research, Lucknow and also inaugurated the DUS Review meeting
13th February, 2018	राजभाषा क्रियान्वयन एवं पौधा किस्म अधिनियम, 2001 एवं कृषक अधिकारों पर कार्यशालाष पर संक्षिप्त व्याख्यान डॉ. दरोगा सिंह सभागार, संगणक भवन, भा.कृ.अनु.प.–भारतीय कृषि सांख्यिकी अनुसंधान संस्थान,

	पूसा, नई दिल्ली मे आयोजित किया गया, जिसमें अध्यक्ष, महा–पंजीकार और समस्त अधिकारियों / कर्मचारियों ने भाग लिया।
22-23rd February, 2018	Dr. K.V. Prabhu, Chairperson along with Registrar General and other staff of PPV&FRA attended "*International workshop on Indo-EU collaboration in Seed Sector development and PVP*" at Hyatt Regency, New Delhi.
23rd February, 2018	Dr. K.V. Prabhu, Chairperson along with Registrar and Dy. Registrar attended National Seminar on Farmers' Rights and Agro-biodiversity Exhibition at Indian Institute of Vegetable Research, Varanasi.
26th - 27th February, 2018	Dr. K.V. Prabhu, Chairperson, Registrar General with other staff of PPV&FRA attended "*National Seminar on Farmers' Rights and Agro-biodiversity Exhibition*" at Deendayal Research Institute, Chitrakoot, Satna, Madhay Pradesh.
1st March, 2018	Dr. K.V. Prabhu, Chairperson attended meeting with Competition Commission of India regarding the merger of Monsanto Company with Bayer AG at The Hindustan Times House, 18-20, KG Marg, New Delhi.
8th March, 2018	Dr. K.V. Prabhu, Chairperson, Registrar General and other staff attended Task Force meeting for development of descriptors and DUS testing guidelines for indigenous forest tree species (*Tectona grandis* and *Melia dubia*) at PPV&FRA, New Delhi.
12th March, 2018	Dr. K.V. Prabhu, Chairperson delivered a lecture on "*Empowering knowledge on protection of plant varieties, IPRs and PGR related issues in cereals*" at ICAR-Indian Institute of Wheat & Barley Research, Karnal.
13th March, 2018	Dr. K.V. Prabhu, Chairperson and Registrar General attended a lecture in the honour of Padma Bhushan Dr. Dilbagh Singh Athwal on the topic "*Preservation and use of biodiversity for human welfare*" at Dr. BP Pal Auditorium, ICAR-NBPGR, New Delhi
14th March, 2018	Dr. K.V. Prabhu, Chairperson attended training-cum-awareness programme on PPV&FRA at Indira Gandhi Krishi Vishwavidyalaya, Raipur
16-19th March, 2018	Dr. K.V. Prabhu, Chairperson along with all staff of PPV&FRA attended Krishi Unnati Mela-2018 inaugurated by Hon'ble Prime Minister of India, Sh Narendra Modi. The exhibition was also visited by Shri Radha Mohan Singh, Union Agriculture Minister of India.
19th March, 2018	Dr. K.V. Prabhu, Chairperson and Registrar General attended Project Review Committee meeting for progress of the Plant Authority Bhawan at Conference room NASC, New Delhi.
21st March, 2018	Dr. K.V. Prabhu, Chairperson participated in the *Roundtable on Innovations for Sustainable Agriculture with special focus on Bamboo and herbal medicine, aroma, fragrance and flavours* at Rashtrapati Bhavan, New Delhi.
22nd March, 2018	Dr. K.V. Prabhu, Chairperson attended training-cum-awareness programme on Farmers' Rights at Sipani Krishi Anusandhan Farm, Mandsaur, Madhya Pradesh.
27th March, 2018	Dr. K.V. Prabhu, Chairperson attended Regional Workshop and Plant Diversity Exhibition at Navsari Agricultural University, Navsari Gujarat.
28th March, 2018	Dr. K.V. Prabhu, Chairperson attended 4th *Strategic Dialogue on India and Africa: Deepening the Security Engagement* at IDSA Auditorium, New Delhi.

9.5 Participation of Registrar General in various meetings and discussions:

Date	Tour
24th April, 2017	Attended first meeting of the Standing Committee of PPV&FR Authority held on 24thApril, 2017 at 11:00 a.m. in Shri Purushotham Rao Krishi Sanshodhana, Pratishtan, Thirthahalli, Karnataka to discuss various issues related to Authority.
3rd May, 2017	Attended inauguration of PPV&FRA Branch Office at Shivamogga.
6th -13th May, 2017	Study visit to Germany & Netherland to explore and discuss steps in cooperation in the field of plant variety protection and discuss about the issue of convention country and other related issues.
20thMay, 2017	Co-ordinatedthe inauguration of PPV&FRA Branch Office at College of Agriculture, MPKV, Pune.
30thMay, 2017	Attended inauguration of PPV&FRA Branch Office at CSK – Himachal Pradesh Agricultural University, Palampur.
6th to 7th June, 2017	Co-ordinated 2 days workshop on Principles of DUS testing of Apple Varieties according to UPOV System was organized at Regional Horticulture Research and Training Station (YSPUHF), Mashobra, Shimla under the Indo-German Bilateral Cooperation on seed Sector.
6th July, 2017	Delivered lecture about various provisions of PPV&FR Act during a workshop on "Capacity Building workshop/training program on Intellectual Property Right for South Africa Delegation" organized by National Innovation Foundation (NIF) at Indian Institute of Management, Ahmedabad.
20th July, 2017	Attended First Project Steering Committee (PSC) of Indo-German project on Seed Development at Hyderabad
2-3rd August, 2017	Delivered an invited lecture during the workshop on Re-imaging the governance of Genetic Resources and Intellectual property for Agriculture and Food Security in Asia at Kathmandu, Nepal.
16th to 17th August, 2017	Delivered a lead lecture on PPV&FR Act in the training programme on Agricultural Research with relation to IPR at C.S. Azad University of Agriculture & Technology, Kanpur
21st August, 2017	Delivered a lead lecture in the area of Plant Protection and Farmer's Right at Indian Society of Genetics, Biotechnology Research and Development, Bichpuri, Agra
30th August, 2017	Delivered a Lead/Expert lecture on Registration of Plant varieties under PPV&FRA at BabasahebBhimraoAmbedkar University, Lucknow.
15th September, 2017	Reviewed project entitled "Identification, Collection, Documentation and Registration of Maize, Millets, Pulses and Vegetables of Farmers Varieties at Sam Higgin Bottom University of Agriculture, Technology & Sciences (SHUATS), Allahabad University. Also inaugurated Community Seed Bank at Allahabad.
22nd September 2017	Organized an exhibition of Krishi UnnatiMela at DRI, Mathura. The Mela was inaugurated by Sh. Radha Mohan Singh, Hon'ble Minister of Agriculture.
17th October, 2017	Organized a "Farmers Awareness and Training Programme" at ICAR - Indian Institute of Soil and Water Conservation, Chhaleser, Agra.
22rd to 27th Oct. 2017	Attended 74th session of the Administrative & legal committee and 51stordinary Session of the Council in the headquarters of UPOV, Geneva, Switzerland. Also attended meeting with Federal Plant Variety Office at Geneva on 27th October, 2017 to review the progress of the Indo-German Bilateral Co-operation in Seed Sector.
17th November 2017	Organized Regional Workshop on Farmers Rights and Agro-Biodiversity Exhibition at NRRI, Cuttack.
25th November, 2017	Visited IIPR, ATTARI and CSAUAT, Kanpur for review and discussion regarding registration of new varieties and DUS testing.

6th December, 2017	Attended "District Agriculture Summit" at Lakhimpur, Lucknow and made a presentation about Farmers' Rights.
14th December, 2017	Organized Regional Workshop on Farmers Rights and Agro-Biodiversity Exhibition at Kahikuchi Campus of Assam Agricultural University, Guwahati
19th December, 2017	Registrar General attended 1st Meeting of Award Selection Committee for India Biodiversity Awards 2018 at NBA, Chennai.
4-5th January, 2018	Reviewed the progress for the preparation of the Regional workshop on Agro-Biodiversity Exhibition and DUS Review meeting at CISH & IISR, Lucknow.
15th to 17th January, 2018	Organized DUS Review meeting and Agro-Biodiversity Exhibition at CISH & IISR, Lucknow.
19thJanuary, 2018	Delivered a lecture about PPV&FR Act during the Fifth annual workshop on "Rethinking Intellectual Property Rights" on the theme IPR, Access in seeds and farmers Rights at Cochin University of Science and Technology, Cochin. It was attended by faculty and about 30 students of L.L.B. and Ph.D.
22nd January, 2018	Attended as Jury Member the 2nd Meeting of Award Selection Committee for India Biodiversity Awards 2018 at NBA, Chennai.
27th January, 2018	Organized Regional Workshop and Agro-biodiversity Exhibition" on 27th January, 2018 at PJTSAU, Hyderabad.
11th February, 2018	Attened "Pt. DeenDayalUpadhyay Statue Unveiling Ceremony and DeenDayal Hostel Inauguration Ceremony" at PanditDeenDayal Upadhyaya PashuChikitsa Vigyan Vishwavidyalaya, Mathura which was inaugurated by Hon'ble Governor of Uttar Pradesh and Chief Minister of Uttar Pradesh
18th February, 2018	Visited the site of Watershed Organization Trust Pune regarding physical verification of India Biodiversity Awards of NBA.
22-23 February, 2018	Convenedthe International workshop of "Indo-EU collaboration in Seed Sector Development and PVP" which was jointly organized by PPV&FRA, Department of Industrial Policy & Promotion, Community Plant Variety Office and the EUIPO (European Union) with the support of The German Federal Ministry of Food and Agriculture and Ministry of Agriculture, Nature and Food Quality, The Netherlands at Hyatt Regency, New Delhi
23rd February, 2018	Organized National Seminar on Farmers' Rights and Agro-biodiversity Exhibition at Indian Institute of Vegetable Research, Varanasi.
26th 27th February, 2018	Organized "National Seminar on Farmers' Rights and Agro-biodiversity Exhibition" at Deendayal Research Institute, Chitrakoot, Satna, Madhya Pradesh.

9.6 Foreign Deputation

1. **Participation in the 74th session of Administrative and Legal Committee (CAJ) at Geneva, Switzerland (October 23-27 2017)**

   Shri Kumar Sanjay Krishna, Additional Secretary and Financial Advisor, Government of India, Department of Agriculture, Cooperation and Farmers Welfare, Ministry of Agriculture and Farmers Welfare, New Delhi and Dr. R.C.Agrawal, Registrar General, PPV&FRA attended the UPOV meeting.

As a follow up of the meeting held between Indian delegation with Mr. Peter Button, Vice Secretary General, UPOV at Roelofarendsveen in The Netherlands during May 2017 regarding matters in relation to the Indian PVR legislation and the UPOV convention, a meeting at UPOV Headquarters was organized on 26 October, 2017. Some of the points discussed during the meeting included

- On the point of discussion of consideration of Convention Country as per PPVFR Act, it was clarified that UPOV has no legal restriction if any Member Country of UPOV agrees for becoming Convention Country with India on bilateral basis
- UPOV agreed that India shall be involved in the TWGs (Technical Working Groups) of UPOV. This shall help India for detailed interactions with technical experts in the working groups.
- It was agreed that a workshop may be fixed during second half of the February, 2018 which may be attended by UPOV representativesalongwith German experts, Dutch Experts, VPVO and Seed organizations.
- UPOV informed that there is a provision of Distant Learning about UPOV system without any fee for Government personnel. The UPOV can extend this facility free of cost to interested Indian participants.
- The UPOV welcomed the participation of Indian delegation in the CAJ and Council and assured that it shall further help UPOV in closely looking at Indian Law related to PVP.

On 27 October, 2017 a meeting of Indian delegation was also organized with the representatives of Germany, The Netherlands, CPVO and Seed Organizations to discuss various issues related to the Indian legislation and possible co-operation in the area of PVP.

2. Participation in the workshop "Reimagining the Governance of Genetic Resources and Intellectual Property for Agriculture and Food Security in Asia" from 2-3 August 2017 at Kathmandu, Nepal.

A two-day workshop titled Reimagining the Governance of Genetic Resources and Intellectual Property for Agriculture and Food Security in Asia was held in Kathmandu on 2 and 3 August 2017. It was organized by South Asia Watch on Trade, Economics and Environment (SAWTEE), together with the ARC Laureate Project on Intellectual Property and Food Security at the University of Queensland and Fridtjof Nansen Institute (FNI). The objective of the workshop was to discuss policy options to safeguard the rights of farmers and breeders in the Asia-Pacific countries.

The workshop discussed the options to address the interests of all relevant public and private stakeholders including farmers, breeders and seed traders. It also aimed to critically assess the arrangements related to plant genetic resources in national laws and international agreements such as the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) of the World Trade Organization (WTO), the Convention on Biodiversity, and the International Union for the Protection of New Varieties of Plants (UPOV).

Nepal is currently exploring options to create policy and legal space for the rights of farmers and breeders, for example, in its draft law on plant variety protection and the existing Seed Act and Seed Regulations.

The experts present at the inaugural session of the workshop emphasized the need for a policy regime that can ensure that the communities which spend generations preserving and innovating plant genetic resources are rewarded. Such a regime should be able to provide due recognition to the farmers and breeders through intellectual property rights, and offer them a share in benefits derived from the use of their traditional knowledge which they have honed for generations.

Among the developing countries, India is the only country that has adopted *sui generis* system to govern plant genetic resources. Sharing the experience of India, Dr. R.C.Agrawal, Registrar General emphasized that registration of plant genetic varieties had a slow start but now two-thirds of the total registrations are coming from the farmers side. Discussing the Indian plant variety protection law, it was also pointed out that India even protects farmers from prosecution in cases of innocent infringement. India enacted the *Protection of Plant Varieties and Farmers' Rights Act* in 2001, implementing a plant variety protection regime that protects the rights of both breeders and farmers. The important provisions of the PPV&FR Act were emphasized with emphasis on farmers' rights and the recognition of farmers for their role from the National Gene Fund.

3. Visit to Netherlands and Germany (8 to 12 May 2017)

Extending the Indo-German and the Indo-Dutch collaboration in the field of seeds and plant variety protection (PVP), Prof. R.R. Hanchinal, Dr. R.C. Agrawal and Mr. S. Selvaraj were deputed by the Central Government to have discussions and meetings with the authorities and representatives of the seed sector of Germany and the Netherlands on various issues related to collaboration on PVP issues and the issue related to convention country. During the meeting, issues related to fostering agricultural innovation and long-term agricultural development interests; exploring the possibilities of introducing training programs for agricultural universities, legal attorneys and government organisations in the field of PVP and in the field of plant breeding; speeding up procedures under the current PVP law; to investigate specific approaches to define "convention country" status; to develop a specific Q&A about the Indian PPV&FR Act and the regulations in order to improve understanding about the law to assist the international companies in decision-making related to investing in India were discussed.

4. Symposium on Plant Variety Protection, Song Do Convensia, Incheon, South Korea (12 to 14 October 2017)

Korea Seed & Variety Service (KSVS) in collaboration with Korean Society for Horticultural Science (KSHS) organized an "International Symposium on Plant Variety Protection" at Incheon, South Korea. This symposium was as a part of the celebration of the 20th anniversary of their operating the PVP system, which was launched in 1997. Dr. R.C.Agrawal, Registrar General, made a presentation on "Implementation of PPV&FR Act, 2001 in India: Opportunities and Challenges" during the symposium. He talked about the PVP system in India, the progress of the PPVFRA during last 10 years, experiences in implementation of Farmers' Rights as per PPVFR Act and the National IPR policies. The concept of convention country was also deliberated and all the countries were appealed to consider the Convention Country Clause with India

as it provides the provision of priority date. There were many queries related to farmers varieties and implementation of Farmers Rights.

The conference was attended by over 200 students and breeders from universities and seed companies. The Seed Industry Law took effect in Korea with effect from 31 Dec 1997 which stipulates the National Plant Breeders Rights system based on 1991 UPOV convention to benefit breeders both in private and public sector. The Act was amended during 2013 to impose stronger penalties on PBR infringements and to make it possible to restore to expired rights by paying reinstatement fees. The PVP system has served true momentum in encouraging local breeders to develop their own breeding techniques. As of August 2017, Korea has granted 9300 IPRs, 20% of which is from foreign breeders.

9.7 Progress of work at Branch Office, Guwahati

The Branch Office, Guwahati of Protection of Plant Varieties and Farmers' Rights Authority started functioning from the campus of Assam Agricultural University, Khanapara, Guwahati from 20 May, 2011. During the reporting year 2017-18 the Guwahati Branch office was headed by Dr. AK Singh, PVE from 01st April 2017 to 15th October 2017 and from 16th October 2017 to March 31st 2018 by Dr. AH Khan, IFS *Retd.* as Deputy Registrar.

9.7.1 Applications / Seed Samples Received

During the reporting period, seventy two applications were received for different crops under various categories and after preliminary examination, these were sent to Head Office for further necessary action. Few applications have also been filed directly by the applicants to the Head Office, New Delhi. Seed samples/planting material received for the candidate varieties which have been applied for the purpose of registration in the previous years were submitted to the Head Office. The details of applications received and forwarded during 1st April 2017-31st March 2018 are as under:

Sl No	Crops	No. recd	Sl No	Crops	No. recd
1	Rice	25	11	Orchid	06
2	Maize	03	12	French bean	02
3	Green Gram	01	13	Okra	02
4	Kidney Bean	01	14	Cowpea	01
5	Acid Lime	02	15	Fox tail millet	01
6	Mango	08	16	Ginger	02
7	Banana	02	17	Garlic	01
8	Sugarcane	02	18	Pumpkin	01
9	Brinjal	08	19	Proso millet	01
10	Tomato	01	20	Taro	02

Sl. No.	Year (January to December)	No. of Applications submitted
1	2012	115
2	2013	581
3	2014	467
4	2015	28
5	2016	32
6	2017	72
	January to March 31st 2018	44
Total		**1339**

9.7.2 Participation/Visits of Deputy Registrar and Plant Variety Examiner (PVE), PPV & FR Authority Branch Office, Guwahati (2017-18)

- Dr. AH Khan, Deputy Registrar participated in the Orientation-cum-Training Programme organized on 13th & 14th November 2017 at the Headquarter, New Delhiwhere they were made acquainted about the objectives and activities of PPV&FRA and also about financial and administrative mechanism to establish and manage branch offices.
- Dr. AH Khan, Deputy Registrar and Dr. Ajay K Singh, PVE participated in one day Regional Workshop on Farmers' Rights and Agro-

of liquors everybody knows covered by an prohibition act.

KVK Thoubal Organises Awareness Programme

Thoubal,Feb.14: Krishi Vigyan Kendra, Thoubal organized one day training cum awareness programme on "Protection of Plant Varieties & Farmers' Right Act 2001" under the sponsorship of PPV & FR Authority New Delhi at its campus today at Khangabok in Thoubal District.
Khangabok Zilla Parishad Member, Rajmohon Singh, Addl. Director (Agriculture) Manipur Dr.M.Mohendro, Dr.M.Rohinikumar Former director Research CoA, CAU Imphal, Dr.I.Meghachandra Singh Joint Director ICAR and Dr.Ajay K Singh Plant Variety Examiner, PPV & FR Authority Guwahati inaugurated the programme as Chief Guest, President and Special Guest respectively.
Around 100 farmers including youths of Thoubal district participated in the programme. Prof.M. Rohinikumar Singh, Former Director of Research, Coiiege of Agriculture(CoA), CAU, Dr. I. Meghachandra Singh, Joint. Director, ICAR, Research Centre for NEH, Manipur centre, Profssor Ranjit Sharma, Dppt. Of GPB, CoA, CAU, Imphal, Dr. Ajay K. Singh Plant Variety Examiner, PPV & FR Authority, Guwahati and P. Devkanta Singh National Awardee, Plant Genome Saviour ' Award were the resource persons of the awareness programme.

biodiversity Exhibition. The workshop was organized by PPV & FRA in association with Assam Agricultural University, Kahikuchi, Guwahati, Assam. Separately an exhibition was also arranged in which different departments such as AAU, Petroleum Conservation and Research Association (PCRA), Ministry of Petroleum and Natural Gases, Krishi Vigyan Kendras of different states, Central Silk Board and other entrepreneurs promoted by KVK Kamrup participated and displayed seed / planting material of local as well as released varieties of cereals, vegetables, fruits etc. More than 700 farmers participated in the program and were made aware of their rights extended under the PPV & FR Act. 2001.

