

Policy Brief No. 10

National Academy of Agricultural Sciences

***Harmonization of Seed Regulations
for Sustainable Food Security
in India***



New Delhi
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Preface

Quality seed of high yielding improved varieties is the foundation of agriculture. Other inputs in agriculture can contribute towards higher productivity only when good quality seed has been used for which strict regulations are a pre-requisite. In our country, the seed sector is currently regulated by different seed legislations like Seeds Act 1966 (*Act No.54 of 1966*), Seeds Rules 1968; Seeds (Control) Order, 1983 (under the Essential Commodities Act, 1955); New Policy on Seed Development 1988; Protection of Plant Varieties and Farmers' Rights Act 2001 (PPVFR Act); Biological Diversity Act 2002 and National Seed Policy 2002, which help in maintaining the proper supply of quality seed and exchange of material. Seed Act 1966 is the main legislation controlling the seed quality which is now more than 50 years old. To keep up the pace with new developments in science, nationally and globally, the new seed bill to replace the existing Seed Act 1966 is under process. The draft Seed Bill 2020 has been prepared after extensive consultations and most of the issues that will help in ensuring quality seed availability have been addressed. However, it was felt that there are a few points needing further clarity and firmness for the seed sector. Hence, an 'Experts Meeting on Seed Policy' was organized by the Academy on February 03, 2020 which was attended by public and private sector organizations and farmers. After a day long deliberations, some very important recommendations have emerged which are highlighted in this policy brief.

It has been emphasized that the new Seed Bill should be in harmonization with the national and international seed legislations for promoting the seed sector in the country. Likewise, it should have an inbuilt mechanism to promote public-private partnership for commercialization of varietal technologies. The bill should be open ended to accommodate the science led developments to cater to the future needs of the nation. This document will definitely help the policy makers of our country for developing a very robust seed legislation that will provide an enabling environment to all stakeholders leading to enhanced share of Indian Seed Industry at global level and ensuring availability of good quality seed to the Indian farmers at appropriate time and affordable prices.

I am highly thankful to Prof R.B. Singh for conducting the Expert meeting very meticulously and coming up with very important and practical recommendations. The sincere efforts made by Dr D.K. Yadava and Dr. Ashok K. Singh for convening this meeting and compilation of this document are also thankfully acknowledged. My sincere thanks to Dr Kusumakar Sharma and Dr P.S. Birthal for their editorial support in preparing this document.



(T. Mohapatra)

Round Table Discussion: Harmonization of Seed Regulations for Sustainable Food Security in India

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Co-Chair: Prof R.B. Singh, Former President, NAAS

Conveners: Dr D.K. Yadava, ADG (Seed), ICAR and
Dr Ashok K. Singh, Director, ICAR-IARI

List of discussants

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3. Dr A.K. Singh, Secretary, NAAS, New Delhi
4. Dr P.K. Joshi, Secretary, NAAS, New Delhi
5. Dr S.K. Malhotra, Agriculture Commissioner, Ministry of Agriculture & Farmers' Welfare, New Delhi
6. Dr S.K. Rao, Vice Chancellor, Rajmata Vijayaraje Scindia Krishi Vishwavidyalaya, Gwalior (MP)
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15. Shri Jag Pal Singh, Progressive Farmer, Foundation for Agricultural Resources Management and Environment Remediation (FARMER), New Delhi
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17. Shri M. Prabhakar Rao, President, National Seed Association of India, New Delhi
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Harmonization of Seed Regulations for Sustainable Food Security in India