- A meeting was held under the Chairmanship of Dr. R.C. Agrawal, Registrar General, PPV & FR Authority at PPV & FR Guwahati Branch Office, Guwahati on 14/12/2017. The meeting was attended by the Sh. M. Gunasekaran, Assistant Commissioner (Seeds), Ministry of Agriculture, DAC & FW, New Delhi and officials of PPV & FRA, New Delhi including Dr. Ravi Prakash, Registrar, Dr. T. Nagarathna, Registrar, Sh. U.K. Dubey, Deputy Registrar, Sh. R.S. Sengar, Deputy Registrar and Sh. R.R. Pradhan, Legal Adviser, PPV & FRA New Delhi. Branch Office Guwahati was represented by Dr. AH Khan, Deputy Registrar and Dr. AK Singh, Plant Variety Examiner. Functioning of Branch Office was reviewed and suggestive measures/directions were given
- Dr. AK Singh, PVE participated in one day training cum awareness programme on Protection of Plant Varieties & Farmers' Rights Act, 2001 and delivered a lecture on PPV & FR Act and explained the procedure of filing of farmers varieties. Application forms were distributed and were displayed how to fill the application with all relevant and required information. About 100 farmers having an increased number of women farmers from the adjoining villages along with officials and staff of KVK, Thoubal participated in the Awareness Programme. It was organized on 4th Feb, 208 by KVK, Thoubal, Imphal. A small interactive meeting was also arranged with the Officials of State Agricultural Department of Manipur.
- Dr. Singh also visited AMAPCON Office at Imphal who has filed 272 farmers' varieties applications on behalf of farmers of Manipur and discussed the issues of pendency in submission of seed material of many applications in detail and asked to submit the seed samples quickly for their testing in the upcoming season.
- Dr. AH Khan, Deputy Registrar attended the DUS Workshop at IISR, Lucknow during 15-17th Feb, 2018. He also participated in the Regional workshop on Farmers' Rights and Agro-biodiversity Exhibition.
- Dr. AH Khan, Deputy Registrar and Dr. Ajay K Singh, PVE participated in a one day Training cum Awareness Programme on PPV & FRA, New Delhi. The programme was organized by Krishi Vigyan Kendra, Phek, Nagaland on 16th March, 2018. About 104 farmers from the adjoining villages along with officials and staff of KVK, Phek participated in the Awareness Programme. Dr. Khan, highlighted the richness of agro-biodiversity prevailing in the North Eastern region of the country and implementation of system of protection of plant varieties in India. Dr. AK Singh need of protection of plant varieties and agro-biodiversity and farmers were made aware of their rights conferred to them under the PPV & FR Act, 2001, detailed procedure for registration of farmers varieties and PGSC and PGSF award, reward and recognition. An exhibition of the seed and planting material of varieties possessed by the farmers participating in the awareness programme was displayed after the presentations.

- Dr. AH Khan, Deputy Registrar and Dr. Ajay K Singh, PVE visit the School of Agricultural Sciences & Rural Development, Medziphema Campus, Nagaland University, Nagaland on 17th March, 2018. A field visit was made where reference varieties/ local land races of Ash Gourd, Snake Gourd and Ivy Gourd collected from different parts of North East region were planted for validation of DUS testing guidelines of these crop species for the PPV & FRA. Dr. Khan and Dr. Singh also participated in a one day Training

cum Awareness Programme on Protection of Plant Varieties & Farmers' Rights Act, 2001 under the sponsorship of PPV & FRA, New Delhi and organized by Krishi Vigyan Kendra, Dimapur, Nagaland. Both presented their talks as resource person respectively and created awareness among the farmers in respect of PPV & FRA, its provisions, rights and filing of applications. Practical demonstration of filing of applications were shown and discussed for their queries related to the registration of their varieties.

- Dr. AH Khan, Deputy Registrar and Dr. Ajay K Singh, PVE participated and made presentations on implementation of PPV & FR Act, 2001 in India and Registration and Protection of Plant Varieties with special reference to Farmers Varieties in one day awareness programme organized by KVK Ribhoi, Assam. About 75 farmers from the nearby villages along with officials and staff of KVK, Ri Bhoi participated in the Awareness Programme. An exhibition of the seed and planting material of varieties possessed by the farmers participating in the awareness programme was displayed after the presentations. A small meeting was also held in the chamber of Head KVK where Hon'ble MLA Shri George B Lyngdoh, discussed the various problems faced by the farmers of Meghalaya in protecting the local varieties due to non-receipt of any financial support from the Government agencies.

9.8 Progress of work at Branch Office, Ranchi

The PPV&FRA Branch office at Ranchi is situated in the premise of Computer Centre Building of the Birsa Agriculture University, Kanke, Ranchi (Jharkhand) and functioning since May 2011. The major activities of the branch office is to participate in training–cum-awareness programme/meetings/Seminars/workshop convened by various research institutions/agricultural universities/KVKs/departments/organizations/agencies in its jurisdiction for dissemination of knowledge concerning to PPV&FR Act, 2001 including different award, reward & Recognitions, popularization & motivation of registration of Farmers' Varieties.

9.8.1 Plant Variety Registrations

459 applications of farmer's varieties, 01 New & 01 Extant variety applications were submitted from Branch office Ranchi for registration including direct applications of 102 farmers, 01 New & 01 Extant varieties. After initial examination, these applications were sent to the Plant Varieties Registry, New Delhi for further processing. Seed samples of 242 varieties of different crops for DUS and Grow out Test (GOT) were sent to National Gene bank and/or different DUS Centres directly for further necessary action. Branch office at Ranchi has made sincere efforts for collecting Utilization Certificates (UCs) for funds released by Authority for Training-cum-Awareness programmes to various organizations including KVKs in its jurisdiction.

9.8.2 Participation in Seminars/Workshop/Kisan Goshthi organized in the territories of PPV&FRA Branch office, Ranchi

- Farmers' Fair was organised by Motihari Satyagrah Samiti during April 15-19, 2017 at Motihari (Bihar): Several ministers of Government of India, including Sh Ram Kripal Yadav, Hon'ble MoS for Rural Development; Sh Rajiv Pratap Rudy, Hon'ble MoS for Skill Development; Sh Anant Kr Singh, Minister for Chemical and Fertiliser participated in Champaran Satyagrah mela. Apart from that Shri Radha Mohan Singh, Hon'ble Union Minister for Agriculture & Farmers welfare visited PPV&FRA stall on April 16, 2017. Over 220 farmers visited the stall of PPV&FRA. The farmers were very keen to know about registration of farmer variety and Plant Genome saviour farmer award, reward and recognition.
- Regional Level Farmers' Fair and Workshop was jointly organised by PPV&FRA and ICAR-NRRI on Nov 17, 2017 at NRRI, Cuttack: Sh.S.K.Pattanayak, Secretary, Department of Agriculture, Cooperation and FW,

Ministry of Agriculture & Farmers Welfare, Govt. of India graced the occasion and Dr T Mohapatra, Secretary DARE and DG ICAR; Dr B Rajinder, Chairperson, Dr R C Agrawal, Registrar General, PPV&FRA; Dr Himangshu Pathak, Director, ICAR-NRRI participated. Branch Office at Ranchi also coordinated visit of seventeen farmers from Chhattisgarh, seven from Jharkhand & several farmers of Odisha. During the exhibition, farmers displayed various important farmers' varieties seed /planting materials in the seminar & workshop.

- Regional Workshop and Agro - Biodiversity Exhibition was organised by PPV&FRA in collaboration with Assam agricultural University, Jorhat (Assam) at Kahi Kuchi campus near Guwahati. In this seminar/workshop Sh K K Mittal, IAS, Additional Chief Secretary/Agricultural Production Commissioner(APC), Govt of Assam; Dr M. Premjit Singh, Hon'ble Vice chancellor, CAU Imphal; Dr. R.C.Agarwal, Registrar General; Dr. Ravi Praksh, Registrar (Farmers Rights); Dr TK Nagarathna, Registrar; Sh Uma Kant Dubey, Deputy Registrar; Sh RS Sengar, Deputy Registrar & others from PPVFRA were present. Many other officials/scientists viz., Sh M. Gunasekaran, Assistant Commissioner(seeds), DAC&FW, Ministry of Agriculture & Farmers Welfare, Govt. of India; Dr AK Tripathi, Director, ICAR-ATARI-IV Guwahati; Dr BC Deka, Director, ICAR-ATARI-VII Umiam (Meghalaya); Dr GN Hazarika, Director(Research), Assam Agricultural University, Jorhat (Assam); Dr KK Sharma, I/C IPR Cell Assam Agricultural University, Jorhat (Assam), Dr R Borgohianm, Head KVK Jorhat; Dr DN Kalita, Head KVK, Kamrup; Dr AH Khan Deputy Registrar, PPV&FRA, Guwahati; Dr AK Singh, PVE, PPV&FRA Branch office at Guwahati graced the occasion.
- A Training-Cum-Awareness Programme was organised by Department of Genetics and Plant Breeding, Faculty of Agriculture, Annamalai University on March 14, 2018 at Annamalainagar, Tamilnadu. Dr. S. Maniam, Hon'ble Vice Chancellor, Annamalai University, Shri Umakant Dubey, Deputy Registrar, PPV&FRA, New Delhi, Shri R. Natrayan, Joint Director of Agriculture, Dr. Emayavaramban, National Seeds Corporation, Dr. M. Ravichandran, Dean, Faculty of Agriculture, Annamalai University, Dr. V Venkatesulu, Professor and Head, Dept. of Botany, Annamalai University participated and deliberated on the subject.

9.9 Progress of work at Branch Office, Pune


Inauguration of Pune Branch

Protection of Plant Varieties and Farmers' Rights Authority inaugurated the Pune branch office on 20 May 2017 with the gracious presence of Dr S. K. Pattanayak, Secretary, Dept. of Agriculture and Farmers Welfare (DoAC&FW), Ministry of Agriculture and Farmers Welfare, Govt. of India, New Delhi, in the presence of Dr. Ram Kharche, Vice-President, Maharashtra Council of Agricultural Education and Research, Pune and Dr. K. P. Viswanatha, Hon'ble Vice-Chancellor, MPKV, Rahuri. The branch office is established in campus at the College of Agriculture, Pune. This branch is covering the territorial region of Goa, Gujarat, Maharashtra, Rajasthan, Dadar and Nagar Haveli, and Daman and Diu. Brief progress is given below:

- Training cum awareness programme was organised at ICAR NIASM, Baramati, Pune on 06 December 2017 where 50-60 farmers participated. It was also attended by Dr. Ravi Prakash, Registrar
- Kisan 2017 (Exhibition) was orgainised at Moshi, Pune during 13 -17 December 2017. More than 1300 farmers attended PPV&FRA stall and nearly 500 companies participated in exhibition where nearly 155000 visitors visited exhibition during five days.

- Training cum awareness programme was organised at Dr. PDKV, Akola on 10 January 2018. About 25 crop breeders, Heads of Department(s), field staffs participated and Hon'ble VC and Director of Research showed keen interest in awareness programme.
- Training cum awareness programme was organised at KVK, Anta, Baran, Rajasthan on 23 February 2018 where nearly 76 farmers participated. Dr S B Gurav, Deputy Registrar, participated as a Resource Person and interacted with the farmers
- Workshop on Fig Production Organized by Maharashtra State Fig Growers Association under Chairmanship of Shri Sharad Pawar, Former Union Minister of Agriculture, Government of India, was organised at Kalewadi, Tahsil Purandar, Dist Pune on Feb 28, 2018 where nearly 600 farmers participated.
- Training cum awareness programme was organised at Chitavi, Tahsil Navapur and Vadgaon, Tahsil Shahada, Nandurbar and was organised by MPKV, Rahuri during 08-09 March 2018. Nearly 190 and 136 tribal farmers participated in the programme. Dr S B Gurav, Deputy Registrar, participated as a Resource Person

- Participated as a resource person in PPV&FRA Awareness Programme organized by KVK, Jaisalmer, Rajasthan on 2 March 2018. It was attended by more than 100 farmers.
- Deputy Registrar participated in Regional Workshop of PPV&FRA, New Delhi on 27 March, 2018 organized by the NAU, Navsari, Gujarat under the guidance of Hon'ble Chairperson Dr. K. V. Prabhu, Chairperson, PPV&FRA, N. Delhi and Hon'ble VC, NAV, Navsari. It was also attended by nearly 700 farmers.
- Centre processed applications of 7 varieties under Extant notified crop species

9.10 Progress of work at Branch Office, Shivamogga

The Protection of Plant Varieties and Farmers' Rights Authority (PPV&FRA), with the support from Ministry of Agriculture and Farmers Welfare established three branch offices this year (vide Gazette Notification No. S.O. 182 dated January 19, 2017) under the leadership of Prof. R.R. Hanchinal (Chairperson, PPV&FRA) and Dr. R.C. Agrawal (Registrar General, PPV&FRA). On 03 May 2017, Shri.B.S.Yeddyurappa (MP and Former Chief Minister of Karnataka) along with Shri.Y.B.Raghavendra, Dr.Vasudevappa (Vice-Chancellor, University of Agricultural and Horticultural Sciences, UAHS, Shivamogga, Karnataka) inaugurated the branch office within the premises of UAHS, Shivamogga. This office would function as the nodal center for the states of Andhra Pradesh, Karnataka, Kerala, Lakshadweep, Puducherry, Tamil Nadu and Telangana.

9.10.1 Establishment of branch Office

- The Branch Office, Shivamogga of Protection of Plant Varieties and Farmers' Rights Authority started functioning from the campus of University of agricultural and Horticultural science, Shivamogga from 06 October, 2017.
- Dr. K.G. Parameshwarappa reported for the duty of Deputy Registrar, PPV&FRA on 26th October, 2017
- The office building was handed over by UAHS Shivamogga for functioning of the Office as per MOU, 22nd December, 2017
- All Director of Research of SAUs under the jurisdiction were informed about the start of the branch Office at UAHS Shivamogga and requested to send proposal for registration of New, Extant and Farmers varieties for Registration.
- Efforts were made to collect addresses of the Vice Chancellor, Director of Research, Director of Extension & KVK's of all the Agricultural & Horticultural Universities comes under in this jurisdiction.

- Branch office prepared extension literature, presentations on the objectives and functions of PPV&FRA both in English as well as in Kannada for use in the awareness programmes.
- Participated in the training-cum-awareness 'programmes, krishi mela, Annual breeders technical meet and various seminar conducted by agricultural and horticultural universities.
- Branch office contacted many farmers and breeders of agricultural and Horticultural University and appraised them about farmers and breeders rights, benefit sharing, awards, process of application and fees etc.

9.10.2 Training programmes participated

Date	Event	Details
13th and 14th November, 2017	Orientation-cum-training programme for Deputy registrars of branch offices of PPV&FRA	Attended the Orientation-cum-Training programme for Deputy registrars of branch offices of PPV&FRA was organized at the Head quarters to make them acquaint about the objectives and activities of PPV&FRA and also about financial and administrative mechanism to establish and manage branch office
23rd December, 2017	Krishi Mela at UAHS Bhagalkot	Attended as Resource Person and delivered talk on the assigned topic **"Seed villages and conservation of Plant Genetic Resources",** which was followed by farmer's interactions.
15th and 17th January, 2018	DUS review meeting held at IISR, Lucknow	Attended DUS review meeting from 13th to 19th January held at IISR Lucknow as per the direction Registrar, PPV&FRA, New Delhi
15th February,2018	ICAR sponsored CAFT Training programme at KRCCH Arabhavi	Attended ICAR sponsored CAFT Training programme at KRCCH Arabhavi and delivered a talk on **"Genetic diversity of flowers and ornamentals and Role of PPV & FRA in protection flowers and ornamental plant varieties".**
22nd February,2018	Annual Technical Meet of the Breeders	Participated in the Annual Technical Meet of the Breeders of the university at UAHS, Shivamogga as chairman of the technical session-I. At end of the session impressed upon registration of breeders and farmers varieties immediately.
23rd March,2018	NSS Day Programme at Sogane village, Veterinary College, Shivamogga	Attended the NSS Day Programme at Sogane village, Veterinary College, Shivamogga and delivered a talk on **"Genetic diversity of Animals and Role of PPV & FRA in protection plant varieties".**

9.10.3 Applications / Seed Samples Received

Total 07 applications were received for Rice, Maize, Sorghum and Green gram crops under various categories and after preliminary examination, these were sent to Head Office for further necessary action. Applications as well as seed samples/planting material of the candidate varieties which have been applied for the purpose of registration were received and sent to Headquarters

The details of applications received and forwarded are as under:

Crop species	No of applications
Rice	01
Maize	02
Sorghum	01

Crop species	No of applications
Green gram	0 3
Total	07

9.11 Progress of work at Branch Office, Palampur

- Awareness-Cum Training Programme was organised on **3rd February, 2018** by the KVK Kangra at the University HQ at Palampur through Directorate of Extension Education. About 107 Farmers from 5 Blocks viz: Nagrota Bagwan, Panchrukhi, Bhawarna, Baijnath & Bhedu Mahadev participated / got registered for the programme. A Lead Lecture regarding the provisions under the Act and activities of the Authority was delivered laying major emphasis on registration of farmer's varieties. The steps/ process involved in the registration of farmers' varieties were explained that emphasised on DUS (Distinctiveness, Uniformity & Stability characters). Various aspects of Protection of Plant Varieties e.g. through SAU/NGO/KVK/SCAR/Sates Department of Agriculture / Horticulture/NBA/B.I & Farmer's right Authority and right to recognition and reward was also amply explained.
- Dr. Satish C Sharma, Dy. Registrar, PPV & FRA Branch Office at Palampur attended and participated in the "*Annual DUS Review Meeting, Regional Workshop and Agro-diversity Exhibition*" held at IISR Lucknow.
- The application of registration of farmers varieties received during the Awareness- cum Training Programme were scrutinized as per procedure laid by the Authority for final submission to the authority and Branch office also started documentation for all the applications filed for plant variety applications. It has prepared a list of all Stakeholders (All KVKs, VC's, Directors of Research, Directors/ Department of Agriculture/ Horticulture, conservator of Forests/ ICAR officials along with their numbers & addresses.
- Deputy Registrar participated in Awareness cum Training Programme/ Farmers Rights/ DUS Test/ Different Rights under PPV& FR Act at Shere-e-Kashmir University of Agricultural Sciences & Technology, Jammu On **26th March, 2018**. This programme was attended by representatives from all 7 KVK's of SKUAST along with Line Departments---Directorate Of Agriculture/ Horticulture/ ,All Deans/ Directors, all Heads Of Deptt.of the University. Queries of the officials regarding registration of Farmers varieties, Seed requirements for DUS testing, Status of Farmers varieties sent for Registration to Authority, Farmers awards & rewards & recognition were replied.

CHAPTER 10: INTERNATIONAL COOPERATIONS

10.1 DUS Training programme on Apple

Two days practical training on ***Principles of DUS Testing of Apple Varieties according to UPOV System*** was jointly organized by Indo-German Bilateral Co-operation in Seed Sector project and Protection of Plant Varieties and Farmers' Rights Authority, New Delhi during 6-7th June 2017 at Regional Horticultural Research and Training Station, Mashobra, Shimla. Dr R C Agrawal, Registrar General, PPV&FRA, New Delhi; Dr Eric Schulte, BSADr H C Sharma Vice Chancellor, UHF, Nauni, Dr K S Verma, Director (Research) and Dr Sushma Bhardwaj, Associate Director, RHR&TS, Mashobra were present during the workshop.

In the Technical session, Dr Eric Schultz, BSA described the UPOV TGP/14/9 and CPVO Test guideline in Apple, 54 descriptors, manner of DUS testing, image database of fruits/leaf characters and informed that more than 80% of varieties being applied fall under mutant category and informed about reference collection, maintenance of database, cooperation in DUS testing etc.Visit was made to Field Gene Bank at Mashobra and practical demonstrations were given on canopy and overall orchard management, pest control, layout of DUS test and how to record descriptors in Apple.

10.2 Joint Workshop: Experience Sharing in Plant Variety Protection under Indo-German Bilateral Co-operation in Seed Sector with technical partnership of India, The Netherlands & Germany

A joint workshop under Indo-German Bilateral Cooperation in Seed Sector Development was held during Nov 21-22, 2017 at Lecture Hall, NASC, New Delhi. It was inaugurated by Sh Kumar Sanjay Krishna, Additional Secretary and Financial Advisor, Department of Agriculture, Cooperation and Farmers Welfare, Ministry of Agriculture and Farmers Welfare. Dr B Rajender, Joint Secretary(Seeds) and Chairperson, PPV&FRA; Dr R C Agrawal, Registrar General, PPV&FRA; Dr Udo von Krocher, President, BSA; Mr Marien Valstar, DG-Agro, the Netherlands; Mr Michael Kessler, Counsellor (Agri-Food), The German Embassy in India also graced the occasion. Several Scientists from ICAR/SAUs, Govt officials, representatives of plant variety protection offices of BSA-Federal Republic of Germany; BDP-The German Plant Breeders' Association; Seed Industry representatives and PPV&FRA officials participated and deliberated in the discussion.

During the two days deliberation, five technical sessions were held as per the following:

- Technical Session I: An Overview of PVP in India, Germany and The Netherlands chaired by Dr A K Sarial, Hon'ble Vice Chancellor, CSK HPKV, Palampur
- Technical Session II: Co-operation in DUS Testing in Identified Crops chaired by Dr K P Viswanatha, Hon'ble Vice Chancellor, MPKV, Rahuri
- Technical Session III: Innovation and International Co-operation chaired by Dr K P Viswanatha, Hon'ble Vice Chancellor, MPKV, Rahuri
- Technical Session IV: Management of PGR and Partnerships chaired by Dr P Narayanaswamy, Vice Chancellor, UAHS, Shivamogga
- Technical Session V: Patents and Plant Variety Protection chaired by Dr N K Dadlani, Fmr Director APSA

These were followed by a panel discussion in PVP and Patents: Way Forward and Roundtable discussion of CEOs: Development of Seed Sector and Co-operation: India and Germany which were participated by Dr Udo von Krocher, President, BSA; Mr Marien Valstar, DG Agro The Netherlands; Ms Nikki Kumari; Mr M Prabhakar Rao, CMD, Nuziveedu Seeds & Dr R C Agrawal, RG, PPV&FRA. The brief recommendations are as per the following:

- Calibration of DUS Characteristics is required to harmonise descriptors of the identified species using & sharing common reference varieties and database (Rose, Wheat, Maize, Potato, Apple) under Pilot phase and establishment of an Expert Group is required to harmonise procedures
- Training and capacity building for technical persons and Scientists involved DUS testing, Seed quality control, certification mechanism is important as these are likely to be converged in future to keep in harmony of the International Practices
- Authority may impart legal education to officials working in State Dept of Agriculture, Horticulture and Forestry and bring awareness among the legal professionals and Judges(District Court and High Court) about the provisions of PPV&FRA
- India's bio-resources provide an unique opportunity to explore access and benefit sharing under Sec 26 of PPV&FRA to create a platform for licensing mechanism as per FRAND terms
- Authority may form an Expert Group to study bio molecular marker technologies, Genetic distance and automation to be explored for future use in DUS testing
- "Date of Priority" can be accepted as a first action for the Convention country agreement would largely benefitted several applicants from EU/outside India
- An In-depth study will be done by EU Breeder Associations to understand various provisions of PPV&FR Act, 2001 through the FAQs and if required those will be update before the Feb 2018 meeting

It was further discussed that India-EU meeting shall be conducted in Feb 2018 with a possible participation from UPOV, Breeders' Association in EU and India, PVP Authorities from Netherlands, Germany and India, other stakeholders that should focus on discussion on legal & technical aspects to understand implications of different provisions under PPV&FR Act, 2001 in harmonisation with UPOV legislation in case a status of Convention country is to be agreed upon

10.3 Workshop under Indo German Bilateral Cooperation in Seed Sector Development

Indo-German bilateral workshop on *'Principles of DUS Testing of Rose Varieties and Vegetables according to UPOV System'* was organised at IIHR during 14-15th Dec, 2017 in association with PPV&FRA, New Delhi. Ms Friedhilde Trautewein, expert on rose and vegetable DUS testing from BSA, Germany deliberated on DUS testing procedures and Plant Breeders' rights in Germany. Sh Dipal Roy Choudhury, Joint Registrar, PPV&FRA deliberated on PPV&FR Act of India. Representatives of South Indian Floriculture Association (SIFA) as well as commercial rose growers and exporters participated in the workshop and discussed about the issues related to 'Plant variety protection' in rose. Scientists and research staff of Directorate of Floriculture-Pune, AICRP-NARP-Pune, UHS- Bagalkot participated in the workshop besides the crop breeders and DUS workers from IIHR. DUS guidelines in rose and vegetables were discussed in detail and visits were organised to fields where DUS testing was in progress.

Discussions during the two days of workshop resulted in discussion of several issues that need to be addressed in registration of rose and vegetable varieties.

- All the DUS characters were discussed and wherever possible calibration and harmonisation was attempted. For certain characters, need were felt for further discussion that has been indicated in the enclosed list.

- A need for development of DUS testing guideline inclusive of more diagrams and photos along with clarity related to time/stage of observation was felt necessary for calibration and harmonisation.
- Specific example and major reference varieties need to be shared between the countries.
- Data logger being used by BSA, Germany may be procured for ease of recording observation
- Digital repository can be created on International platform that can act as base for selection of reference varieties

10.4 International workshop on "India-EU collaboration in Seed Sector development and PVP" held from 22nd -23rd February 2018 at Hyatt Regency, New Delhi

International workshop on "*India-EU collaboration in Seed Sector development and PVP*" held during 22-23 February 2018 at Hyatt Regency, New Delhi. It was jointly organised by PPV&FRA, Department of Industrial Policy and Promotion (Ministry of Commerce & Industry, GOI) and with the support from The German Federal Ministry of Food and Agriculture and Ministry of Agriculture, Nature and Food Quality, The Netherlands. Representatives from Department of Agriculture, Co-operation and Farmers' Welfare, ICAR, SAUs', National Horticulture Board, Agriculture Councillors of Embassies in India, in addition to representatives from seed industries, attorneys, legal advisors from India, Switzerland, and other stakeholders also actively participated in the workshop.

The workshop created a forum of interactions between plant breeders, seed associations and PVP offices for EU and India. Discussions by various delegates were focussed on strengthening skills and knowledge of the Plant Variety Rights legislation in EU-CPVO, India and UPOV in addition to different systems for registration of varieties followed in EU and India. The workshop stressed on how to build a framework on Convention country arrangements for mutual recognition of PVP with the member countries at EU with India. Dr Peter Button, Vice Secretary General, UPOV, participated and expressed his satisfaction and support in the on going initiatives for Indo-German Bilateral Cooperation in Seed Sector Development.

During two days meeting, several sessions to discuss about legal issues, vision and ambitions of farmers' association and breeders' association in India and EU were deliberated. The workshop was successfully completed by exchanging several informative ideas regarding plant variety protection.

CHAPTER 11: FINANCIAL STATEMENTS OF THE AUTHORITY

Table: Balance Sheet as on 31st March, 2018

CORPUS / CAPITAL FUND AND LIABILITIES	Schedule	Current Year	Previous Year
Corpus / capital fund	1	483,737,227	402,074,246
Reserves and surplus	2	-	-
Earmarked/endownment funds	3	-	-
Secured loans and borrowings	4	-	-
Unsecured loans and borrowings	5	-	-
Defrerred credit liabilities	6	-	-
Current liabilities and provisions	7	125,765,631	123,527,750
TOTAL		**609,502,858**	**525,601,996**
ASSETS			
Fixed assets	8(A)	30,326,059	30,025,715
Less: accumulated depreciation		25,648,117	24,983,197
Net fixed assets		4,677,942	5,042,518
Capital work in progress	8(B)	18,147,519	17,838,219
Investments-from earmarked/endownment funds	9	-	-
Investments-others	10	-	-
Current assets,loans advances etc.	11	586,677,398	502,721,259
Miscellaneous expenditure			
(to the extent not written off or adjusted)			
TOTAL		**609,502,858**	**525,601,996**

Table: Income and Expenditure Account for the Year ended 31st March 2018

Income	AUTHORITY FUND		GENE FUND	
	2017-18	2016-17	2017-18	2016-17
Income from Sales/ Services	-	-	-	-
Grants/Subsides	-	-	-	-
Fees/Subcrpitions	-	-	-	-
Income from Investments	-	-	-	-

Income from Royality,Publication etc.	-	-	-	-
Interest Earned	-	-	-	-
Other Income	8,682	-	132,304	2,805,487
Increase/(Decrease) in stock of Finished goods and works in progress	-	-	-	-
Deferred Income(Depreciation on fixed asset)	664,923	664,923	-	-
Prior period Adjustment A/c **(Annexure-A)**	-	-	-	-
TOTAL (A)	**673,605**	**664,923**	**132,304**	**2,805,487**
EXPENDITURE				
Establishment Expenses	-	57,167,000	-	-
Other Administrative Expenses etc.	484,309	-	-	-
Expenditure on Grants , Subsidies etc.	-	-	-	-
Interest	-	-	-	-
Depreciation including Impairement Loss (Net Total at the year-end-corresponding to Schedule 8)	664,923	664,923	-	-
Prior period Adjustment A/c **(Annexure-A)**	-	1,999,941	-	-
TOTAL(B)	**1,149,232**	**59,831,864**	-	-
Balance being excess of Income Over Expenditure (A-B)	**(475,627)**	**(59,166,941)**	**132,304**	**2,805,487**
Transfer to special Reserve(Specify each)	-	-	-	-
Transfer to /from General Reserve	-	-	-	-
BALANCE BEING SURPLUS (DEFICIT) CARRIED TO CORPUS/CAPITAL FUND	**(475,627)**	**(59,166,941)**	**132,304**	**2,805,487**

Table: Receipts and payments for the Year ended 31st March, 2018

RECEIPTS	Current Year	Previous Year	PAYMENTS	Current Year	Previous Year
1. Opening Balances			**1. Expenses**		
a) Imprest (Cash In hand)	25,819	22,815	a) Establishment Expenses	29,327,769	19,920,282
b) Bank Balances			b) Administrative Expenses	25,760,344	39,142,253
State Bank of India	25,340,939	52,271,445			
Syndicate Bank	40,484,983	32,976,805	**2. Payments made against funds**		
Remmitance in Transit	-	-	a) Existing DUS Centres (Annexure-B&C)	48,678,826	47,131,161
SBI (Gene Fund)	65,009,845	52,161,780	b) New DUS Centres (Annexure-D&E)	15,029,404	11,225,966
Guwahati Bank	32,433	32,433	c) Referral Labs (Annexure-F)	-	-
Ranchi Bank	26,087	26,086	d) Field Gene Bank (Annexure-G&H)	2,405,515	3,524,952
Less: Sweep Balance (Net)	-	(127,740,142)			
2. Grants received from Government of India	151,710,000	197,500,000	3. Expenditure on fixed Assets and Capital Work in Progress		
			a) Purchase of Fixed Assets(Authority)	269,414	48,036

3. Interest Received On Bank deposits			b) Expenditure on Capital Work-in-Progress	-	-
Gene Fund	-	-			
Authority Fund (Incl Branches)	5,791,575	14,633,296	4. Advance to Training Centres (Annexure-I)	23,050,738	17,712,267
Interest Earned on Authority Fund FD					
Interest on CPF Deposits 3,727			5. Advance to outsiders (Annexure-J)	417,705	1,101,075
Interest on SB (Syndicate Bank) 17,04,151					
Interest on SB (SBI) 1,207			6. Refilling of Franking Machine	150,000	100,000
Interest on Sweep (Syndicate) 40,73,808					
Interest on income tax refunded 8,682			7. Contribution to Gene Fund	-	57,167,000
4. Refund of Advance from Training Centres (Annexure-M)	PDKV, Akola	313,411	8. Advance to Staff (Annexure-K)	4,018,048	1,307,562
5. Refund of Advance for Development of DUS Guidelines (New DUS Centre)	-	163,141	9. Finance Charges	5,464	17,945
6. Refund of Advance from Staff (Annexure-N)	Uma Kant Dubey	608,939	10. TDS Deducted by Bank	950	199,483
7. Refund of Advance from Field Gene Bank	892,629	351,181	11. Fixed Deposit-(SBI)	147,076,000	356,000

8. Refund of Advance from Maintenance of Reference Varieties (Annexure-O)	SKNAU-Jobner (Barley)	148,050	12. Recurring Deposit-(CPF)	-	297,000
9. Refund of Advance from Referral Laboratories	-	1,000,000	13. Statutory Liabilities Paid (Annexure-L-I)	7,372,419	5,356,830
10. Advance against DUS Test & Registration Fee	-	285,600	14. Other Remmittances (Annexure-L-II)	30,658	37,560
11. Fees / Subscriptions/Other Income			**15. Creation of Auto Sweep**		
Application/Registration Fees	6,664,800	10,141,600	Creation of Sweep-SBI	62,838,000	207,403,000
PVJ Subscription Fees	101,800	107,500	Creation of Sweep-SBI-GENE	90,460,000	21,970,000
Fees for Notice of Opposition	-	10,000	Creation of Sweep-Syndicate	34,887,000	45,159,000
Annual Fees (Including Share from sale of Seeds)-Gene Fund	5,370,206	4,722,123			
DUS Test Fees	4,829,500	8,278,500	**16. Closing Balances**		
Annual Renewal Fees	2,072,100	722,000	a) Imprest (Cash In hand)		
Inspection Fees	186,500	273,000	Authority	25,000	25,819
Annual Return Form	132,304	2,805,487	Ranchi Branch	3,186	52
Other Income			Guwahati Branch	(6,262)	767
Sale of Publications	27,000	600	b) Bank Balances (Including MOD)		

Sale of Old Newspapers,Scrap	3,370	29,486	i) State Bank of India	20,066,070	25,340,939
RTI	-	370	ii) Syndicate Bank	32,415,441	40,484,983
Reversal of TDS deducted	248,058	81,077	iii) SBI (Gene Fund)	3,106,549	65,009,845
Excess credit given by Bank	-	-	iv) Guwahati Bank	8,015	32,433
Contribution from Authority Fund	-	57,167,000	v) Ranchi Bank	16,056	26,087
12. Encashment of Sweep-SBI	174,484,996	155,849,395			
13. Encashment of Sweep-SBI-GENE	31,689,954	9,970,473			
14. Encashment of Sweep-Syndicate	30,508,354	363,775			
15. Accrued Interest on Sweep.	221,083	-			
16. Encashment of FD					
Central Bank of India	-	63,754,768			
Fixed Deposite(Syndicate Bank)	690,574	70,408,303			
17. CPF Recurring Deposit	93,000	658,000			
18 LS & PC	119,453				
TOTAL	**546,757,362**	**610,098,297**	**TOTAL**	**547,412,310**	**610,098,297**

CHAPTER 12: CITIZEN CHARTER

VISION OF THE AUTHORITY:

To ensure an effective system for protection of plant varieties, the rights of the farmers, plant breeders and to encourage the development of new varieties of plants.

OBJECTIVES OF THE AUTHORITY:

- To provide an effective system for protection of plant varieties and rights of farmers, plant breeders and researchers.
- To protect plant breeders' rights and to stimulate investment for Research & Development and evolution of new varieties.
- To recognize the farmers in respect of their contributions made for conserving, improving and making available plant genetic resources for development of new plant varieties.
- To facilitate the growth of seed industry to ensure production and availability of high quality seeds and planting material to the farmers.

FUNCTIONS OF THE AUTHORITY:

- Encourage the development of new varieties of plants and to protect the rights of the farmers and the plant breeders.
- Establishment of National Gene bank for orthodox seeds and field gene banks for perennial crops
- Registration of new and extant varieties of plants
- Developing documentation of registered plant varieties
- Documentation, indexing and cataloguing of farmers' varieties
- Compulsory cataloguing facility for all varieties of plants
- Ensuring seeds of varieties registered under the Act are available to farmers and providing for compulsory license, if needs arise
- Ensuring maintenance of National Register of plant varieties
- Utilization of Gene Fund for supporting the conservation and sustainable use of plant genetic resources and capacity building of the panchayats in carryings out such conservation and sustainable use and meeting the expenditure of the schemes relating to benefits sharing and compensations to the stakeholders Protection of Plant Varieties and Farmers' Rights is a unique subject involving diverse activities, initiatives and stakeholders. The stakeholders of Protection of Plant Varieties and Farmers' Rights Authority are Central Government, State Governments, Union Territories, Research Organizations including State Agricultural Universities, Seed Industries, NGOs and above all the farmers including tribal farming communities.