1. Background

Indian seed sector is one of the mature and vibrant domains in the world seed scenario with a vast network of public and private sectors, which works collectively for seed security in the country. The public sector agencies involved in seed/planting materials including quality control comprise of 65 ICAR Institutes, three Central Agricultural Universities, 48 State Agricultural Universities, National Seed Corporation Ltd., State Seed Corporations (17), Seed Testing Laboratories (132) and State Seed Certification Agencies (25). The ICAR is mandated to produce breeder seed that is being undertaken through All India Coordinated Research Project on National Seed Project (Crops) in various ICAR Institutes and Agricultural Universities. In addition, quality seed production programmes are also operational at 63 centres of ICAR Seed Project, 721 Krishi Vigyan Kendras, 211 Seed Hubs, (Pulses-150, Oilseeds-36, Millets-25), Seed Village Scheme and Farmers Participatory Seed Production Programme. Private Sector is also equally very strong and contributing significantly in research and development as well quality seed production and marketing in the country through more than 500 seed companies, out of which 80 companies have their own research and development programme and contributing entries to the All India Coordinated Research Projects (AICRP) and have a share of around 11.0% in the total varietal development programme. Earlier, the private sector was concentrating more on hybrid seed production and varieties of low volume crops but now it is expanding rapidly to high volume and horticultural crops also.

Recently, India is emerging as a dominant seed producer in world seed scenario. The global seeds market was valued at USD 59.71 billion in 2018, exhibiting a CAGR of 7% during the period 2011 - 2018. It is expected to register USD 90.37 billion by the year 2024, witnessing a CAGR of 7.9% during the forecasted period 2019-2024. In 2018, the Indian seeds market reached a value of USD 4.1 Billion, registering a CAGR of 15.7% during 2011-2018. It is further expected to grow at a CAGR of 13.6% during 2019-2024, reaching a value of USD 9.1 Billion by 2024. The value growth is mainly because of Bt cotton, single cross maize and vegetable seeds. Whereas, volume growth is due to increased seed replacement rate (SRR) pertinent to high volume crops viz. Paddy (dawn of hybrid rice) and Wheat. The Indian seeds market is anticipated to grow at a considerable CAGR due to improvement of seed replacement rate, production and distribution of quality seeds appropriate to agro-climatic zone at affordable prices along with a determined effort to address region specific constraints. Moreover, several factors including increased subsidies and renewed government thrust on the use of high yielding varieties, will lead to an increased productivity in the seed market. Indian seed industry is accounting for 4.4 % of the global seed market after the U.S. (27%), China (20%), France (8%), and Brazil (6%). Currently, our seed exports are less than ₹1,000 crore per annum. Annual global seed trade is \$14 billion. India definitely has a potential to capture a 10 per cent share which is \$1.4 billion or ₹10,000 crore by 2028.

2. Existing legislations concerning seed

Seed regulation in India was institutionalized with enactment of Seed Act 1966, and later on significant development took place which are as under:

1. **Seed Act 1966:** Seed Act 1966 (Act No. 54 of 1966) passed on December 29, 1966 by Indian Parliament, is the first regulatory tool dealing with seed quality aspects in the country which was implemented from October, 1969. This act has 25 sections for regulating the quality of certain seeds for sale, and for matters connected therewith.
 - a. **Seed Rules 1968:** Seed rules were formulated in 1968 to implement the Seed Act 1966. There are total 39 rules in XI parts.
 - b. **Amendments in Seed Act 1966 and Seed Rules 1968:** Major amendments include **Seeds (Amendment) Act 1972** (Sec 2, Insertion in 8A-E (Central Seed Certification Board); Sec 9 (Minimum standards), Sec 25 (standards to which seed confirms); **Seeds (Amendment) Rule 1973** (Rule 19, 21, 23 of Seed Rules 1968), **Seeds (Amendment) Rules 1974** (Insertion of 23A Action by seed inspector), **Seeds (Amendment) Rules 1981** (Insertion of 17A Indian Minimum Seed Certification Standards).
2. **Seeds (Control) Order, 1983 (under the Essential Commodities Act, 1955):** Dealers in seeds to be licensed, Enforcement Authority.
3. **Plants, Fruits and Seeds (Regulation of Import into India) Order, 1984**
4. **New Policy on Seed Development 1988:** Liberalization in seed sector which included import of high quality seeds and planting materials of field and horticultural crops, time bound-programme to strengthen/modernise plant quarantine facilities, effective observance of procedures for quarantine/post entry Quarantine (PEQ), incentives to encourage the domestic seed industry.
5. **National Seed Policy 2002:** Major emphasis was given on varietal development and plant variety protection, seed production, quality assurance, seed distribution and marketing, infrastructure facilities, transgenic plant varieties, import of seeds and planting material, export of seeds, promotion of domestic seed industry and strengthening of monitoring system.
6. **Protection of Plant Varieties and Farmers' Rights Act, 2001 (PPVFR Act 2001):** An effective system for protection of plant varieties, the rights of farmers and plant breeders to encourage the development of new varieties of plants. The act has provisions 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 the new plant varieties.
 - protect plant breeders' rights to stimulate investment for research and development for the development of new plant varieties, and
 - facilitate the growth of the seed industry, which will ensure the availability of high-quality seeds and planting material to the farmers. India having ratified the Agreement on Trade Related Aspects of the Intellectual Property Rights has to make provision for giving effect to Agreement.