SERVICES OFFERED BY THE AUTHORITY:

- Providing IPR protection to plant varieties bred by farmers, researchers/ plant breeders in the form of plant variety registration
- Maintaining National Register of Plant varieties wherein details of plant varieties and the rights of respective breeders are documented
- Providing compensation to the farmers in case a registered variety does not perform as per the claim made by the breeders
- Facilitating benefit sharing to the communities/ farmers for the contribution/ sharing of plant genetic resources
- Creating awareness and capacity building for the rights of plant breeders and farmers towards implementation of PPV&FR Act, 2001
- Developing plant varieties database for the stakeholders

- Supporting and rewarding farmers and communities of farmers, particularly the tribal and rural communities, engaged in conservation, improvement and preservation of genetic resources

RTI

The details of RTI authorities are as follows:

Dr. R. C. Agrawal
Registrar General
Appellate Authority
Protection of Plant Varieties and Farmers' Rights Authority
S-2, A Block, NASC Complex, DPS Marg,
New Delhi -110012
Ph: 011-25843316. Fax: 011-25840478.
E mail: ppvfra-agri@nic.in
www.plantauthority.gov.in

Dr. Ravi Prakash
Chief Public Information Officer
Protection of Plant Varieties and Farmers' Rights Authority
S-2, A Block, NASC Complex, DPS Marg,
New Delhi -110012
Tel: +91-11-25843853
Email: prakash.ravi@nic.in

ANNEXURE I: MEMBERS OF THE AUTHORITY

S.No.	Name	Designation	Address
1	Dr. S.K. Malhotra	Agriculture Commissioner	Department of Agriculture & Cooperation, Ministry of Agriculture, Govt. of India, Krishi Bhavan, New Delhi – 110 001
2	Dr. A.K. Singh	Deputy Director General (Crop Science)	Division of Crop Science, Ministry of Agriculture, Govt. of India Indian Council for Agriculture Science Krishi Bhavan, New Delhi - 110 001
3	Shri Ashwani Kumar (w.e.f. 20 January 2018)*	Joint Secretary (Seeds)	Department of Agriculture & Cooperation, Ministry of Agriculture, Govt. of India Krishi Bhawan, New Delhi – 110 001
4	Dr. B.N.S. Murthy	Horticultural Commissioner	Department of Agriculture & Cooperation, Ministry of Agriculture, Govt. of India, Room no 238, Krishi Bhawan, New Delhi – 110 001
5	Dr. Kuldeep Singh	Director	National Bureau of Plant Genetic Resources, Pusa, DPS Marg, New Delhi-110 012
6	Dr. Mohd. Aslam	Adviser/Scientist 'G'	Department of Biotechnology, Ministry of Science & Technology, Govt. of India, Room No. 809, 8th Floor, Block- 2, CGO Complex, Lodhi Road, New Delhi- 110003
7	Dr. Sujata Arora	Adviser	Ministry of Environment & Forests & Climate Change, Room No.V-235, Indira Paryavaran Bhawan, New Delhi - 110003
8	Shri Bihari Lal Sharma	Executive Director	Youth for Sustainable Development, B-2, M.C. Car Parking-cum-Commercial Complex, Near H.P. High Court, Shimla – 171 001
9	Shri Aruna Kumara V.K.	Director	Krishi Prayoga Pariwara Krishi Nivas, Kuruvalli, Thirthahalli, Shimoga Dist. Karnataka – 577432
10	Shri Prabhakar Rao	Chairman & Managing Director	Nuziveedu Seeds Private Limited NSL Icon, 4th Floor, Opp. ICICI Bank, Road No. 12, Banjara Hills, Hyderabad, Telangana – 500 034
11	Dr. R.C. Srivastava	Vice Chancellor	Dr. Rajendra Prasad Central Agricultural University Pusa, Samastipur – 848 125
12	Dr. Nikki Hembrom		MIG 52, Hanuman Nagar Kankarbagh, Patna – 800 020

13	Mr. Bijay Kumar, IAS	Principal Secretary (Agriculture)	Government of Maharashtra, Mantralaya, Mumbai – 462004
14	Dr. Rajesh Rajora. IAS	Principal Secretary (Agriculture)	Government of Madhya Pradesh, Mantralaya, Room No. 83, Ballabh Bhavan, Bhopal-462004
15	Shri. R.S. Verma	Joint Secretary & Legal Adviser	Ministry of Law & Justice Room No. 145 A, Railway Bhawan, New Delhi –110001

*Dr. B. Rajender, Joint Secretary (Seeds) (from 13 June 2017 to 19 Jan 2018) and Shri R.K. Singh, Joint Secretary (Seeds) (from 1 June to 12 June 2017)

Chairperson

1. Dr. Kumble Vinod Prabhu (w.e.f. 6 February 2018)
2. Dr. B. Rajender (from 13 June 2017 to 19 January, 2018)
3. Shri R. K. Singh (from 1 June, 2017 to 12 June, 2017)
4. Dr. R.R. Hanchinal (upto 31 May 2017)

Member Secretary

Dr. R. C. Agrawal, Registrar General

ANNEXURE II: DETAILS OF HUMAN RESOURCES PPV&FR AUTHORITY

Name of the post	Pay Level as per 7th CPC	Posts sanctioned	Posts vacant
Chairperson	Level 17 (Rs. 225000)	1	-
Registrar General	Level 15 (Rs. 182200 – Rs. 224100)	1	-
Registrar	Level 13 (Rs. 123100 – Rs. 215900)	3	-
Finance Advisor	Level 13 (Rs. 123100 – Rs. 215900)	1	-
Joint Registrar I	Level 12 (Rs. 78800 – Rs. 209200)	2	-
Joint Registrar II	Level 12 (Rs. 78800 – Rs. 209200)		1
Legal Advisor-I	Level 11 (Rs. 67700 – Rs. 208700)	2	1
Legal Advisor-II	Level 11 (Rs. 67700 – Rs. 208700)		
Deputy Registrar	Level 11 (Rs. 67700 – Rs. 208700)	3	3
Plant Variety Examiner	Level 7 (Rs. 44900 – Rs. 142400)	3	2
Technical Assistant	Level 6 (Rs 35400 - 112400)	1	-
Computer Assistant	Level 6 (Rs 35400 - 112400)	6	1

ANNEXURE III: STATEMENT SHOWING FUNDS RELEASED TO NEW DUS CENTRES/PROJECTS DURING 2017-18

Table: Statement showing funds released to new DUS centers during 2017-18:

Sl. No.	Name of the New DUS Centre	Crop	Release During 2017-18
1	IIHR, ICAR-Unit, Banglore	China Aster	250,000
2	TNAU, Coimbatore	Papaya and Custard Apple	182,036
3	UHS, Bagalkot	Drumstick	296,200
4	CIAH, ICAR-Unit, Bikaner	Aonla	99,013
5	CISH, ICAR-Unit, Lucknow (Bael)	Bael	215,309
7	NRC ICAR-Unit, Cashew	Cashew	399,760
8	Dr. Y.S. Parmar University of Horticulture & Forestry, Solan	Willow (Salix Species)	362,574
9	IIHR,ICAR-Unit, Bangalore	Marigold	377,215
10	CPCRI ICAR-Unit,	Cocoa	832,090
11	CCARI-ICAR, Goa	Kokum	429,000
12	NRCSS Ajmer	Ajwain, Dill, Nigella, Celery, Anise	860,106
13	Dr. Y.S. Parmar University of Horticulture & Forestry, Solan	Lillum Sp, Oriental, Asiatic, LA & OT Hybrids	450,000
14	IFGTB Coimbatore	Ailanthus	835,078
15	IFGTB Coimbatore	Red Sanders & Indian Sandal wood	499,513
16	IIHR-ICAR-Unit, Bangalore	(Gerbera)	435,560
17	SHUATS Allahabad	-	450,000
18	SKUAST-K Srinagar	Maize Land Races	450,000
19	UAS Dharwad	Cowpea	450,000
20	CPCRI Karnataka	Arecanut	300,000
21	BSKKV Dapoli	Kokum	329,476
22	CIAH,ICAR-Unit, Bikaner	Datepalm	300,000
23	Dr. Y.S. Parmar University of Horticulture & Forestry, Solan	Seabuckthorn	416,890
24	CISH, (Central Ins for Subtropical Horticulture), ICAR-Unit, Lucknow	Anola	364,759
25	CISH, (Central Ins for Subtropical Horticulture), ICAR-Unit Lucknow	Jamun	275,000

26	Dr B S Konkan Krishi Viswadidyalaya, Dapoli	Nutmeg	278,000
27	UAS, Dharwad	Horsegram, Mothbean, Clusterbean, Lathyrus	99,600
28	IARI, Division of vegetable, ICAR-Unit, New Delhi	Radish and Carrot	929,664
29	IARI, Division of Fruit & Horticulture, ICAR-Unit, New Delhi	Lemon & Pummelo	1,088,446
30	ICAR Research Complex NEH Region, Umian	Jackfruit	288,559
31	BSKKV Dapoli	(Pulses, Vegetable & Cereals)	205,000
32	Nagaland University	Chow- Chow	900,000
33	UAS Dharwad	Mesta	450,000
34	UAS GKVK Bangalore	Jackfruit	283,789
35	NRC on Litchi, ICAR- Unit, Muzaffarpur	Litchi & Guava	546,767
36	UAHS Shivmogga	-	100,000
		TOTAL	**15,029,404**

ANNEXURE IV: STATEMENT SHOWING FUNDS RELEASED TO EXISTING DUS CENTRES/PROJECTS DURING 2017-18

Table: Statement of showing funds released to existing DUS Centers/ Project during 2017-18:

Sl. No.	Name of DUS Centre	Crop	Release During 2017-18
1.	NRCC, ICAR- Unit, Nagpur	Citrus	50,000
2.	DTR & DCTB, Kurseong	Tea	100,000
3.	IIHR, ICAR-Unit, Bangalore	Carnation	300,000
4.	BCKV (Bidhan Chandra Krishi Visavidyalaya), Kalyani	Yam and Taro	240,496
5.	IIHR, ICAR-Unit, Bangalore	Tuberose	360,000
6.	Central Tuber Crops Res Institute, Trivandrum	Sweet Potato and Cassava	375,000
7.	NBRI ICAR-Unit, Lucknow	Gladiolus	415,641
8.	BCKV (Bidhan Chandra Krishi Visavidyalaya), Kalyani	Pointed Gourd	425,000
9.	IIPR, ICAR-Unit, Kanpur	PigeonPea	500,000
10.	IIHR, ICAR-Unit, Bangalore	Jasmine	450,000
11.	CITH (Central Institute for Tropical Horticulture), Srinagar	Peach and Plum	638,195
12.	CISH (Central Ins for Subtopical Horticulture), Lucknow	Mango	718,190
13.	CIAH, ICAR-Unit, Bikaner	Water and Muskmelon	300,000
14.	SKNAU, Jobner	Barley	275,000
15.	JNKVV, Jabalpur	Field Pea, Linseed	575,000
16.	BCKV(Bidhan Chandra Krishi Visavidyalaya), Kalyani	Betel Vine	300,000
17.	CSAUA&T, Kanpur	Linseed	746,520
18.	IGKV, Raipur	Rice	475,695
19.	CIMAP (Central Ins for Medicinal and Aromatic Plants), Lucknow	Medicinal Plants	625,000
20.	CIAH (Central Ins for Arid Horticulture), ICAR-Unit, Bikaner	Ber	545,163
21.	IARI, Divn of Veg Sc., New Delhi	Bottle Gourd	615,693
22.	IARI, Regional Station, Katrain	Cabbage and Cauiflower	350,000
23.	IIHR, ICAR-Unit, Bangalore	Mango	525,000
24.	NRC Banana, ICAR-Unit, Trichy	Banana	213,211
25.	TRA, Tocklai	Tea	325,000
26.	CARI, ICAR-Unit, Port Blair	Noni	421,294
27.	TNAU, Coimbatore	Small Millet	350,000
28.	NBPGR, ICAR-Unit, New Delhi	Grain Amaranth	411,999
29.	TNAU, Coimbatore	Jasmine	100,000
30.	DGR (Directorate of Groundnut Research), ICAR-Unit, Junagarh	Groundnut	342,312
31.	IARI, Divn of Veg Sc, New Delhi	Chilli	278,016
32.	JNKVV, Jabalpur	Sesame and Niger	417,354
33.	IIHR, ICAR-Unit, Bangalore	Watermelon and Muskmelon	300,000

Sl. No.	Name of DUS Centre	Crop	Release During 2017-18
34.	Central Sericultural Research and Training Institute, Mysore	Mulberry	151,056
35.	JAU (Junagadh Agril University), Jamnagar	Castor	389,088
36.	Sugarcane Breeding Inst., ICAR-Unit, Agali	Sugarcane	556,933
37.	IFGTB (Institute of Forest Genetics and Tree Breeding), Coimbatore	Eucalyptus and Casuarina	209,649
38.	IIHR, ICAR-Unit, Bangalore	Amaranth, Palak, Ridge Gourd	625,000
39.	AAU (Assam Agril University), Jorhat	Rice	562,900
40.	IARI, Divn of Floriculture, ICAR-Unit, New Delhi	Marigold	550,000
41.	VPKAS (Vivekananda Parvatiya Krishi Anusandhan Shala), ICAR-Unit, Almora	Rajma, Soybean, Maize	374,259
42.	DOGR (Directorate of Onion and Garlic Research), ICAR-Unit, Rajgurunagar	Onion and Garlic	253,317
43.	NRC(National Res Centre for Orchids),ICAR-Unit, Sikkim	Orchids	341,056
44.	NRCP,ICAR-Unit, Sholapur	Pomegranate	556,742
45.	IARI Division Of Veg. Science, ICAR-Unit,	Onion and Garlic	416,268
46.	IISR (Indian Instt. of Sugarcane Res.), ICAR-Unit, Lucknow	Sugarcane	572,563
47.	IIHR, ICAR-Unit, Bangalore	Betel Vine	200,038
48.	IISR (Indian Ins of Spices Research), ICAR-Unit, Calicut	Spices	400,000
49.	DSR (Directorate of Soybean Research), ICAR-Unit, Indore	Soybean	590,696
50.	IIPR (Indian Ins of Pulses Research), ICAR-Unit, Kanpur	Mungbean, Urdbean, lentil, Rajma, Vegetable Pea	400,000
51.	NRC-Grapes (National Res. Centre of Grapes), ICAR-Unit	Grapes	584,925
52.	IARI, ICAR-Unit, Regional Station, Karnal	Rice	586,470
53.	Sugarcane Breeding Inst, ICAR-Unit, Coimbatore	Sugarcane	603,894
54.	IGKV, Raipur	Grow out Test (Rice)	489,191
55.	Sugarcane Breeding Inst., ICAR-Unit, Karnal	Sugarcane	512,649
56.	DRMR (Directorate of Rapeseed and Mustard Research), ICAR-Unit, Bharatpur	Rapeseed and Mustard	375,770
57.	IIHR, ICAR-Unit, Bangalore	Chilli	1,100,000
58.	RAU Bikaner-Mandore AICPMIP Jodhpur	Pearl Millet	470,662
59.	PAU (Punjab Agril University), Ludhiana	Oat, Cowpea & Guinea grass, cotton	295,901
60.	CRRI (Central Rice Res. Instt.), ICAR-Unit, Cuttack	Rice	1,519,382
61.	PDKV (Panjab Rao Deshmukh Krishi Viswavidyalaya), Akola	Chickpea, Red Gram	550,000
62.	DMAPR (Dir. Medicinal & Aromatic Plant Res.), Anand	M&A plants	554,109

Sl. No.	Name of DUS Centre	Crop	Release During 2017-18
63.	CCSHAU (Choudhary Charan Singh, Hisar Agril University), Hisar	Cotton, Chickpea	735,000
64.	IARI, ICAR-Unit, Regional Station, Indore	Wheat	149,539
65.	CPRI (Central Potato Res. Inst.), ICAR-Unit, Shimla	Potato	600,000
66.	NEH, ICAR-Unit, Region Barapani Manipur	Rice	847,647
67.	IARI, Division of Veg Sc, New Delhi	Cabbage and Cauiflower	409,263
68.	PJTSAU (Jayashankar Telengana State Agricultural University), Hyderabad	Maize	1,059,706
69.	IIWBR, ICAR-Unit, Karnal	Wheat	1,201,484
70.	TNAU (Tamil Nadu Agricultural University), Coimbatore	Rice, Sunflower, Groundnut	589,355
71.	IIMR, ICAR-Unit Hyderabad	Sorghum	870,896
72.	CRIJAF(Central Res Ins for Jute and Allied Fibres Research), Barrackpore & CSRS, Budbud	Jute	754,332
73.	MPKV, Rahuri	Cotton, Chickpea	626,905
74.	IIOR, ICAR-Unit, Hyderabad	Sunflower, Castor & safflower	832,178
75.	CPCRI, ICAR-Unit, Kerala	Coconut	486,036
76.	UAS, GKVK, Banglore	Small Millet	954,260
77.	CISH (Central Ins For Subtropical Horticulture), ICAR-Unit, Lucknow	Guava & Litchi	272,000
78.	IIPR (Indian Ins of Pulses Research), ICAR-Unit, Kanpur	Chickpea, Pigeon pea	413,801
79.	MPKV, Rahuri	Sorghum, Pearl Millet	935,580
80.	IIHR, ICAR-Unit, Hassarghatta, Bangalore	Vegetables	2,045,270
81.	UAS (University of Agril. Sciences), Dharwad	Cotton, Soybean, Groundnut and Sesame	1,593,812
82.	IIHR (Indian Ins for Horticultural Research), ICAR-Unit, Bangalore	Rose & Chrysanthemum	212,346
83.	IIRR ICAR-Unit, Hyderabad (Rice)	Rice	1,433,093
84.	IIMR, ICAR-Unit, New Delhi	Maize	1,165,029
85.	CICR, Coimbatore	Cotton	900,000
86.	CICR (Central Ins. For Cotton Research), ICAR-Unit, Nagpur	Cotton	500,000
87.	IIVR (Indian Ins of Veg Research), ICAR-Unit, Varanasi	Okra, Brinjal, Tomato, Cabbage, Cauliflower	1,439,000
88.	Dr. Y.S. Parmar University of Horticulture & Forestry, Solan	Poplar	-205,003
		TOTAL	**48,678,826**

ANNEXURE V: STATEMENT SHOWING FUNDS RELEASED TO FIELD GENE BANKS DURING 2017-18

Table: Statement showing funds released to Field Gene Banks during 2017-18:

Sl. No.	Name of Centers	Release During 2017-18
1	Dr. Balasaheb Konkan Krishi Vidyapeeth,Dapoli	735,088
2	CAZRI, Jodhpur	233,440
3	Dr. Y.S. Parmar University of Horticulture & Forestry	544,358
4	NBPGR, New Delhi	892,629
	TOTAL	**2,405,515**

ANNEXURE VI: FINANCIAL SUPPORT TO DIFFERENT ORGANIZATIONS DURING THE YEAR 2017-18

Table: Financial support to different organizations during the year 2017-18:

Sl. No.	Name of Beneficiary	Release During 2017-18
1.	Assam Agri. Uni., Jorhat (AAU)	515,000
2.	CRRI , Cuttak	520,000
3.	CSAU&T Kanpur	79,212
4.	CSKHPKV	200,000
5.	CISH Lucknow	915,000
6.	IIVR Varanasi	900,000
7.	Research SHIATS Allahabad(136/15)	80,000
8.	ICAR RECR Patna(136/15)	500,000
9.	MPKV, Rahuri	600,000
10.	NRC of Orchids, Sikkim	80,000
11.	PAU, Ludhiana	154,766
12.	RVSKVV, Gwalior (136/15)	80,000
13.	UA&HS, Shimoga, Karnataka(136/15)	800,000
14.	YSPUH&F Solan (Chamba)	80,000
15.	Zonal Projects Directorate, ICAR Zone -I , Ludhiana, punjab	955,294
16.	Zonal Projects Directorate, ICAR Zone -IV, Kanpur, U.P	3,666,657
17.	Zonal Projects Directorate, ICAR Zone -V, Hyderabad	4,299,809
18.	Zonal Projects Directorate, ICAR Zone -VI, Jodhpur	480,000
19.	Zonal Projects Directorate, ICAR Zone -VII, Jabalpur	3,770,000
20.	Comp. NAU, Gujarat (KVK) Navsari, Narmada	500,000
21.	NBRI Lucknow	80,000
22.	Comptroller Agricultural University Jodhpur	80,000
23.	Secretary, ISVS, Varanasi	80,000
24.	Directorate of Education of BAU Sabour, Bhagalpur	480,000
25.	Indian Society of Genetics & Plant Breeding	80,000
26.	Secretary , Indian Association of Hill Farming	80,000
27.	IISWC, Agra	80,000
28.	NIASM, Baramati	80,000
29.	Society for Community Mobilization for Sustainable Development	80,000
30.	ZPD Zone III Barapani (Umiam)	1,680,000
31.	ISPRD-PULSYM, Kanpur	80,000
32.	UHS Bhagalkot	80,000
33.	IASWC, Dehradun	160,000
34.	PJTSAU Hyderabad	515,000
35.	Annamalai University	80,000
36.	Institute of Agricultural Science B.U. Jhansi	80,000
37.	Sam Higginbottom INS. OF Agri,Tech. & Sci Allahabad	80,000
	TOTAL	**23,050,738**

ANNEXURE VII: LIST OF FARMERS' VARIETIES RECEIVED DURING THE YEAR 2017-18

Crops	Andaman & Nicobar Islands	Arunachal Pradesh	Assam	Bihar	Chhattisgarh	Gujarat	Haryana	Jammu & Kashmir	Jharkhand	Karnataka	Kerala	Maharashtra	Manipur	Meghalaya	Nagaland	Odisha	Rajasthan	Tamil Nadu	Uttar Pradesh	Uttarakhand	West Bengal	Total
Acid Lime	-	-	2	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	3
Bael	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	1	1
Banana	-	-	2	-	-	-	-	-	2	-	-	1	-	-	-	-	-	2	-	-	-	7
Barley	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-		5	3	-	9
Barnyard Millet	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	-	3
Betelvine	-	-	-	-	1	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	1
Bitter Gourd	-	-	-	1	3	-	-	1	-	-	-	-	-	-	-	-	-	-	9	1	-	15
Black gram	-	-	-	1	-	1	-	-	11	-	-	-	-	-	-	-	-	-	22	1	-	36
Bottle Gourd	-	-	-	2	6	-	-	-	1	-	-	1	-	-	-	-	-	-	24	1	3	38
Brahmi	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	1	-	-	1
Brinjal	-	-	7	-	1	-	-	-	9	-	-	1	-	-	-	-	-	-	1	-	1	20
Cabbage	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Castor	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	3
Cauliflower	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
Chickpea	-	-	-	3	1	-	-	-	12	-	-	-	-	-	-	-	-	-	2	-	-	18
Chilli	-	-	-	-	1	1	-	-	2	-	-	-	-	-	1	-	-	-	2	-	1	8
Coriander	-	-	-	5	1	-	-	-	1	-	-	-	-	-	-	-	-	-	13	-	-	20
Cucumber	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	7	-	-	9
Durum Wheat	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	2	-	-	3
Elephant Foot Yam	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-		1	-	-	2
Faba bean	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	1	-	-	3
Fenugreek	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1	1	-	3

Crops	Andaman & Nicobar Islands	Arunachal Pradesh	Assam	Bihar	Chhattisgarh	Gujarat	Harvana	Jammu & Kashmir	Jharkhand	Karnataka	Kerala	Maharashtra	Manipur	Meghalaya	Nagaland	Odisha	Rajasthan	Tamil Nadu	Uttar Pradesh	Uttarakhand	West Bengal	Total
Fieldpea	-	-	-	2	-	-	-	-	3	-	-	-	-	-	-	-	-	-	11	-	-	16
Finger Millet	-	-	-	2	-	-	-		4	-	-	-	-	-	-	-	-	-	-	7	-	13
Foxtail Millet	-	-	-	1	-	-	-	1	-	-	-	-	-	-	-	-	-	-	5	2	-	9
Garlic	-	-	-		-	-	-	1	-	-	-	-	-	-	-	-	1	-	2	-	-	4
Ginger	-	-	-	1	1	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	4
Green gram			1	1	-	-	-		-	3	-	-	-	-	-	-	1	-	16	-	-	22
Groundnut	-	-	-	-	-	-	-	-	5	-	-	-	-	-	-	-	-	-	-	-	-	5
Guava	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	3
Indian Gooseberry	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1
Indian Jujube (Ber)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1
Indian mustard (Karan Rai)	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1
Indian mustard (Sarso)	-	-	1	3	-	-	-	-	11	-	-	-	-	-	-	-	2	-	2	-	-	19
Jamun	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1
Jute	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Kidney bean	-	-	1	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	6	3	-	12
Kodo Millet	-	-	-	1	-	-	-	1	-	-	-	-	-	-	-	-	-	-	7	-	-	9
Lentil	-	-	-		-	-	-	-	4	-	-	-	-	-	-	-	-	-	4	2	-	10
Linseed	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	5
Litchi	-	-	-		-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1
Maize	-	-	-	4	-	-	-	6	29	-	-	-	-	-	-	-	-	-	18	1	-	58
Mango	1	-	8	1	-	2	-	-	2	-	-	1	-	-	-	-	-	-	1	-	51	67
Marigold	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1	-	1	3
Menthol mint	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	2
Muskmelon	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1

Crops	Andaman & Nicobar Islands	Arunachal Pradesh	Assam	Bihar	Chhattisgarh	Gujarat	Harvana	Jammu & Kashmir	Jharkhand	Karnataka	Kerala	Maharashtra	Manipur	Meghalaya	Nagaland	Odisha	Rajasthan	Tamil Nadu	Uttar Pradesh	Uttarakhand	West Bengal	Total
Nutmeg	-	-	-	-	-	-	-	-	-	-	6	9	-	-	-	-	-	-	-	-	-	15
Okra/Lady's Finger	-	-	-	-	1	-	-	-	2	-	-	-	-	-	-	-	-	-	3	-	-	6
Onion	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
Orchid	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-	-	-	-	-	-	-	5
Papaya	-	-	-	-	4	-	-	-	1	-	-	-	-	-	-	-	-	-	1	-	-	6
Pearl Millet	-	-	-	-	-	-	-	-	14	-	-	-	-	-	-	-	1	-	11	-	-	26
Pigeon pea	-	-	-	-	6	-	-	1	18	-	-	1	-	-	-	-	-	-	8	1	-	35
Potato	-	-	-	1	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1	-	-	3
Pumpkin	-	1	-	-	-	-	-	-	6	-	-	1	-	-	2	-	-	-	4	1	2	17
Rajgeera	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1
Rapeseed (Gobhi Sarson)	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	1	-	-	4
Rapeseed (Toria)	-	-	-	4	-	-	-	-	4	-	-	-	-	-	-	-	-	-	2	1	-	11
Rice	-	2	17	27	22	-	3	4	67	1	-	4	4	-	-	16	-	-	38	12	27	244
Ridge gourd	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15	1		16
Safflower	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1
Sesame	-	-	-	2	-	-	-	-	3	-	-	-	-	-	-	-	-	-	16	3	-	24
Small cardamom	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	1
Sorghum	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	12	-	-	14
Soybean	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	5	-	6
Spinach Beet	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1
Sugarcane	-	-	2	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	4
Taro	-	-	-	-	-	-	-	-	-	6	-	-	-	-	-	-	-	-	3	-	-	9
Tetraploid Cotton	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	2
Tomato	-	-	1		1	-	-	-	7	-	-	-	-	-	-	-	-	-	-	-	-	9

Crops	Andaman & Nicobar Islands	Arunachal Pradesh	Assam	Bihar	Chhattisgarh	Gujarat	Haryana	Jammu & Kashmir	Jharkhand	Karnataka	Kerala	Maharashtra	Manipur	Meghalaya	Nagaland	Odisha	Rajasthan	Tamil Nadu	Uttar Pradesh	Uttarakhand	West Bengal	Total
Turmeric	-	-	-	2	2	-	-	1	5	-	1	-	-	-	-	-	-	-	9	-	-	20
Vegetable Amaranth	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
Walnut	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Watermelon	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Wheat	-	-	-	-	-	-	-	-	8	-	-	-	-	-	-	-	5		3	4	-	20
Grand Total	**1**	**3**	**42**	**73**	**56**	**5**	**3**	**21**	**247**	**12**	**8**	**23**	**4**	**5**	**3**	**16**	**11**	**2**	**302**	**55**	**88**	**980**

ANNEXURE VIII: CROPS UNDER REGISTRATION

Sl. No.	Crop	Botanical Name
1.	Rice	*Oryza sativa* L.
2.	Bread wheat	*Triticum aestivum* L
3.	Maize	*Zea mays* L.
4.	Sorghum	*Sorghum bicolor* (L.) Moench
5.	Pearl millet	*Pennisetum glaucum* (L.) R.Br.
6.	Chickpea	*Cicer arietinum* L.
7.	Mungbean	*Vigna radiata* (L.) Wilczek
8.	Urdbean	*Vigna mungo* (L.) Hepper
9.	Fieldpea	*Pisum sativum* L.
10.	kidney bean	*Phaseolus vulgaris* L.
11	Lentil	*Lens culinaris* Medik
12	Pigeon pea	*Cajanus cajan* (L.) Millsp.
13	Indian mustard	*Brassica juncea* L. Czern & Coss
14	Karan rai	*Bracissa carinata* A Braun
15	Rapeseed(toria)	*Brassica rapa* L.
16	Gobhi sarson	*Brassica napus* L.
17	Groundnut	*Arachis hypogaea* L.
18	Soybean	*Glycine max* (L.) Merrill
19	Sunflower	*Helianthus annuus* L.
20	Safflower	*Carthamus tinctorius* L.
21	Castor	*Ricinus communis* L.
22	Sesame	*Sesamum indicum* L.
23	Linseed	*Linum usitatissimum* L.
24	Diploid cotton	*Gossypium arboreum* L.
25	Diploid cotton	*Gossypium herbaceum* L.
26	Tetraploid cotton	*Gossypium hirsutum* L.
27	Tetraploid cotton	*Gossypium barbadense* L.
28	Jute	*Corchorus olitorius* L.
29	Jute	*Corchorus capsularis* L.
30	Sugarcane	*Saccharum* L.
31	Black pepper	*Piper nigrum* L.
32	Small cardamom	*Elettaria cardamomom* Maton
33	Turmeric	*Curumma longa* L.

Sl. No.	Crop	Botanical Name
34	Ginger	*Zingiber officinale* Rosc.
35	Tomato	*Lycopersion lycopersicum* (L.) Karsten ex. Farw.
36	Brinjal	*Solanum melongena* L.
37	Okra	*Abelmoschus esculentus* (L.) Moench.
38	Cauliflower	*Brassica oleracea* L.var. *botrytis*
39	Cabbage	*Brassica oleracea* L. var *capitata*
40	Potato	*Solanum tuberosum* L.
41	Onion	*Allium cepa* L.
42	Garlic	*Allium sativum* L.
43	Rose	*Rosa* spp.*(*other than *R.damascena)*
44	Chrysanthemum	*Chrysanthemum* spp.
45	Mango	*Mangifera indica* L.
46	Duram wheat	*Triticum durum* Desf.
47	Dicoccum wheat	*Triticum dicoccum* L.
48	Other Triticum species	
49	Isabgol	*Plantago ovata* Forsk
50	Menthol mint	*Mentha arvensis* L.
51	Damask Rose	*Rosa damascena* Mill
52	Periwinkle	*Catharanthus roseus* L.
53	Brahmi	*Bacopa monnieri* L.Pennell
54	Coconut	*Cocos nucifera* L.
55	Orchids	*Vanda*
56	Orchids	*Dandrobium*
57	Orchids	*Cymbidium*
58	Pomegranate	*Punica granatum* L
59	Orchid	*Cattleya* Lindl.
60	Orchid	*Phalaenopsis* Blume
61	Eucalyptus	*Eucalyptus camaldulensis* Dehnh.
62	Eucalyptus	*Eucalyptus tereticornis* Sm.
63	Casurina	*Casuarina equisetifolia* L
64	Casurina	*Casuarina junghuhniana* Miq.
65	Bitter Gourd	*Momordica charantia* L.
66	Bottle Gourd	*Lagenaria siceraria (*Mol.*)* Standl.
67	Cucumber	*Cucumis sativus* L.
68	Pumpkin	*Cucurbita moschata* Duch. ex Poir.

Sl. No.	Crop	Botanical Name
69	Barley	*Hordeum vulgare* L.
70	Coriander	*Coriandrum sativum* L.
71	Fenugreek	*Trigonella foenum graecum* L.
72	Almond	*Prunus dulcis* (Mill.) D.A. Webb
73	Apple	*Malus domestica* Borkh
74	Pear	*Pyrus communis* L.
75	Apricot	*Prunus armeniaca* L.
76	Cherry	*Prunus avium* L.
77	Walnut	*Juglans regia* L.
78	Grapes	*Vitis* spp.
79	Indian jujube (Ber)	*Ziziphus mauritiana* Lamk.
80	Tea	*Camellia sinensis*
81	Tea	*Camellia assamica*
82	Tea	*C.assamica* ssp *lasiocalyx.*
83	Acid Lime	*Citrus aurantifolia* Swingle
84	Mandarin	*Citrus reticulata* Blanco
85	Sweet Orange	*Citrus sinensis* (L.) Osbeck
86	Bougainvillea	*Bougainvillea Comm. Ex* Juss.
87	Banana	*Musa* spp.
88	Orchid	*Oncidium* Sw.
89	Canna	*Canna* L.
90	Gladioulus	*Gladioulus* L.
91	Muskmelon	*Cucumis melo* L.
92	Watermelon	*Citrullus Lanatus* (Thunb.) Mansf.
93	Jasmine	*Jasminum auriculatum*. L.
94	Tuberose	*Polianthes tuberose* L.
95	Papaya	*Carica papaya* L.
96	China Aster	*Callistephus chinensis* (L.) Nees.
97	Peach	*Prunus persica* L Batsch.
98	Japanese Plum	*Prunus salicina* L.
99	Strawberry	*Fragaria x ananasan* Duch.
100	Chilli, Bell Pepper and Paprika	*Capsicum annuum* L.
101	Finger Millet	*Eleusine coracana* (L.) Gaertn.
102	Foxtail Millet	*Setaria italic* (L.) Beauv
103	Vegetable Amaranth	*Amaranthus tricolor* L.

Sl. No.	Crop	Botanical Name
104	Ridge gourd	*Luffa acutangula* (L.) Roxb.
105	Spinach beet	*Beta vulgaris var. bengalensis* Roxb.
106	Carnation	*Dianthus caryophyllus* L.
107	Orchid	*Paphiopedilum Pfitz.*
108	Noni	*Morinda citrifolia* L.
109	Bael	*Aegle marmelos* (L.) Correa
110	Jamun/Black plum	*Syzygium cumini* (L.) Skeels.
111	Nutmeg	*Myristica fragrans* Houtt.
112	Jasmine/Mogra	*Jasminum sambac* L.
113	Custard apple / Sugar apple	*Annona squamosa* L.
114	Kalmegh /King of Bitters	*Andrographis paniculata* (Burm.f.) Wall. ex Nees
115	Karanj	*Pongamia pinnata* (L.) Pierre.
116	Neem	*Azadirachta indica* A. Juss.
117	Indian Gooseberry	*Emblica officinalis Gaertn.*
118	Guava	*Psidium guajava L.*
119	Litchi	*Litchi chinensis* Sonn.
120	Marigold	*Tagetesspp.* L.
121	Betelvine	*Piper betle* L.
122	Deodar	*Cedrus deodara* (Roxb.) G. Don
123	Chir Pine	*Pinus roxburghii* Sargent
124	Mulberry	*Morus spp.*
125	Jasmine	*Jasminum multiflorum* L.
126	Common/ Sweet Buckwheat	*Fagopyrum esculentum*
127	Tartary/ Bitter Buckwheat	*Fagopyrum tataricum*
128	Rajgeera (the King's grain) or Ramdana (Lord Rama's grain).	*Amaranthus hypocondricus*
129		*Amaranthus cruentus*
130		*Amaranthus caudatus*
131		*Amaranthus edulis*
132	Faba bean	*Vicia faba* L.
133	Jatropha	*Jatropha curcas* L.
134	Proso Millet	*Panicum maliaceum* L.
135	Barnyard Millet	*Echinocloa frumentaceae* (Roxb.) Link
136	Little Millet	*Panicum sumatrense* Roth. Ex. Roemer And Schultes
137	Kodo Millet	*Paspalum scorbiculatum* L.
138	Elephant Foot Yam	*Amorphophallus paeoniifolius*

Sl. No.	Crop	Botanical Name
139	Taro	*Colocasia esculenta*
140	Giant SwampTaro	*Cyrtosperma chamissionis/C.merkusii*
141	Cashew	*Anacardium occidental L.*
142	Arecanut	*Areca catechu L.*
143	Chironji	*Buchananialanzan Sperng.*
144	Tamarind	*Tamarindusindica* L.
145	Sweet potato	*Ipomoea batatas* (L.) Lam
146	Cassava	*Manihotesculenta* Crantz.
147	Poplar	*Populusdeltoides* Bartr.

ANNEXURE IX: CERTIFICATES OF REGISTRATION ISSUED DURING 2017-18

Sl. No.	Registration No.	Denomination	Applicant Name	Type Of Variety
1	149 Of 2017	Kabi Raj	Anjan Kumar Sinha	Farmer
2	150 Of 2017	Jal-Dhepa	Anjan Kumar Sinha	Farmer
3	151 Of 2017	Baskamini	Anjan Kumar Sinha	Farmer
4	152 Of 2017	Dharansal	Anjan Kumar Sinha	Farmer
5	153 Of 2017	Neta	Chamarlal Ganjhu	Farmer
6	154 Of 2017	Suakalma	Anjan Kumar Sinha	Farmer
7	155 Of 2017	Like-Kakua	Anjan Kumar Sinha	Farmer
8	156 Of 2017	Pani Dhan	Budhna Oraon	Farmer
9	157 Of 2017	Baraha Sail	Ramdhani Ganju	Farmer
10	158 Of 2017	China Kamini	Anjan Kumar Sinha	Farmer
11	159 Of 2017	OK-606	Nuziveedu Seeds Pvt. Ltd.	Extant (VCK)
12	160 Of 2017	US 305 (IET 21827)	Seed Works International Pvt. Ltd.	New
13	161 Of 2017	SPH 1635	Dr. Panjabrao Deshmukh Krishi Vidyapeeth	New
14	162 Of 2017	Suryaprabha (SSFH-32)	Safal Seeds & Biotech Ltd.	Extant (VCK)
15	163 Of 2017	Badsha-B	Anjan Kumar Sinha	Farmer
16	164 Of 2017	Kalo Nuniya	Syed Arafat Ali	Farmer
17	165 Of 2017	Kathali Chapa	Syed Arafat Ali	Farmer
18	166 Of 2017	Jhilik	Anjan Kumar Sinha	Farmer
19	167 Of 2017	Mukta	Anjan Kumar Sinha	Farmer
20	168 Of 2017	Moti-1	Anjan Kumar Sinha	Farmer
21	169 Of 2017	Kalodhopa	Anjan Kumar Sinha	Farmer
22	170 Of 2017	Bhurisal	Anjan Kumar Sinha	Farmer
23	171 Of 2017	Medi-WB	Anjan Kumar Sinha	Farmer
24	172 Of 2017	Nabanna	Anjan Kumar Sinha	Farmer
25	173 Of 2017	Ayan	Anjan Kumar Sinha	Farmer
26	174 Of 2017	Langal Muthi	Anjan Kumar Sinha	Farmer
27	175 Of 2017	Nikunja	Anjan Kumar Sinha	Farmer
28	176 Of 2017	Kalo Bhat	Anjan Kumar Sinha	Farmer
29	177 Of 2017	Ashish	Anjan Kumar Sinha	Farmer
30	178 Of 2017	Badswarna-II	Anjan Kumar Sinha	Farmer
31	179 Of 2017	Sundari	Anjan Kumar Sinha	Farmer
32	180 Of 2017	Sitapi	Anjan Kumar Sinha	Farmer
33	181 Of 2017	Nirjhara	Anjan Kumar Sinha	Farmer
34	182 Of 2017	Neta	Anjan Kumar Sinha	Farmer
35	183 Of 2017	Keshav Sal	Syed Arafat Ali	Farmer
36	184 Of 2017	Bhura Silate	Nirmal Mondal	Farmer
37	185 Of 2017	Khandagiri-I	Anjan Kumar Sinha	Farmer
38	186 Of 2017	Muchishal	Sahadeb Das	Farmer
39	187 Of 2017	Ash Phol	Ananda Das	Farmer
40	188 Of 2017	Oda Shal	Susanta Das	Farmer