7. **The Biological Diversity Act 2002:** Covers conservation, use of biological resources and associated knowledge occurring in India for commercial or research purposes or for the purposes of bio-survey and bio-utilisation and provides a framework for access to biological resources and sharing the benefits arising out of such access and use. The Act also includes in its ambit the transfer of research results and application for intellectual property rights (IPRs) relating to Indian biological resources. It covers foreigners, non-resident Indians, body corporate, association or organization that is either not incorporated in India or incorporated in India with non-Indian participation in its share capital or management.

3. Challenge to Indian seed sector

1. **Climate Change and Operational Issues:** Climate change is biggest challenge today in quality seed production. The seasonal variations like untimely rains, abrupt changes in temperature, low SRR, poor conversion, seed traceability, quality issues, poor seed production and quality control infrastructure and human resource, variation in seed policies for production, marketing and licensing across the states.
2. **Data Source:** Authentic data on quality seed is lacking, which needs to be regulated. The Department of Agriculture Cooperation and Farmers' Welfare (DAC&FW), Ministry of Agriculture and Farmers' Welfare should streamline the availability of data through single window, which can make the basis of future seed programmes in the country. The data of quality seed production, availability, seed replacement rate, share of formal and informal sector, share of public private sector etc. is varying from source to source and a great hinderance in formulating any seed policy.
3. **Governance, Accountability and Penalties:** Present seed legislations are not full proof for control of illegal seed business, genuineness of material sold, and other quality issues. Farmers are duped with fake advertisements by selling low quality materials and the government's quality control system is so subjective and weak that accountability is rarely fixed and farmers have to suffer huge losses. The case of herbicide tolerant cotton is latest example which has exposed the quality control and seed business. Likewise, in other crops too, farmers are being cheated by supplying spurious low quality misbranded seeds and no action is taken against the defaulting agencies.
4. **Fragmented Seed Sector:** Unlike the global trend, the Indian Seed Industry is highly fragmented with a large number of public sector organizations and more than 500 seed companies without adequate coordination.
5. **Lack of Perfect Seed Rolling Plans:** A centralized seed rolling plan based on seed replacement targets, availability of improved varieties/hybrids is not available. This is leading to confounded data on seed replacement, varietal replacement, annual quality seed demand and actual seed availability.
6. **Dominance of Very Old and Obsolete Varieties in Seed Chain:** Some very old varieties are still among the top 5 in breeder seed chain, therefore a blanket regulation based on the year of release may not be justified. In the wake of climate change, some varieties released 15-20 years back may

not perform well any more. Since these varieties do not show break down of any disease/pest tolerance, they are still in the seed chain. Special efforts are needed to phase out these old varieties by providing suitable superior substitutes.