Sl. No.	Registration No.	Denomination	Applicant Name	Type Of Variety
41	189 Of 2017	Kamini	Amit Das	Farmer
42	190 Of 2017	Dulpi	Parikshit Halder	Farmer
43	191 Of 2017	Chini Kamini	Harendranath Gayen	
44	192 Of 2017	Kala Bhat	Syed Arafat Ali	Farmer
45	193 Of 2017	Punjab Naveen	Punjab Agricultural University	Extant (Notified)
46	194 Of 2017	Punjab Haldi-1	Punjab Agricultural University	Extant (Notified)
47	195 Of 2017	Punjab Haldi-2	Punjab Agricultural University	Extant (Notified)
48	196 Of 2017	Virat (Phule G-95418)	Mahatma Phule Krishi Vidyapeeth	Extant (Notified)
49	197 Of 2017	Kripa	Mahatma Phule Krishi Vidyapeeth	Extant (Notified)
50	198 Of 2017	Pusa Mangal (Hi 8713)	Indian Council Of Agricultural Research (Icar)	Extant (Notified)
51	199 Of 2017	Phule Suchitra (Rsv 1098)	Mahatma Phule Krishi Vidyapeeth	Extant (Notified)
52	200 Of 2017	GS-513	Vikram Seeds Pvt. Ltd.	New
53	201 Of 2017	86m84	Pioneer Overseas Corporation	New
54	202 Of 2017	LH 2076	Punjab Agricultural University	New
55	203 Of 2017	7493870 B	M/S Bharati Seeds	Extant (VCK)
56	204 Of 2017	Narendra Wheat 5054	Indian Council Of Agricultural Research (Icar)	New
57	205 Of 2017	K 1006	Indian Council Of Agricultural Research (Icar)	New
58	206 Of 2017	Komal 2486	Advanta India Limited	New
59	207 Of 2017	SL 744	Indian Council Of Agricultural Research (Icar)	Extant (Notified)
60	208 Of 2017	Agrifound Parvati (G-313)	National Horticultural Research & Development Foundation	Extant (Notified)
61	209 Of 2017	Kashi Anmol (KA – 2)	Indian Council Of Agricultural Research (Icar)	Extant (Notified)
62	210 Of 2017	Kalamkhari-2	Anjan Kumar Sinha	Farmer
63	211 Of 2017	Radha Tilak	Syed Arafat Ali	Farmer
64	212 Of 2017	Murkimala	Anjan Kumar Sinha	Farmer
65	213 Of 2017	Bhuri	Anjan Kumar Sinha	Farmer
66	214 Of 2017	Sonagori	Anjan Kumar Sinha	Farmer
67	215 Of 2017	Lal Tipa	Anjan Kumar Sinha	Farmer
68	216 Of 2017	Kalo Byar	Anjan Kumar Sinha	Farmer
69	217 Of 2017	Ful Pagri	Anjan Kumar Sinha	Farmer
70	218 Of 2017	Radhatilak-Ran	Anjan Kumar Sinha	Farmer
71	219 Of 2017	White Burma	President, Karen Welfare Association	Farmer

Sl. No.	Registration No.	Denomination	Applicant Name	Type Of Variety
72	220 Of 2017	Nyaw-In	President, Karen Welfare Association	Farmer
73	221 Of 2017	Black Burma	President, Karen Welfare Association	Farmer
74	222 Of 2017	Khushbayya	President, Karen Welfare Association	Farmer
75	223 Of 2017	Ksms 233	Kaveri Seed Company Limited	New
76	224 Of 2017	Phule Chitra (SPV-1546)	Mahatma Phule Krishi Vidyapeeth	New
77	225 Of 2017	Nirmal-18 (NACH-18)	Nirmal Seeds Pvt. Ltd.	New
78	226 Of 2017	KBMS 569	Kaveri Seed Company Limited	New
79	227 Of 2017	KBMS 253	Kaveri Seed Company Limited	New
80	228 Of 2017	KBMS 219	Kaveri Seed Company Limited	New
81	229 Of 2017	KBR 877	Kaveri Seed Company Limited	New
82	230 Of 2017	M 34	Jk Agri Genetics Ltd.	Extant (VCK)
83	231 Of 2017	M 104	Jk Agri Genetics Ltd.	Extant (VCK)
84	232 Of 2017	NBH-225	Nuziveedu Seeds Pvt. Ltd.	Extant (VCK)
85	233 Of 2017	Chenga Rangi	Taraknath Halder	Farmer
86	234 Of 2017	Nona Askul	Ayuf Ali Mulla & Others	Farmer
87	235 Of 2017	Kanta Rangi	Santosh Mondal & Others	Farmer
88	236 Of 2017	Dadshal	Amal Mondal & Others	Farmer
89	237 Of 2017	Lal Badshabhog- Ran	Anjan Kumar Sinha	Farmer
90	238 Of 2017	Tulsi Mukul- B1	Anjan Kumar Sinha	Farmer
91	239 Of 2017	Neta Shawl	Asim Mondal & Others	Farmer
92	240 Of 2017	ECO	Tarun Mandal	Farmer
93	241 Of 2017	Pan Boat	Sulata Mondal	Farmer
94	242 Of 2017	Hogla	Jyotsna Das & Others	Farmer
95	243 Of 2017	Olisent	Sulata Biswas & Others	Farmer
96	244 Of 2017	27P11 (IET 19766)	Pioneer Overseas Corporation	Extant (Notified)
97	245 Of 2017	JW-3020	Indian Council Of Agricultural Research (Icar)	Extant (Notified)
98	246 Of 2017	HD 3043	Indian Agriculture Research Institute, N.Delhi	New
99	247 Of 2017	Kere Ramadi	Dr. Richariya Kisani Samwardhan Samiti	Farmer
100	248 Of 2017	Kere Bhalu Dubraj	Dr. Richariya Kisani Samwardhan Samiti	Farmer
101	249 Of 2017	Kere Khuraban	Dr. Richariya Kisani Samwardhan Samiti	Farmer
102	250 Of 2017	Shyam Swarna	Ram Prakash Kesharwani	Farmer

Sl. No.	Registration No.	Denomination	Applicant Name	Type Of Variety
103	251 Of 2017	Lechade Dhan	Etwari	Farmer
104	252 Of 2017	Lal Gada Kunta	Sudru Ram Vek	Farmer
105	253 Of 2017	Jamna Phool	Nandlal Rathore	Farmer
106	254 Of 2017	Kere Dumaki	Dr. Richariya Kisani Samwardhan Samiti	Farmer
107	255 Of 2017	NS-157	Nirmal Seeds Pvt. Ltd.	New
108	256 Of 2017	NCGA-26	Nirmal Seeds Pvt. Ltd.	Extant (VCK)
109	257 Of 2017	Pnph 24 (IET 21406)	Prabhat Agri Biotech Ltd.	New
110	258 Of 2017	Shiats Dhan-1 (AAIR-2) (IET 20928)	Sam Higginbottom Institute Of Agriculture, Technology And Sciences	Extant (Notified)
111	259 Of 2017	27P61 (IET 21447)	Pioneer Overseas Corporation	Extant (Notified)
112	260 Of 2017	MP-3211 (JW-3211)	Indian Council Of Agricultural Research (ICAR)	Extant (Notified)
113	261 Of 2017	MP 3288 (JW 3288)	Indian Council Of Agricultural Research (ICAR)	Extant (Notified)
114	262 Of 2017	MP 3336 (JW 3336)	Indian Council Of Agricultural Research (ICAR)	Extant (Notified)
115	263 Of 2017	HBL 391 (GOKUL)	Indian Council Of Agricultural Research (ICAR)	Extant (Notified)
116	264 Of 2017	Snehil [MP (JW)-1142]	Indian Council Of Agricultural Research (ICAR)	Extant (Notified)
117	265 Of 2017	Ratan (CG 5016)	Indian Council Of Agricultural Research (ICAR)	Extant (Notified)
118	266 Of 2017	Pusa Sheetal (BHS 400)	Indian Council Of Agricultural Research (ICAR)	Extant (Notified)
119	267 Of 2017	VL Barley 56	Indian Council Of Agricultural Research (ICAR)	Extant (Notified)
120	268 Of 2017	MP-1203	Indian Council Of Agricultural Research (ICAR)	Extant (Notified)
121	269 Of 2017	Indira Barani Dhan-1 (RF-17-38-70) (IET-21205)	Indira Gandhi Krishi Vishwavidyalaya	Extant (Notified)
122	270 Of 2017	Kbms 227	Kaveri Seed Company Limited	New
123	271 Of 2017	NP-549 (SUMA)	Nuziveedu Seeds Ltd.	New
124	272 Of 2017	NCS-55	Nuziveedu Seeds Ltd.	Extant (VCK)
125	273 Of 2017	NCS-556	Nuziveedu Seeds Ltd.	Extant (VCK)
126	274 Of 2017	NC-107	Nuziveedu Seeds Ltd.	Extant (VCK)
127	275 Of 2017	BIO 60075I0	Dcm Shriram Limited	Extant (VCK)
128	276 Of 2017	SYN-TO-1952	Syngenta India Limited	Extant (VCK)
129	277 Of 2017	PCH-225	Prabhat Agri Biotech Ltd.	Extant (VCK)
130	278 Of 2017	NCS-904 BT	Nuziveedu Seeds Ltd.	New
131	279 Of 2017	NCS-863 BT2	Nuziveedu Seeds Ltd.	New
132	280 Of 2017	NCS-859 BT2	Nuziveedu Seeds Ltd.	New

Sl. No.	Registration No.	Denomination	Applicant Name	Type Of Variety
133	281 Of 2017	CO-0238	Indian Council Of Agricultural Research (ICAR)	New
134	282 Of 2017	KBMS 239	Kaveri Seed Company Limited	New
135	283 Of 2017	PCH-405 BT	Prabhat Agri Biotech Ltd.	New
136	284 Of 2017	KBR 831	Kaveri Seed Company Limited	New
137	285 Of 2017	KBR 823	Kaveri Seed Company Limited	New
138	286 Of 2017	SCFH-2178	Sungro Seeds Private Limited	New
139	287 Of 2017	Improve Shreya	Nuziveedu Seeds Ltd.	New
140	288 Of 2017	Satyam	Rasi Hy Veg Pvt. Ltd.	New
141	289 Of 2017	Hzd01-58	Hzpc Holland B.V.	New
142	290 Of 2017	Panamera	Hzpc Holland B.V.	New
143	291 Of 2017	Cheeni Sakkar	Ram Prakash Kesharwani	Farmer
144	292 Of 2017	Gud Sakkar	Ram Prakash Kesharwani	Farmer
145	293 Of 2017	Kere Hiran Banko	Dr. Richariya Kisani Samwardhan Samiti	Farmer
146	294 Of 2017	Kere Jalkeshar	Dr. Richariya Kisani Samwardhan Samiti	Farmer
147	295 Of 2017	Chandrakanti-B1	Anjan Kumar Sinha	Farmer
148	296 Of 2017	Boirmal	Sudarshan Sai Painkara	Farmer
149	297 Of 2017	Barsha	Srihari Naiya	Farmer
150	298 Of 2017	Kelesh-1981	Anjan Kumar Sinha	Farmer
151	299 Of 2017	Bauna	Aughstha Dungdung	Farmer
152	300 Of 2017	Arka	Anjan Kumar Sinha	Farmer
153	301 Of 2017	Kalachampa-R	Pabitra Mohan Sahu	Farmer
154	302 Of 2017	Malabati-Ran	Anjan Kumar Sinha	Farmer
155	303 Of 2017	Gitanjali	Kachimuddin Laskar And Others	Farmer
156	304 Of 2017	Kakua	Anjan Kumar Sinha	Farmer
157	305 Of 2017	Sita Shawl	Madhusudan Halder And Others	Farmer
158	306 Of 2017	Kere Kunhar	Dr. Richariya Kisani Samwardhan Samiti	Farmer
159	307 Of 2017	Janakisal	Anjan Kumar Sinha	Farmer
160	308 Of 2017	Mushley	President, Karen Welfare Association	Farmer
161	309 Of 2017	Sony-NBH227	Nuziveedu Seeds Ltd.	New
162	310 Of 2017	PCH-885 BT2	Prabhat Agri Biotech Ltd.	New
163	311 Of 2017	PCH-1411 BT	Prabhat Agri Biotech Ltd.	New
164	312 Of 2017	KBMS 251	Kaveri Seed Company Limited	New
165	313 Of 2017	RX 15660814	Monsanto Holding Pvt. Ltd.	New
166	314 Of 2017	RX 15660635	Monsanto Holding Pvt. Ltd.	New
167	315 Of 2017	Kastelli	Hzpc Holland B.V.	New

Sl. No.	Registration No.	Denomination	Applicant Name	Type Of Variety
168	316 Of 2017	Memphis	Hzpc Holland B.V.	New
169	317 Of 2017	Evora	Hzpc Holland B.V.	New
170	318 Of 2017	CSV 29R	Indian Council Of Agricultural Research (ICAR)	New
171	319 Of 2017	NC-1050	Nuziveedu Seeds Ltd.	Extant (VCK)
172	320 Of 2017	NC-169	Nuziveedu Seeds Ltd.	Extant (VCK)
173	321 Of 2017	NC-1154	Nuziveedu Seeds Ltd.	Extant (VCK)
174	322 Of 2017	NC-153	Nuziveedu Seeds Ltd.	Extant (VCK)
175	323 Of 2017	NC-157	Nuziveedu Seeds Ltd.	Extant (VCK)
176	324 Of 2017	NC-154	Nuziveedu Seeds Ltd.	Extant (VCK)
177	325 Of 2017	NC-190	Nuziveedu Seeds Ltd.	Extant (VCK)
178	326 Of 2017	C 5710	Maharashtra Hybrid Seeds Company Limited	Extant (VCK)
179	327 Of 2017	NC-89	Nuziveedu Seeds Ltd.	Extant (VCK)
180	328 Of 2017	NC-1135	Nuziveedu Seeds Ltd.	Extant (VCK)
181	329 Of 2017	NC-85	Nuziveedu Seeds Ltd.	Extant (VCK)
182	330 Of 2017	NCS-913	Nuziveedu Seeds Ltd.	Extant (VCK)
183	331 Of 2017	NCS-138	Nuziveedu Seeds Ltd.	Extant (VCK)
184	332 Of 2017	NC-152	Nuziveedu Seeds Ltd.	Extant (VCK)
185	333 Of 2017	NC-182	Nuziveedu Seeds Ltd.	Extant (VCK)
186	334 Of 2017	NCS-108	Nuziveedu Seeds Ltd.	Extant (VCK)
187	335 Of 2017	NC-188	Nuziveedu Seeds Ltd.	Extant (VCK)
188	336 Of 2017	NC-2153	Nuziveedu Seeds Ltd.	Extant (VCK)
189	337 Of 2017	NCS-113	Nuziveedu Seeds Ltd.	Extant (VCK)
190	338 Of 2017	Hardi Jeera	Dharohar Samiti	Farmer
191	339 Of 2017	Kudesar	Linguram Thakur	Farmer
192	340 Of 2017	ELA (White Flower Cardamom)	K.J. Baby	Farmer
193	341 Of 2017	Vasundhara Damini	Chandra Shekhar Singh	Farmer
194	342 Of 2017	Sai Neelkanth	Chandra Shekhar Singh	Farmer
195	343 Of 2017	Mayuri 6698	Chandra Shekhar Singh	Farmer
196	344 Of 2017	Ramshal	Madan Mohan Halder And Others	Farmer
197	345 Of 2017	Sada Patnai	Sudhir Halder And Others	Farmer
198	346 Of 2017	Durga	Debasis Shit	Farmer
199	347 Of 2017	Kalo Patnai	Srikanta Halder And Others	Farmer
200	348 Of 2017	Deshi Patnai	Sankar Halder And Others	Farmer
201	349 Of 2017	Sabita Patnai	Mridanga Haldar And Others	Farmer
202	350 Of 2017	Nico-Special	Bimal Mondal And Others	Farmer
203	351 Of 2017	Magura Paddy	Jalandhar Bag	Farmer
204	352 Of 2017	Chhetka	Ratha Bag	Farmer
205	353 Of 2017	Pakhi	Amit Das	Farmer
206	354 Of 2017	Galei Dhan	Harish Chander Bushia	Farmer
207	355 Of 2017	Sagitta	Hzpc Holland B.V.	New
208	356 Of 2017	Chhattisgarh Zinc Rice-1	Indira Gandhi Krishi Vishwavidyalaya	New

Sl. No.	Registration No.	Denomination	Applicant Name	Type Of Variety
209	357 Of 2017	Chhattisgarh Madhuraj Dhan-55	Indira Gandhi Krishi Vishwavidyalaya	New
210	358 Of 2017	SBJH-038	Sungro Seeds Private Limited	Extant (VCK)
211	359 Of 2017	NCS-959	Nuziveedu Seeds Ltd.	Extant (VCK)
212	360 Of 2017	MHBJ 114	Maharashtra Hybrid Seeds Company Limited	Extant (VCK)
213	361 Of 2017	SBJH-081	Sungro Seeds Private Limited	Extant (VCK)
214	362 Of 2017	SBJH-132	Sungro Seeds Private Limited	Extant (VCK)
215	363 Of 2017	NC-57	Nuziveedu Seeds Ltd.	Extant (VCK)
216	364 Of 2017	NCS-1335	Nuziveedu Seeds Ltd.	Extant (VCK)
217	365 Of 2017	NC-158	Nuziveedu Seeds Ltd.	Extant (VCK)
218	366 Of 2017	NCS-1332	Nuziveedu Seeds Ltd.	Extant (VCK)
219	367 Of 2017	NC-105	Nuziveedu Seeds Ltd.	Extant (VCK)
220	368 Of 2017	PC-P6107	Prabhat Agri Biotech Ltd.	Extant (VCK)
221	369 Of 2017	PC-P6507	Prabhat Agri Biotech Ltd.	Extant (VCK)
222	370 Of 2017	Vivek Maize Hybrid 47 (FH 3513)	Indian Council Of Agricultural Research (ICAR)	New
223	371 Of 2017	Dhm 121 (BH 41009)	Indian Council Of Agricultural Research (ICAR)	New
224	1 Of 2018	Supar Shyamali	Kalipada Samanta And Others	Farmer
225	2 Of 2018	Morishal	Sharot Chandra Mridha And Others	Farmer
226	3 Of 2018	Rani Akanda	Nibashi Munda And Others	Farmer
227	4 Of 2018	Raj Bhojh	Monoranjan Mondal And Others	Farmer
228	5 Of 2018	Kahinoor	Prabir Bose	Farmer
229	6 Of 2018	Kalo Mota	Arjun Halder And Others	Farmer
230	7 Of 2018	Khejurchhari	Gourpada Habli And Others	Farmer
231	8 Of 2018	Motormala	Santosh Kumar Halder	Farmer
232	9 Of 2018	Palui	Biswajit Mandal And Others	Farmer
233	10 Of 2018	Gangajali	Anjan Kumar Sinha	Farmer
234	11 Of 2018	Argir Ban	Sadananda Haldar And Others	Farmer
235	12 Of 2018	Hamai	Nilkamal Halder And Others	Farmer
236	13 Of 2018	Gheeas	Biren Mondal And Others	Farmer
237	14 Of 2018	Gavere Saru	Subhendu Das And Others	Farmer
238	15 Of 2018	Nangal Hanra	Gobinda Halder And Others	Farmer
239	16 Of 2018	Sada Mota	Sachipati Halder And Others	Farmer
240	17 Of 2018	Pal Bari	Biswajit Barman	Farmer
241	18 Of 2018	Bhasa Kalma	Himanshu Sekhar Maity And Others	Farmer
242	19 Of 2018	Barsa Lakshmi	Sabita Mondal And Others	Farmer
243	20 Of 2018	Mouley	Sukumar Mondal And Others	Farmer
244	21 Of 2018	Ure Banya	Narotham Haldar And Others	Farmer
245	22 Of 2018	Kalo Kumro	Anjan Kumar Sinha	Farmer
246	23 Of 2018	Birahi	Anjan Kumar Sinha	Farmer
247	24 Of 2018	Aush Panchali	Barun Giri And Others	Farmer

Sl. No.	Registration No.	Denomination	Applicant Name	Type Of Variety
248	25 Of 2018	Olkochuri	Arabinda Jantua And Others	Farmer
249	26 Of 2018	Drk	Dadaji Ramaji Khobragade	Farmer
250	27 Of 2018	Marich Muth	Sushanta Roy	Farmer
251	28 Of 2018	Marchal	Basudeb Halder And Others	Farmer
252	29 Of 2018	Giriraj (Drmrij 31)	Indian Council Of Agricultural Research	New
253	30 Of 2018	G 3782528	Monsanto Holdings Pvt. Ltd.	New
254	31 Of 2018	M013	Bayer Crop Science Ag	New
255	32 Of 2018	Mhtm 303	Maharashtra Hybrid Seeds Company Limited	New
256	33 Of 2018	Utkal Green	Nuziveedu Seeds Ltd.	New
257	34 Of 2018	NBH-2930	Nuziveedu Seeds Ltd.	New
258	35 Of 2018	KOL 1165	Kaveri Seed Company Limited	New
259	36 Of 2018	JKTH 5202	Jk Agri Genetics Ltd.	New
260	37 Of 2018	JKTH 811	Jk Agri Genetics Ltd.	New
261	38 Of 2018	JKTH 5419	Jk Agri Genetics Ltd.	New
262	39 Of 2018	BJ 60311	Maharashtra Hybrid Seeds Company Limited	New
263	40 Of 2018	KTL 3237	Kaveri Seed Company Limited	New
264	41 Of 2018	JKBH 1108	Jk Agri Genetics Ltd.	New
265	42 Of 2018	JKBH 1093	Jk Agri Genetics Ltd.	New
266	43 Of 2018	JKBH 1100	Jk Agri Genetics Ltd.	New
267	44 Of 2018	Taurus	Hzpc Holland B.V.	New
268	45 Of 2018	Crisps4all	Hzpc Holland B.V.	New
269	46 Of 2018	Nirmal-900 (NTL-900)	Nirmal Seeds Pvt. Ltd.	New
270	47 Of 2018	Nirmal-383 (NSO-383)	Nirmal Seeds Pvt. Ltd.	New
271	48 Of 2018	Sanjivani-34	Basant Agro Tech (I) Ltd	New
272	49 Of 2018	RX15640414	Monsanto Holdings Pvt. Ltd.	New
273	50 Of 2018	JKR-101	Jk Agri Genetics Ltd.	New
274	51 Of 2018	PAN 804	Pan Seeds Pvt Ltd	New
275	52 Of 2018	Improve Bhagya	Nuziveedu Seeds Ltd.	New
276	53 Of 2018	JKPH-24104	Jk Agri Genetics Ltd.	New
277	54 Of 2018	P3303	Pioneer Overseas Corporation	New
278	55 Of 2018	Spv 135 (Super Aman)	Super Agri Seeds Pvt Ltd	Extant (VCK)
279	56 Of 2018	Gujrat Sugarcane-7 (CON 04131)	Navsari Agricultural University	Extant (Notified)
280	57 Of 2018	Gujrat Sugarcane-4 (CON 03131)	Navsari Agricultural University	Extant (Notified)
281	58 Of 2018	Gujrat Sugarcane-6 (CON 05072)	Navsari Agricultural University	Extant (Notified)
282	59 Of 2018	Gujrat Sugarcane-8 (CON 07072)	Navsari Agricultural University	Extant (Notified)
283	60 Of 2018	Gujrat Sugarcane-5 (CON 05071)	Navsari Agricultural University	Extant (Notified)

Sl. No.	Registration No.	Denomination	Applicant Name	Type Of Variety
284	61 Of 2018	Punjab Kareli-1	Punjab Agricultural University	Extant (Notified)
285	62 Of 2018	Ll 931	Punjab Agricultural University	Extant (Notified)
286	63 Of 2018	Mash 391 (Lu 391)	Punjab Agricultural University	Extant (Notified)
287	64 Of 2018	Mash 114	Punjab Agricultural University	Extant (Notified)
288	65 Of 2018	GSC 7 (GSC 101)	Punjab Agricultural University	Extant (Notified)
289	66 Of 2018	PBW 550	Punjab Agricultural University	Extant (Notified)
290	67 Of 2018	PBW 502	Punjab Agricultural University	Extant (Notified)
291	68 Of 2018	PDW 291	Punjab Agricultural University	Extant (Notified)
292	69 Of 2018	PBW 596	Punjab Agricultural University	Extant (Notified)
293	70 Of 2018	Pbw 590	Punjab Agricultural University	Extant (Notified)
294	71 Of 2018	Pusa Baker (Hs-490)	Indian Council Of Agricultural Research	Extant (Notified)
295	72 Of 2018	Nandyala Sanaga 1 (Nbeg 3)	Acharya N.G. Ranga Agricultural University	Extant (Notified)
296	73 Of 2018	Mahamana 113 (Hub 113)	Indian Council Of Agricultural Research	Extant (Notified)
297	74 Of 2018	GV-2	Navsari Agricultural University	Extant (Notified)
298	75 Of 2018	PKV NT-11 (NT-11-91)	Dr. Panjabrao Deshmukh Krishi Vidyapeeth	Extant (Notified)
299	76 Of 2018	MPO (JW) 1215 (MPO 1215)	Indian Council Of Agricultural Research	Extant (Notified)
300	77 Of 2018	Kohinoor (NBCH-66)	Navbharat Seeds Pvt Ltd	Extant (Notified)
301	78 Of 2018	Smarak (OSC 560)	Orissa University Of Agriculture & Technology	Extant (Notified)
302	79 Of 2018	PDKV Washim (WSM 1472)	Dr. Panjabrao Deshmukh Krishi Vidyapeeth	Extant (Notified)
303	80 Of 2018	Banda Badi	Joni Suren	Farmer
304	81 Of 2018	Hainyom Baba	Ganju Pahan	Farmer
305	82 Of 2018	Cotton Queen (SIMA)	Sumanta Misra	Farmer
306	83 Of 2018	Babur Buta	Bhagat Ram Kma, S/O Lakhurai	Farmer
307	84 Of 2018	Bandi Marhaan Dhan	Bandiram	Farmer
308	85 Of 2018	Machari Kaata Dhan	Sukhdev	Farmer
309	86 Of 2018	Samsari Dhan	Pilaram Kashyap	Farmer

Sl. No.	Registration No.	Denomination	Applicant Name	Type Of Variety
310	87 Of 2018	Sukhi Dhan	Kumaram	Farmer
311	88 Of 2018	Kuti Chudi	Sambhunath Sethia	Farmer
312	89 Of 2018	Rela Dhan	Baldev Kumar Kudaami	Farmer
313	90 Of 2018	Kusuma Paddy	Arakhita Bhoi	Farmer
314	91 Of 2018	Salma	Afjal Hussain	Farmer
315	92 Of 2018	Bhadui	Papu Pal	Farmer
316	93 Of 2018	Budamanji Paddy	Ratnakar Patra	Farmer
317	94 Of 2018	Baiid-50 Dhan	Ujjawal Beej Gram Jaypur Chutiaro Govindpur	Farmer
318	95 Of 2018	Jharna	Shyam Chandra Lala	Farmer
319	96 Of 2018	Gokul Dhan	Gokul Ravani	Farmer
320	97 Of 2018	Baithani Dhan	Sukhram	Farmer
321	98 Of 2018	Gandho	Linguram Thakur	Farmer
322	99 Of 2018	Pancham Ghathi Dhan	Pancham Ram Nag, S/O Nandram Nag	Farmer
323	100 Of 2018	Tulsi Bahal Dhan	Giridhari Mahto	Farmer
324	101 Of 2018	Vijay Nanded	Dr. Richariya Kisani Samwardhan Samiti	Farmer
325	102 Of 2018	Kari Kamod	Dr. Richariya Kisani Samwardhan Samiti	Farmer
326	103 Of 2018	Kere Ratan Chudi	Dr. Richariya Kisani Samwardhan Samiti	Farmer
327	104 Of 2018	Kere Kosavari	Dr. Richariya Kisani Samwardhan Samiti	Farmer
328	105 Of 2018	Majori	Dr. Richariya Kisani Samwardhan Samiti	Farmer
329	106 Of 2018	Nanded	Dr. Richariya Kisani Samwardhan Samiti	Farmer
330	107 Of 2018	Atma Sheetal	Dr. Richariya Kisani Samwardhan Samiti	Farmer
331	108 Of 2018	Bhusu	Dr. Richariya Kisani Samwardhan Samiti	Farmer
332	109 Of 2018	Sutai Dhan	Dr. Richariya Kisani Samwardhan Samiti	Farmer
333	110 Of 2018	Elaychi	Dr. Richariya Kisani Samwardhan Samiti	Farmer
334	111 Of 2018	Bangla Gurmatiya	Dr. Richariya Kisani Samwardhan Samiti	Farmer
335	112 Of 2018	Baash Pttri	Dr. Richariya Kisani Samwardhan Samiti	Farmer
336	113 Of 2018	Turiyagada Gutang	Dr. Richariya Kisani Samwardhan Samiti	Farmer
337	114 Of 2018	Do Dana	Dr. Richariya Kisani Samwardhan Samiti	Farmer
338	115 Of 2018	Kutting	Dr. Richariya Kisani Samwardhan Samiti	Farmer

Sl. No.	Registration No.	Denomination	Applicant Name	Type Of Variety
339	116 Of 2018	Deepak Ratna	Dr. Richariya Kisani Samwardhan Samiti	Farmer
340	117 Of 2018	Bhata Luchai	Dr. Richariya Kisani Samwardhan Samiti	Farmer
341	118 Of 2018	Nande Chennur	Dr. Richariya Kisani Samwardhan Samiti	Farmer
342	119 Of 2018	Pandrikuda Dhan	Chalki	Farmer
343	120 Of 2018	Sambhughathi Dhan	Sambhunath Sethia	Farmer
344	121 Of 2018	Falod Dhan	Mundak Ram	Farmer
345	122 Of 2018	Borni	Dilip Roy	Farmer
346	123 Of 2018	Satia	Dilip Roy	Farmer
347	124 Of 2018	Agurpak	Dilip Roy	Farmer
348	125 Of 2018	Singhchoura Chindmouri	Rameshwar Prasad Tiwari	Farmer
349	126 Of 2018	Chudi Dhan-Thakur	Raju Thakur, S/O Maniram Thakur	Farmer
350	127 Of 2018	Bobale Dhan	Sukka Dev	Farmer
351	128 Of 2018	Dhan (Lal Dhusar)	Ranjit Mandal	Farmer
352	129 Of 2018	Kanak Jeera	Sashikant Singh	Farmer
353	130 Of 2018	Ikma Dhan	Bhimsen Vek	Farmer
354	131 Of 2018	Baada Guda	Ghasiram Yadav	Farmer
355	132 Of 2018	Kalma-III	Amarkanan Rural Socio-Environmental Welfare Society (Arsw Society)	Farmer
356	133 Of 2018	Mayna	Amarkanan Rural Socio-Environmental Welfare Society (Arsw Society)	Farmer
357	134 Of 2018	Dhan (Aakash)	Sonali Mandal	Farmer
358	135 Of 2018	Kalamkathi Laksmi Dhan	Parmeshwar Singh Chaudhary	Farmer
359	136 Of 2018	Dhusri Sada	Pyar Ali Ansari	Farmer
360	137 Of 2018	Radhunipagal-1	Amarkanan Rural Socio-Environmental Welfare Society (Arsw Society)	Farmer
361	138 Of 2018	Meghna	Amarkanan Rural Socio-Environmental Welfare Society (Arsw Society)	Farmer
362	139 Of 2018	Valki-M	Amarkanan Rural Socio-Environmental Welfare Society (Arsw Society)	Farmer
363	140 Of 2018	Seshphal	Amarkanan Rural Socio-Environmental Welfare Society (Arsw Society)	Farmer
364	141 Of 2018	Purnendu-I	Amarkanan Rural Socio-Environmental Welfare Society (Arsw Society)	Farmer

Sl. No.	Registration No.	Denomination	Applicant Name	Type Of Variety
365	142 Of 2018	Parbati	Amarkanan Rural Socio-Environmental Welfare Society (Arsw Society)	Farmer
366	143 Of 2018	Boishali	Amarkanan Rural Socio-Environmental Welfare Society (Arsw Society)	Farmer
367	144 Of 2018	Megha	Amarkanan Rural Socio-Environmental Welfare Society (Arsw Society)	Farmer
368	145 Of 2018	Chinaboro-Ii	Amarkanan Rural Socio-Environmental Welfare Society (Arsw Society)	Farmer
369	146 Of 2018	Siddhanta-I	Amarkanan Rural Socio-Environmental Welfare Society (Arsw Society)	Farmer
370	147 Of 2018	Binnidhan -Ran	Amarkanan Rural Socio-Environmental Welfare Society (Arsw Society)	Farmer
371	148 Of 2018	Badamidhan	Amarkanan Rural Socio-Environmental Welfare Society (Arsw Society)	Farmer
372	149 Of 2018	Kaloboro-I	Amarkanan Rural Socio-Environmental Welfare Society (Arsw Society)	Farmer
373	150 Of 2018	Pritha	Amarkanan Rural Socio-Environmental Welfare Society (Arsw Society)	Farmer
374	151 Of 2018	Nandini	Amarkanan Rural Socio-Environmental Welfare Society (Arsw Society)	Farmer
375	152 Of 2018	Lalpatni-SK	Amarkanan Rural Socio-Environmental Welfare Society (Arsw Society)	Farmer
376	153 Of 2018	Ratna-I	Amarkanan Rural Socio-Environmental Welfare Society (Arsw Society)	Farmer
377	154 Of 2018	Baskanta	Amarkanan Rural Socio-Environmental Welfare Society (Arsw Society)	Farmer
378	155 Of 2018	Sona Saari	Dharohar Samiti	Farmer
379	156 Of 2018	Mokdo	Dharohar Samiti	Farmer
380	157 Of 2018	Pankhiraj -Ran	Amarkanan Rural Socio-Environmental Welfare Society (Arsw Society)	Farmer

Sl. No.	Registration No.	Denomination	Applicant Name	Type Of Variety
381	158 Of 2018	Tulaipanji-Ran	Amarkanan Rural Socio-Environmental Welfare Society (Arsw Society)	Farmer
382	159 Of 2018	Baskati -Ran	Amarkanan Rural Socio-Environmental Welfare Society (Arsw Society)	Farmer
383	160 Of 2018	Nidhi - L	Amarkanan Rural Socio-Environmental Welfare Society (Arsw Society)	Farmer
384	161 Of 2018	Dadkhani-II	Amarkanan Rural Socio-Environmental Welfare Society (Arsw Society)	Farmer
385	162 Of 2018	Latisal-II	Amarkanan Rural Socio-Environmental Welfare Society (Arsw Society)	Farmer
386	163 Of 2018	Heeramoti	Amarkanan Rural Socio-Environmental Welfare Society (Arsw Society)	Farmer
387	164 Of 2018	Kalpana	Amarkanan Rural Socio-Environmental Welfare Society (Arsw Society)	Farmer
388	165 Of 2018	Mandira	Amarkanan Rural Socio-Environmental Welfare Society (Arsw Society)	Farmer
389	166 Of 2018	Bhudeb - I	Amarkanan Rural Socio-Environmental Welfare Society (Arsw Society)	Farmer
390	167 Of 2018	Jhumur	Amarkanan Rural Socio-Environmental Welfare Society (Arsw Society)	Farmer
391	168 Of 2018	Giridhari	Amarkanan Rural Socio-Environmental Welfare Society (Arsw Society)	Farmer
392	169 Of 2018	Anjali-1	Amarkanan Rural Socio-Environmental Welfare Society (Arsw Society)	Farmer
393	170 Of 2018	Shrabanti	Amarkanan Rural Socio-Environmental Welfare Society (Arsw Society)	Farmer
394	171 Of 2018	Pusa Losar (BH-380)	Indian Council Of Agricultural Research	Extant (Notified)
395	172 Of 2018	Vl Barley 85	Indian Council Of Agricultural Research	Extant (Notified)
396	173 Of 2018	Arka Bindu	Indian Institute Of Horticultural Research	Extant (Notified)

Sl. No.	Registration No.	Denomination	Applicant Name	Type Of Variety
397	174 Of 2018	Arka Pitamber	Indian Institute Of Horticultural Research	Extant (Notified)
398	175 Of 2018	Yamuna Safed-5 (G-189)	National Horticultural Research & Development Foundation	Extant (Notified)
399	176 Of 2018	Nilgiri Khapli (HW 1098)	Indian Council Of Agricultural Research	Extant (Notified)
400	177 Of 2018	UH-1 (UH 04-06)	Ccs Haryana Agricultural University	Extant (Notified)
401	178 Of 2018	CO W2	Indian Council Of Agricultural Research	Extant (Notified)
402	179 Of 2018	CR Dhan 40 (IET 19253)	Indian Council Of Agricultural Research	Extant (Notified)
403	180 Of 2018	Sahyadri-5	Dr. Balasaheb Sawant Konkan Krishi Vidyapeeth	Extant (Notified)
404	181 Of 2018	GM-3 (Gujrat Mustard-3)	Sardarkrushinagar Dantiwada Agricultural University	Extant (Notified)
405	182 Of 2018	DS-5	University Of Agricultural Sciences	Extant (Notified)
406	183 Of 2018	Digvijay	Mahatma Phule Krishi Vidyapeeth	Extant (Notified)
407	184 Of 2018	VLB118 (VL JAU118)	Indian Council Of Agricultural Research	Extant (Notified)
408	185 Of 2018	PBW 644	Punjab Agricultural University	Extant (Notified)
409	186 Of 2018	Punjab Samrat (WIR-4446)	Punjab Agricultural University	Extant (Notified)
410	187 Of 2018	PBR 357	Punjab Agricultural University	Extant (Notified)
411	188 Of 2018	JGL 11470 (Jagtial Mahsuri)	Professor Jayashankar Telangana State Agricultural University	Extant (Notified)
412	189 Of 2018	Jgl 3855 (Karimnagar Samba)	Professor Jayashankar Telangana State Agricultural University	Extant (Notified)
413	190 Of 2018	Suganda Samba (RNR-2465)	Professor Jayashankar Telangana State Agricultural University	Extant (Notified)
414	191 Of 2018	JGL 3828 (Manair Sona)	Professor Jayashankar Telangana State Agricultural University	Extant (Notified)
415	192 Of 2018	JGL 3844 (Jagtial Samba)	Professor Jayashankar Telangana State Agricultural University	Extant (Notified)

Sl. No.	Registration No.	Denomination	Applicant Name	Type Of Variety
416	193 Of 2018	Shobhini (RNR-2354) (IET-21260)	Professor Jayashankar Telangana State Agricultural University	Extant (Notified)
417	194 Of 2018	Sheethal (WGL-283) (IET-20987)	Professor Jayashankar Telangana State Agricultural University	Extant (Notified)
418	195 Of 2018	Ramappa (WGL-23985) (IET-17856)	Professor Jayashankar Telangana State Agricultural University	Extant (Notified)
419	196 Of 2018	Telangana Sona (Rnr-15048) (IET 23746)	Professor Jayashankar Telangana State Agricultural University	Extant (Notified)
420	197 Of 2018	JGL18047 (Bathukamma)	Professor Jayashankar Telangana State Agricultural University	Extant (Notified)
421	198 Of 2018	L 555 (GLK-26155)	Punjab Agricultural University	Extant (Notified)
422	199 Of 2018	PBG 7 (GL 26054)	Punjab Agricultural University	Extant (Notified)
423	200 Of 2018	Sharada (MAS 946-1)	University Of Agricultural Sciences	Extant (Notified)
424	201 Of 2018	Ona Siri (MAS 26)	University Of Agricultural Sciences	Extant (Notified)
425	202 Of 2018	PSH 996	Punjab Agricultural University	Extant (Notified)
426	203 Of 2018	PL751	Punjab Agricultural University	Extant (Notified)
427	204 Of 2018	HMT 100-1	University Of Agricultural Sciences	Extant (Notified)
428	205 Of 2018	NBH-801 (Priyanka)	Nuziveedu Seeds Ltd.	Extant (VCK)
429	206 Of 2018	NBJ-16	Nuziveedu Seeds Ltd.	Extant (VCK)
430	207 Of 2018	JKC 708	Jk Agri Genetics Ltd.	Extant (VCK)
431	208 Of 2018	SBJH-033	Sungro Seeds Private Limited	Extant (VCK)
432	209 Of 2018	Poornima(NCH-1166)	Nirmal Seeds Pvt. Ltd.	Extant (VCK)
433	210 Of 2018	NC-126	Nuziveedu Seeds Ltd.	Extant (VCK)
434	211 Of 2018	JK KAJAL	Jk Agri Genetics Ltd.	Extant (VCK)
435	212 Of 2018	JKC 752	Jk Agri Genetics Ltd.	Extant (VCK)
436	213 Of 2018	NC-180	Nuziveedu Seeds Ltd.	Extant (VCK)
437	214 Of 2018	JKC 756	Jk Agri Genetics Ltd.	Extant (VCK)
438	215 Of 2018	JKC 724	Jk Agri Genetics Ltd.	Extant (VCK)
439	216 Of 2018	Sanjay (NBH-627)	Nirmal Seeds Pvt. Ltd.	Extant (VCK)
440	217 Of 2018	Ankur-786 (ARBH-786)	Ankur Seeds Pvt. Ltd.	Extant (VCK)
441	218 Of 2018	PCH-115	Prabhat Agri Biotech Ltd.	Extant (VCK)
442	219 Of 2018	KPH-412	Kaveri Seed Company Limited	Extant (VCK)