7. **Wide Varietal Mismatches:** Though the total indented breeder seed is produced but wide mismatches (17-33%) are generally observed. Usually, the seed of newly released varieties are not produced, and therefore older varieties are multiplied to compensate it. This is a matter of serious concern that leads to dominance of older and obsolete varieties.
8. **No Systematic Efforts in Seed Production of Vegetable Varieties in Public Sector:** Like field crops, a large number of promising varieties/hybrids have been developed in vegetable crops without following the systematic seed production procedures. Moreover, meagre efforts have been made for commercialization of these materials to Private Sector for their faster dissemination to growers. This has led to dominance of the Private Sector in vegetable seed production and delivery.
9. **Non-lifting and Abuse of Breeder Seed Indents:** There are two incompatible faces of breeder seed production programme. On one hand, large breeder seed indents are placed by seed producing agencies that are many folds higher than actual requirement (*e.g. more than four times in rice and 30 times in mustard at 100% seed replacement*). On the other side, the indenters are not lifting the requisitioned quantity. These are two very opposite situations. In one case the confidence of the producing agency is weakened and it becomes a problem for disposal of unlifted seed. In other situation, the breeder seed thus indented and lifted do not reach the seed chain and being marketed directly as foundation/certified or labelled seed.
10. **Huge Variation in Seed Replacement Rates Across the States:** Though overall seed replacement rate in field crops is around 42.0%, but there is huge variation (4-65%) across the states.
11. **Lack of Seed Production Research:** Except few private seed companies, seed production research is altogether lacking in India that leads to poor conversion ratios, high cost of seed production and sometimes huge losses to the seed producing farmers.
12. **Mistrust between Public and Private Seed Sector:** Though lot of suggestions are being made to encourage Public- Private Partnership, there is an environment of mistrust and lack of transparency. Reciprocation needs to be ensured between public and private sectors for the material, information and expertise.
13. **No Seed Quality Control System in NEH Region:** After more than 50 years of implementation of seed regulation system in the country, NEH states don't have government seed quality control mechanism in place. The NEH states have tremendous potential of enhancing area and production, but it still remains unexploited due to lack of availability of quality seed.
14. **Poor Coordination Between Central and State Agencies:** Agriculture being the state subject, many sectoral issues and challenges are not being addressed uniformly across the states. Therefore, the coordination between central and state agencies dealing with agriculture in general and seed in particular needs to be strengthened and harmonized at national level.

15. **Uncertainty on Genetically Modified Crops:** Except Bt cotton, there has been no headway made in the development and commercial adoption of GM products in field and vegetable crops. Due to the embargo imposed on commercial release of GM varieties, a sense of insecurity among the breeders, biotechnologists and seed technologists is prevailing. Keeping the global trend of release of more and more GM products and challenge of meeting projected targets of agricultural production in the country, it is very crucial to resolve this issue nationally. Research on GM crops should be made as an integral part of the crop improvement programmes and accordingly their field and seed standards also need to be defined for facilitating their seed production after complying with all bio-safety issues.
16. **No Seed Banks for Seed Security:** There is no provision of seed banks for the seed security of the nation. In case of abnormal season, the seed production declines abruptly and seed crisis is faced leading to higher prices and sale of spurious seeds not adapted to a particular area. To ward off such situation, seed banks need to be established at district/block levels for ensuring seed security.
17. **Low Seed and Field Standards:** Indian Minimum Seed Certification Standards (IMSCS) are not meeting the requirements of International standards like OECD and European Union. Revision of IMSCS is required for equivalence with OECD, European Union and other organizations.

Keeping the above issues in view and for discussing the proposed Seed Bill 2020, National Academy of Agricultural Sciences organized an *Experts' Meet on Seed Policy* on 03 February 03, 2020 inviting all the stake holders including farmers.

4. Recommendations for evolving a robust seed policy

1. **National Seed Grid:** Develop a National Seed Grid for appropriate analysis of varieties for their relevance in a particular agro-climatic zone, and their seed demand and timely supply.
2. **Pan India Guidelines:** Harmonize licensing, rules and guidelines at national level to mitigate huge variation between the states and to overcome existing discrepancies and complications responsible for slow adoptions.
3. **Benefit Sharing:** Clear-cut guidelines for benefit sharing need to be developed by encouraging protection of the new varieties with the Protection of Plant Varieties and Farmers' Rights Authority (PPV&FRA) in appropriate categories to facilitate enhanced usage of formal sector bred new varieties as well as farmer-conserved or bred varieties in the main stream either as adapted variety or as resource for developing new varieties.
4. **National Level Independent Authority for Seed:** Seed is not being given any special attention. A national Authority designated as **National Seed Board** need to be established to take care of all activities related to seed- right from grower to top level to ensure quality seed chain.
5. **Data System:** Authenticity of data and multisource wide variations is an issue of serious concern in India. An authentic data base system needs to be established for proper implementation of various schemes through National Agricultural Research System.

6. **Seed Traceability:** Downstream multiplication of seed from breeder to certified does not have any control, which promotes production of spurious seed. Implementation of digital seed traceability system is a prerequisite.
7. **Harmonization of Different Legislations:** Harmonization of existing regulations on seed and germplasm is essential not only at national level, but other International legislations related to seed and germplasm use, transfer etc. need to be considered while finalizing the new seed act to provide conducive environment for enhancing seed business.
8. **Provision for Adopting New Technology:** The new seed regulations should have inbuilt scope of adopting science led developments at any stage. Open ended provision should be made for biotech crops including genome edited and other products developed by use of cutting-edge technologies.
9. **Stakeholders as Central Hub:** Seed Act should be stakeholder friendly and minimize litigations and facilitate work on Public-Private-Peasant Partnership (PPPP) mode. There should be an inbuilt provision for promoting public-private partnership in the seed regulations for easy access and sharing of materials, information and expertise.
10. **Promotion of International Seed Trade:** The act should facilitate seed exports to enhance share of Indian Seed Industry in International Seed Market. A fast-track system should be in place to ensure reduced time lag with rapid quarantine clearances.
11. **Qualified Seed Dealers:** The minimum qualifications for seed dealers should be Agriculture graduate; People dealing with seed should understand the value of quality seed. A large number of students are graduating in agriculture and search for jobs, hence for generating employment/ entrepreneurship and ensuring seed quality, minimum qualification for seed dealership should be B.Sc. (Ag.).
12. **Special Focus on Seed Health:** Seed health is one of the most important component of seed quality, which was not given much attention in earlier regulations. Standards for seed borne diseases for all crops need to be developed in a time bound manner. State of art facilities should be developed for seed health studies and it should be made an integral part of seed certification. This will also help in enhancing the seed exports.
13. **Compensation to the Farmers:** Simplified mechanism to decide the losses to farmers due to poor seed quality needs to be defined in the Seed Act or Rules. Present provision of compensations under Consumer Protection Act, 1986 (68 of 1986) is towards the product procured and its quality. The quality of seed is determined not only by its physical condition and performance but many natural factors and human management aspects are also involved. Being a complicated issue, the farmers' generally do not get justice. There needs to be some other alternative system for assessing the farmers' loss and proportionate compensation.
14. **Advisory Panel while Formulating Rules:** An advisory panel including representatives from ICAR, PPV&FRA, NAAS, Farmers and Seed Industry should be constituted to finalize the relevant rules and regulations.

5. Comments on the proposed draft seed bill-2020

The seed sector has witnessed many changes since 1966, which include new technologies such as GM seeds, entry of private and foreign seeds companies etc. In order to address these changes, the proposed Seed Bill 2020 seeks to replace the Seeds Act, 1966. Some of the welcome steps being taken in the proposed bill are:

- a. Expansion of coverage of agri-horticultural, forestry, green manuring, narcotics, plantation, medicinal and aromatic plant crops
- b. Compulsory registration of varieties including Transgenics
- c. Compulsory registration of seed producers, processing plants, plant nurseries
- d. Seed health
- e. Involvement of farmers in the apex policy making body (Central Seed Committee)
- f. Expected performance declaration
- g. Compensation to the farmers
- h. Enhanced penalties

However, there are some concerns of different stakeholders that need to be addressed for making the proposed Seed Bill 2020 more effective. Some section-wise suggestions have been presented at Annexure-A for inclusion/consideration in the bill.