Sl. No.	Registration No.	Denomination	Applicant Name	Type Of Variety
443	220 Of 2018	KPH-272	Kaveri Seed Company Limited	Extant (VCK)
444	221 Of 2018	PC-P651	Prabhat Agri Biotech Ltd.	Extant (VCK)
445	222 Of 2018	SBJH-010	Sungro Seeds Private Limited	Extant (VCK)
446	223 Of 2018	NBJ-21	Nuziveedu Seeds Ltd.	Extant (VCK)
447	224 Of 2018	PCH-923 Bt	Prabhat Agri Biotech Ltd.	Extant (VCK)
448	225 Of 2018	Changro Lakshmi Bhog	Tirloki	Farmer
449	226 Of 2018	NC-189	Nuziveedu Seeds Ltd.	Extant (VCK)
450	227 Of 2018	Nirmal-467 (NBH-467)	Nirmal Seeds Pvt. Ltd.	Extant (VCK)
451	228 Of 2018	NC-159	Nuziveedu Seeds Ltd.	Extant (VCK)
452	229 Of 2018	NPH-369	Nuziveedu Seeds Ltd.	Extant (VCK)
453	230 Of 2018	NP-22 R	Nuziveedu Seeds Ltd.	Extant (VCK)
454	231 Of 2018	NC-1051	Nuziveedu Seeds Ltd.	Extant (VCK)
455	232 Of 2018	JKC 701	Jk Agri Genetics Ltd.	Extant (VCK)
456	233 Of 2018	OK-49	Nuziveedu Seeds Ltd.	Extant (VCK)
457	234 Of 2018	MHBJ 115	Maharashtra Hybrid Seeds Company Limited	Extant (VCK)
458	235 Of 2018	NCS-11	Nuziveedu Seeds Ltd.	Extant (VCK)
459	236 Of 2018	PC-P5607	Prabhat Agri Biotech Ltd.	Extant (VCK)
460	237 Of 2018	NCS-18	Nuziveedu Seeds Ltd.	Extant (VCK)
461	238 Of 2018	NBH-538 (Ganesh)	Nuziveedu Seeds Ltd.	Extant (VCK)
462	239 Of 2018	NC-142	Nuziveedu Seeds Ltd.	Extant (VCK)
463	240 Of 2018	NC-160	Nuziveedu Seeds Ltd.	Extant (VCK)
464	241 Of 2018	Pusa Rohini	Indian Council Of Agricultural Research	Extant (VCK)
465	242 Of 2018	MOK 60029	Maharashtra Hybrid Seeds Company Limited	Extant (VCK)
466	243 Of 2018	Mohini	M/S Shakti Vardhak Hybrid Seeds Pvt Ltd	Extant (VCK)
467	244 Of 2018	SBJH-143	Sungro Seeds Private Limited	Extant (VCK)
468	245 Of 2018	Prn 36	Nuziveedu Seeds Ltd.	Extant (VCK)
469	246 Of 2018	SBJH-305	Sungro Seeds Private Limited	Extant (VCK)
470	247 Of 2018	IISR Avinash	Indian Council Of Agricultural Research	Extant (VCK)
471	248 Of 2018	Jk Vijay Kiran	Jk Agri Genetics Ltd.	Extant (VCK)
472	249 Of 2018	Ok-608	Nuziveedu Seeds Ltd.	Extant (VCK)
473	250 Of 2018	Lutni Sarson	Parmanand	Farmer
474	251 Of 2018	Barai Sarso	Mangan Khalkho	Farmer
475	252 Of 2018	Bahgi Sarson	Mangan Khalkho	Farmer
476	253 Of 2018	Kalamkati-Ran	Anjan Kumar Sinha	Farmer
477	254 Of 2018	Danagurguri	Anjan Kumar Sinha	Farmer
478	255 Of 2018	Gerua Mudi	Dedi Khan	Farmer
479	256 Of 2018	Aada Sail	Shyam Charan Manjhi	Farmer
480	257 Of 2018	Lonchi	Bhola Pahan	Farmer
481	258 Of 2018	Pundi Raisi	Gomeya Munda	Farmer

Sl. No.	Registration No.	Denomination	Applicant Name	Type Of Variety
482	259 Of 2018	Rudni	Zuber Khan	Farmer
483	260 Of 2018	Dhusri	Sohrai Pahan	Farmer
484	261 Of 2018	Tenwa (CHHOTA)	Jagmohan Bediya	Farmer
485	262 Of 2018	Mudi Futa	Magdali Aind	Farmer
486	263 Of 2018	Randhi Lal	Mati Singi Pahan	Farmer
487	264 Of 2018	Kohra Fool	Sohrya Bediya	Farmer
488	265 Of 2018	Sikki	Budh Ram Mahato	Farmer
489	266 Of 2018	Bala Goda	Lali Bediya	Farmer
490	267 Of 2018	Ghoda Sail	Rampod Singh	Farmer
491	268 Of 2018	Bagh Panjar	Kalinath Munda	Farmer
492	269 Of 2018	Kandu Phool	Johan Kulu	Farmer
493	270 Of 2018	Rais Dhan	Lal Dhari Mahato	Farmer
494	271 Of 2018	Khrika Kuchi	Chulu Singh	Farmer
495	272 Of 2018	Tal Mugur	Vrihi	Farmer
496	273 Of 2018	Ghasraiz	Vrihi	Farmer
497	274 Of 2018	Bali Bhajna	Vrihi	Farmer
498	275 Of 2018	Kaya	Vrihi	Farmer
499	276 Of 2018	Ajirman (=Ahirman)	Vrihi	Farmer
500	277 Of 2018	Nona	Vrihi	Farmer
501	278 Of 2018	Lal Getu	Vrihi	Farmer
502	279 Of 2018	Matla	Vrihi	Farmer
503	280 Of 2018	Bourani	Vrihi	Farmer
504	281 Of 2018	Nona Khirish	Vrihi	Farmer
505	282 Of 2018	Ganjeijata-K	Niranjan Pradhan And Others	Farmer
506	283 Of 2018	Punjuki Swarna	Padamal Krushal Mancha, Jubaraj Naik & Others	Farmer
507	284 Of 2018	Ngrh-Ranapur-Baigan Manjia	Gananidhi Sundaro And Others	Farmer
508	285 Of 2018	Parvatjira	Gupteswar Shg Nini Pradhan & Others	Farmer
509	286 Of 2018	Boudh-Maljholi	Chhayakanta Sahu	Farmer
510	287 Of 2018	Panikajala	Dandapani Sahoo And Others	Farmer
511	288 Of 2018	Bagudi	Akrura Pradhan And Others	Farmer
512	289 Of 2018	Anu	Ajaya Kumar Pradhan And Others	Farmer
513	290 Of 2018	Bauda Champa	Markanda Charan Sahoo	Farmer
514	291 Of 2018	Angl-Sunapani	Gagan Amanta And Others	Farmer
515	292 Of 2018	Karhani	Paras Munda	Farmer
516	293 Of 2018	Morisali	Community Of Farmers	Farmer
517	294 Of 2018	Tulsi Bhog-Ban	Anjan Kumar Sinha	Farmer
518	295 Of 2018	Mandai	Santosh Prasad	Farmer
519	296 Of 2018	Boudh-Kusuma	Padamal Krushal Mancha, Nabin Kumar Mahakud & Others	Farmer
520	297 Of 2018	Boudh-Maljhalka	Himansu Ranbida And Others	Farmer

Sl. No.	Registration No.	Denomination	Applicant Name	Type Of Variety
521	298 Of 2018	Sahara Bhojani	Kailash Chandra Pradhan And Others	Farmer
522	299 Of 2018	Boudh-Champeisiali	Siba Kumar Bishi	Farmer
523	300 Of 2018	Angl-Pimpala Basha	Janak Sahoo And Others	Farmer
524	301 Of 2018	Baudia Champa-A	Ashok Behera And Others	Farmer
525	302 Of 2018	Chinamali-A	Prafulla Kumar Rout And Others	Farmer
526	303 Of 2018	Kudrat 3	Prakash Singh Raghuvanshi	Farmer
527	304 Of 2018	Kalahaosu	Pusau	Farmer
528	305 Of 2018	Mohlayan Bako Dhan	Vijay Nagesh	Farmer
529	306 Of 2018	Tendumori Dhan	Devnath Beck	Farmer
530	307 Of 2018	Dadbako	Moh. Muslim Foordosi	Farmer
531	308 Of 2018	Safri-1 Nakna	Ram Kumar Nai	Farmer
532	309 Of 2018	Gangtai Dhan	Kameshwar Nagesh	Farmer
533	310 Of 2018	Khirasar	Bhuvneshwar Ekka	Farmer
534	311 Of 2018	Kerakanghi	Lodo Tigga	Farmer
535	312 Of 2018	Ganga Dhan	Mangal Khalko	Farmer
536	313 Of 2018	Nata Kalma	Ratnu Oraon	Farmer
537	314 Of 2018	Kala Neta	Ajit Kulu	Farmer
538	315 Of 2018	Bar Garo Mah	Sonali Pathar Parichalana Samittee	Farmer
539	316 Of 2018	Annapurna	Ramgopal Sharma	Farmer
540	317 Of 2018	Atharav	Krishan Kumar	Farmer
541	318 Of 2018	Ramkali	Rajaram	Farmer
542	319 Of 2018	Kamini	Gangaram	Farmer
543	320 Of 2018	Rsf	Ram Svarup	Farmer
544	321 Of 2018	MAVLI-4	Dharohar Samiti	Farmer
545	322 Of 2018	MAVLI-2	Dharohar Samiti	Farmer
546	323 Of 2018	Titir Phakhi	Dharohar Samiti	Farmer
547	324 Of 2018	Rami Gaali	Dharohar Samiti	Farmer
548	325 Of 2018	Lal Bako	Dharohar Samiti	Farmer
549	326 Of 2018	Leem Dhan	Dharohar Samiti	Farmer
550	327 Of 2018	KAKDO	Dharohar Samiti	Farmer
551	328 Of 2018	Lazni Super 1	Dharohar Samiti	Farmer
552	329 Of 2018	Lazni Super-2	Dharohar Samiti	Farmer
553	330 Of 2018	Safri	Dharohar Samiti	Farmer
554	331 Of 2018	Mavli-3	Dharohar Samiti	Farmer
555	332 Of 2018	Machri Poti	Dharohar Samiti	Farmer
556	333 Of 2018	Ajam Dhan	Dharohar Samiti	Farmer
557	334 Of 2018	Bhaies Paath	Dharohar Samiti	Farmer
558	335 Of 2018	Mavli-1	Dharohar Samiti	Farmer
559	336 Of 2018	Gaanja Kali	Ramesh Kumar Sahoo	Farmer
560	337 Of 2018	Lali Chuvada	Anil Kumar Nag	Farmer
561	338 Of 2018	Dhaniya Dhan	Sandeep Koram	Farmer
562	339 Of 2018	Jeerafool Pusla	Nandkumar Chekha	Farmer
563	340 Of 2018	A-2000	Ram Ishwar Ram	Farmer

Sl. No.	Registration No.	Denomination	Applicant Name	Type Of Variety
564	341 Of 2018	RAJ-1992	Bhola Ray	Farmer
565	342 Of 2018	Pateni	Sri Pratap Maharana And Others	Farmer
566	343 Of 2018	Gutura	Purna Ch. Swain And Others	Farmer
567	344 Of 2018	Pandukayan	Saluka Munda And Others	Farmer
568	345 Of 2018	Koraput-Samudrabali	Subash Ch. Bhimidi	Farmer
569	346 Of 2018	Angl-Kalachampa	Atithi Roul And Others	Farmer
570	347 Of 2018	Punein	Durjyodhan Pradhan	Farmer
571	348 Of 2018	Parakunja	Raghunath Pradhan And Others	Farmer
572	349 Of 2018	Haladigundi-S	Balaram Pradhan	Farmer
573	350 Of 2018	Haldia Chinamal	Chandramani Pradhan	Farmer
574	351 Of 2018	Mugudhi-Su	Dubraj Purseth And Others	Farmer
575	352 Of 2018	Akshay	Akshay Kumar	Farmer
576	353 Of 2018	B P	Sureshpal Singh	Farmer
577	354 Of 2018	Kera Kan	Shri Raja Ram	Farmer
578	355 Of 2018	Petre	Shiv Shankar Singh Painkara	Farmer
579	356 Of 2018	Barha Sal	Nand Kishor Sai Parha	Farmer
580	357 Of 2018	Tulsimala	Shri Jagdish Sai Painkra	Farmer
581	358 Of 2018	Bhagalpuri	Sukal Sai	Farmer
582	359 Of 2018	Kalam Luchai	Shri Jagmohan Sai	Farmer
583	360 Of 2018	Kund Dhan	Shri Jaishankar Sai	Farmer
584	361 Of 2018	Jeera Sai	Birbal Sai	Farmer
585	362 Of 2018	Jawa Phool	Shri Shashi Prakash Parha	Farmer
586	363 Of 2018	Jou Ful	Amar Singh	Farmer
587	364 Of 2018	Morada Janglijata	Dukhiram Tipiria	Farmer
588	365 Of 2018	Bhanjanagar-Kalajira	Maheswar Patra	Farmer
589	366 Of 2018	Balangir Rajkarani	Ananta Bhoi	Farmer
590	367 Of 2018	Subarnapur Yubraj	Nilamani Purohit	Farmer
591	368 Of 2018	Balangir Rani Saheba	Bishnu Prasad Tandi	Farmer
592	369 Of 2018	Bhadrak Nagara	Tilak Gyanendra Behera	Farmer
593	370 Of 2018	Bargarh Nagara	Sunil Kumar Nag	Farmer
594	371 Of 2018	Naktideul Laxmibilas	Kaushalya Pradhan	Farmer
595	372 Of 2018	Bargarh Malpatri	Ramesh Ch. Nag	Farmer
596	373 Of 2018	Balangir Hiran	Chittaranjan Thanapati	Farmer
597	374 Of 2018	Sundargarh Khandasagar	Kishore Ch Behera	Farmer
598	375 Of 2018	Balangir Prabat Jeera	Chakradhar Patel	Farmer
599	376 Of 2018	Nuapada Jabaful	Dhoba Majhi	Farmer
600	377 Of 2018	Bhadrak Samulai	Bhagaban Sethi	Farmer
601	378 Of 2018	Nuapada Shetka	Hiralal Sabar And Others	Farmer
602	379 Of 2018	Nuapada Kharkoili	Lekru Pradhan And Others	Farmer
603	380 Of 2018	Kendrapra Kalamulia	Satyabrat Pariya And Others	Farmer
604	381 Of 2018	Nagrabali Dhan	Asheshwar Bediya	Farmer
605	382 Of 2018	Sama Arhar	Shivcharan Gope	Farmer
606	383 Of 2018	Ramdi Arhar	Lakshmikant Mahto	Farmer

Sl. No.	Registration No.	Denomination	Applicant Name	Type Of Variety
607	384 Of 2018	SBJH-041	Sungro Seeds Private Limited	Extant (VCK)
608	385 Of 2018	NP-9742R	Nuziveedu Seeds Ltd	Extant (VCK)
609	386 Of 2018	NBJ-30	Nuziveedu Seeds Ltd	New
610	387 Of 2018	BIO 60118 I0	Dcm Shriram Limited	Extant (VCK)
611	388 Of 2018	BIO 6317 BG I	Dcm Shriram Limited	Extant (VCK)
612	389 Of 2018	JKC 720	Jk Agri Genetics Ltd.	Extant (VCK)
613	390 Of 2018	SVJ-64	M/S Shakti Vardhak Hybrid Seeds Pvt Ltd	Extant (VCK)
614	391 Of 2018	NBJ-58	Nuziveedu Seeds Ltd	Extant (VCK)
615	392 Of 2018	NBJ-96	Nuziveedu Seeds Ltd	Extant (VCK)
616	393 Of 2018	OK-459	Nuziveedu Seeds Ltd	Extant (VCK)
617	394 Of 2018	Xanadu	Soufflet Malt India Pvt. Ltd.	Extant (VCK)
618	395 Of 2018	DSB-21	University Of Agricultural Sciences	Extant (Notified)
619	396 Of 2018	KML 133	Kaveri Seed Company Limited	New

ANNEXURE X: ACRONYMS

AICRP	All India Coordinated Research Project
BAU	Birsa Agricultural University
BMC	Biodiversity Management Committee
BCIL	Biotech Consortium India Limited
CAG	Comptroller and Auditor General of India
CARI	Central Agricultural Research Institute
CBD	Convention on Biological Diversity
CMD	Chairman-cum-Managing Director
CSIR	Council of Scientific and Industrial Research
CHES	Central Horticultural Experiment Station
CSSRI	Central Soil Salinity Research Institute
DAC	Department of Agriculture & Co-operation
DUS	Distinctiveness, Uniformity and Stability
EVRC	Extant Variety Recommendation Committee
ETL	Economic Threshold Level
GATT	General Agreement on Tariffs and Trade
IARI	Indian Agricultural Research Institute
ICAR	Indian Council of Agricultural Research
ICFRE	Indian Council of Forest Research & Education
IINDUS	Indian Information System as per DUS guidelines
IPGRI	International Plant Genetic Resources Institute (Bioversity International)
ITPGRFA	International Treaty on Plant Genetic Resources for Food and Agriculture
KAU	Kerala Agriculture University
KVK	Krishi Vigyan Kendra
NASC	National Agricultural Science Centre
NGO	Non-Governmental Organization
NORV	Notified and Released Varieties of India
NSAI	National Seed Association of India
NRCPB	National Research Centre on Plant Biotechnology
NSRTC	National Seed Research and Training Centre
MSEZ	Mangalore Special Economic Zone Limited
OECD	Organization for Economic Co-operation and Development
PS	Principal Scientist
PD	Project Director
PGR	Plant Genetic Resources
PPV&FRA	Protection of Plant Varieties and Farmers' Rights Authority
PVE	Plant Variety Examiner
PVIS	Plant Variety Information System
PVJ	Plant Variety Journal of India
R&D	Research and Development
RTI	Right to Information
SAO	Senior Accounts Officer
SAU	State Agricultural Universities
STO	Senior Technical Officer
TRIPS	Trade-Related Aspects of Intellectual Property Rights
UPOV	International Union of Protection of New Varieties of Plants
VCK	Variety of Common Knowledge
WTO	World Trade Organization

Annual Report for the year 2017-18 was adopted by the Protection of Plant Varieties and Farmers' Rights Authority in its 30th Authority meeting held on 13 November, 2018 vide Agenda Items No. 14 at New Delhi.

PROTECTION OF PLANT VARIETIES AND FARMERS' RIGHTS AUTHORITY
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Ministry of Agriculture and Farmers Welfare,
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