6. Strengthening national seed system infrastructure

Before implementation of the act, the following infrastructure need to be strengthened to make Indian Seed System competitive globally:

1. **Strengthening and modernising seed testing infrastructure:** The number of notified Seed Testing Laboratories (STL) authorized to test seed samples to regulate the quality seed distribution varies considerably in different states. For successful seed production or the seed law enforcement programmes, it is desirable to establish one or two laboratories with modern facilities and well-trained staff in each state. It is necessary that STLs are maintained with good infrastructural facilities as per International Seed Testing Association (ISTA) guidelines and standards. At least one STL in each state should be developed as a model lab to specialize in advanced testing methods apart from routine seed testing.
2. **ISTA Accreditation:** India has only six laboratories accredited by International Seed Testing Association (ISTA). There is need to improve our competence in assessing seed quality testing through ISTA accreditation. Efforts must be made to obtain ISTA membership and accreditation for at least one laboratory in each state to cater to the needs of the seed industry and international seed trade. Emphasis needs to be given for ISTA or NABL Accreditation for ensuring quality. The accredited laboratories can act as referral laboratories for facilitating seed exports and also to encourage the OECD seed certification in the country.

3. **Establishing DNA fingerprinting laboratories:** Varietal purity and identity are two serious issues in seed quality. Use of modern molecular tools will help in ensuring high standards of quality as well as help in establishing the genetic identity of a registered variety which will help in benefit sharing and reduction of litigations. For making this activity as an integral part of seed production, state of laboratories need to be established.
4. **Revision and updating of seed testing handbook:** There have been incredible changes in the field of seed testing in particular and the seed industry in general. There is a need to revise existing seed testing handbook in accordance with global changes. The tests and protocols recommended need to be updated with modern testing methods, as per the needs of the modern seed industry.
5. **Strengthening the AICRP network centres:** Keeping in view the compulsory registration of all varieties to be marketed in India, value in cultivation and use will be essential requirement for registering these varieties. ICAR has a very strong network of AICRPs for evaluation of different varieties in different agroclimatic zones. These centres need to be strengthened for making evaluation of large number of varieties to meet the demand of both public and private sector varietal evaluation.

Section-wise suggestions on draft Seed Bill

CHAPTER I

Short title, extant, application and commencement

1. (3) (b) every producer of seed, other than farmer.

The act should not restrict the rights of farmers and breeder for the varieties registered under PPV&FRA 2001.

2. **Definitions:** The following definitions should be modified as under

- a. **Addition:** “Agro-climatic zone” A geographical area within which a variety of a plant species is found to adapt to its parameters of physiography, bioclimate, soils capes and the length of growing period as most suitable for its cultivation and productivity.

- b. **Deletion:** “essentially derived variety” may be deleted as it has no relevance to this act and may add “near isogenic line” developed by introgression of a desirable trait or gene from a donor parent or a foreign species or an artificial source into an otherwise agronomically acceptable cultivar (recurrent parent).

- c. **Modification:** “denomination” as per PPV&FRA (2001) may be added

“producer” means a person, group of persons, firm or organization who grows or organizes the production of seeds.

“spurious seed” means any seed which is not true to type as claimed or does not meet minimum limit of genetic purity and additional seed standards.

In place of transgenic varieties, genetic engineering may be used

“Genetic Engineering variety” carrying the event as per Environment (Protection) Act, 1986 clearance.

“variety” registrable under the provision of this Act (Seed Act 2020) means a plant grouping except micro-organism within a single botanical taxon of the lowest known rank, which can be -

- (a) defined by the expression of the characteristics resulting from a given genotype of that plant grouping having commercial value in cultivation in the given production condition and system in the specific agroclimatic zone as the case may be

- (b) identified by its performance related to its use or adaptation with performance or expression of a character along with performance related to its use according to (a) above; given the performance and use are determined as prescribed for the plant species as cultivated in the production conditions and systems in the country

- (c) considered as a unit with regard to its suitability for being propagated, which remains unchanged following established scientific method of propagation.

“seed” means any type of living embryo or propagule, including seedlings, tubers, bulbs, rhizomes, roots, cuttings, all type of grafts, tissue culture plantlets, synthetic seeds and other vegetatively propagated material, capable of regeneration and giving rise to a plant which is true to type on which it is produced; except in case of seed of hybrids where performance is assured for first filial generation only.

CHAPTER II

Composition of the Committee

4. (3) Sequence of committee members may be reorganised as per seniority/ rank
Disqualification of member: (9) (iv) is involved in any litigation or has filed a petition against the Union or State Government on the subject matter of the Act or its provisions.
- (5) Powers and functions of committee may be modified as
(b) quality seed, production, processing, storage and distribution;

Registration and other Sub-Committees of the Committee and their functions

7. (1) The Committee shall constitute the Sub-Committee one each for Agriculture and Horticulture group to be called the Registration Sub-Committee (Agriculture) or (Horticulture) as the case may be, consisting of a Chairman and such number of other members, to assist him/her in the discharge of the functions of each Committee, as may be prescribed.
- (2) It shall be the duty of the Registration Sub-Committee —
to recommend varieties to Central Seed Committee for registration after scrutinizing their claims on value in cultivation and use (VCU) as made in the application in such manner as may be prescribed;
- (4) monitoring, evaluation and differentiated accountability of the implementing agencies in maintaining quality seed chain and reliable database.

Chapter III

Maintenance of National Register of Varieties

12. (1) Provided that all the varieties registered under PPV&FRA 2001 shall be annexed as ‘protected varieties’ in the National Register.
- (3) The Registration Sub-Committee shall, with in such intervals and in such manner as may be prescribed, publish the list of varieties which have been entered in the National Register during that interval.

Registration of any variety

13. (1) No seed of any variety except varieties registered under PPV&FRA (2001) and of the prescribed quality and performance standards shall,
13. (3) The varieties which are available in the market on the date of the commencement of this Act shall be deemed to be registered under this Act for a period of 15 years or 18 years, as the case may be, as evidenced by earliest available record of sale of the variety in India refer to an agro-climate through a procedure as may be prescribed.

Procedure of Registration

For more clarity it may be edited

14. (2) On receipt of any such application for the registration of a variety on the recommendation of the Registration Sub-Committee which may, conduct ... specified by it, the Central Seed Committee may allot a registration number thereto, issue a certificate of registration and notification in the Official Gazette under the Section 5.

For more clarity it may be edited

14. (3) The Registration Sub-Committee may recommend for approval of Central Seed Committee/ Government, having regard

Registration of transgenic varieties

15. Only those applications of transgenic/ genome edited varieties duly approved for environmental release by the Ministry of Environment, Forests and Climate Change under the provisions of the Environment (Protection) Act, 1986: (29 of 1986) shall be accepted for registration following due procedures as in section 13 and 14.

Exclusion of certain varieties from registration is not relevant here and may be deleted.

18. May also be deleted as it has no relevance.

Evaluation of performance

19. Indian Council of Agricultural Research should be apex body for conducting value in cultivation (VCU) through an appropriate mechanism. The following should be in the act

“The Committee shall delegate the responsibility for assessing the value in cultivation and use (VCU) of varieties to be registered, to the Indian Council of Agricultural Research, which in turn will prescribe appropriate standard operating protocols and conduct the trials through a unified system involving National Agricultural Research System (NARS) and other organizations including private Sector.”

CHAPTER IV

Seed Certification

28. Before seed certification is made mandatory, a robust mechanism of certification will have to be devised either by accrediting the various agencies or allowing self certification for a period of time after implementation of the act and accordingly a provision should be made in Section 30 for accrediting the agencies other than Govt. agencies for certification.

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