

Role of organizations in protecting plant varieties and farmers' rights

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In India IPR was not considered necessary initially for agriculture as it was a means of subsistence for millions of farmers. On the contrary, in developed countries agriculture is a commercial activity. After green revolution, Indian agriculture took somewhat commercial shape. India did not have any legislation to protect the plant varieties or safeguarding of commercial aspect of agriculture. However, India became signatory to TRIPs agreement of World Trade Organization (WTO) in 1994 and thus, such legislation was necessitated (under Article 27.3b of TRIPS). Being a member country, it was mandatory to protect plant varieties either by patent or by an effective *sui generis* system or by the combination of both. India opted for *sui generis* system for protection of plant varieties by integrating the rights of breeders, farmers, and village communities.

In order to fulfill WTO obligation, India enacted the Protection of Plant Varieties and Farmers' Rights Act in October, 2001 to protect the new plant varieties. The act covers all categories of plants except micro-organism. The Government of India, states following four reasons for introducing the PPVFR Act:

1. To protect the intellectual property associated with the development of plant varieties in fulfillment of an agreement under WTO.
2. To recognize the rights of farmers arising from their contribution in conserving, improving and making available plant genetic resources to develop new plant varieties.
3. To stimulate public and private investment in plant breeding to accelerate agricultural development.
4. To ensure high quality seed and planting material to farmers by promoting the seed industry.

The Protection of Plant Varieties and Farmers' Rights Act, 2001 (53 of 2001):

- The Act has 11 chapters and 97 clauses.
- Rules came in 2003. Regulations came in 2006.
- Notifications are issued from time to time.
- Official website: <http://plantaauthority.gov.in/>
- Head Quarter: New Delhi (vide GOI notification in 2005)
- Chief : Chairperson
- Authority constituents: Chairperson and 15 members
- Official publication: Plant Variety Journal of India (initiated from 2007; publishes variety applications.
- Registration process started on 21 May' 2007

Some definitions under this PPVFR Act:

1. **Variety:** It is defined by the expression of the characteristics resulting from a given genotype of plant grouping and distinguished from any other plant grouping by the expression of at least one of the characteristics. Considered a unit with regard to its suitability for being propagated which remains unchanged after repeated propagation.
2. **Farmer:** Any person who cultivates crops by cultivating the land himself, or cultivates crops by directly supervising the cultivation of land through any other person, or conserves and preserves severally or jointly, with any person/ any wild species or traditional varieties, or adds value to such wild species or traditional varieties through selection and identification of their useful properties.
3. **Farmers variety:** A variety which has been traditionally cultivated for centuries and evolved by the farmers in their fields, or is a wild relative or land race of a variety about which the farmers possess common knowledge.
4. **Essentially derived variety (EDV):** EDV is a variety which is predominantly derived from another variety (protected or otherwise) and conforms to the initial variety in all aspects except for the differences which result from the act of derivation, and yet is clearly distinguishable from such initial variety.

Criteria for protection / Registration of Varieties

1. **Novelty:** As per the act, on the date of filing of the application for registration, the propagating or harvested material of such variety has not been sold or otherwise disposed by the breeders (in India) before one year of application (or outside India) before four years of application. The criterion of novelty does not apply to the extant varieties including farmers' varieties.
2. **Distinctiveness:** The variety is considered distinct if it is clearly distinguishable by at least one essential characteristic from any other variety whose existence is a matter of common knowledge in any country at the time of filing of the application.
3. **Uniformity** It is considered uniform, if subject to the variation that may be expected from the particular features of its propagation. It is sufficiently uniform in its essential characteristics.
4. **Stability:** It is considered stable, if its essential characteristics remain unchanged after repeated propagation or, in the case of a particular cycle of propagation, at the end of each cycle.

For a variety to be eligible for registration it must conform to the criteria of novelty, distinctiveness, uniformity and stability (NDUS). DUS test shall be necessary

for all new varieties, except EDVs. The manner of testing EDVs shall be decided by the Authority on a case-to-case basis. The DUS test shall be conducted in a minimum of two locations. The Authority recognizes and registers institutions with adequate facilities for conducting DUS or special tests in the country.

Normally DUS test is based on morphological examination, but it can be supplemented by special tests and biochemical / molecular characteristics, particularly in case of EDVs / GM varieties. UPOV has included protein and isoenzymes for examination of wheat, barley, maize, soybean and sunflower varieties. Work is underway to standardize DNA based characterization protocols. But these can be used as special tests. The Authority notifies the adopted methods of conducting the DUS and special tests.

Further the variety will be subjected to such DUS tests as shall be prescribed, for each crop. The Authority has published guidelines for conduct of DUS tests for the crops notified so far. The guidelines mainly cover the seed quality required for such tests, the seed quality parameters for submission of seeds to the Authority, test plot designs, methods and observation, grouping of varieties on the basis of some salient characteristics which are evenly distributed across varieties, table of crop specific character to be observed for DUS along with example varieties, etc.

Varieties registerable under the plant variety Act:

1. A **new variety** if it conforms to the criteria of novelty, distinctiveness, uniformity and stability.
2. An **extant variety** if it conforms to criteria if distinctiveness, uniformity and stability.

Extant variety: An “Extant Variety” means a variety, which is-

1. Notified under section 5 of the Seeds Act, 1966 (54 of 1966); or
2. A farmers’ variety; or
3. A variety about which there is common knowledge; or
4. any other variety which is in the public domain

Rights empowered under the Act:

1. **Breeders Right:** The certificate of registration issued under this Act confers upon the breeder or his successor or his agent or licensee exclusive rights to produce, sell, market, distribute, import or export the particular variety.
2. **Farmers Right:** The farmers right under the act is define as the privilege of farmers and their right to protect varieties developed or conserved by them. A farmer can save, use, sow, resow, exchange, share and sell farm produce of a protected variety except sale under a commercial marketing arrangement (branded seeds). Further, the farmers have also been provided protection of innocent infringement when at the time of infringement a farmer is not aware of existence of breeder’s rights. Farmers need not to pay any fee to Authority for any service under the Act.

- 3. Researchers Right:** Use of protected variety by researchers for conducting experiments or research for creating initial source of variations. Authorization of breeder of protected variety is required for repeated use as a parental line if newly developed variety is for commercial production

Exemptions provided under the Act:

Farmers' Exemption: Farmer shall be entitled to produce, save, use, sow, resow, exchange, share or sell his farm produce including seed of a variety protected under this Act.

Researcher's Exemption: (i) the use of registered variety for conducting experiment. (ii) the use of variety as an initial source of variety for the purpose of creating other varieties.

Plant varieties that cannot be protected under this Act:

Denomination given to such variety is comprised of solely or partly of geographical name.

- Where prevention of commercial exploitation of such variety is necessary to protect public order or public morality or human, animal and plant life and health or to avoid serious prejudice to the environment.
- Variety which involves any technology which is injurious to the life or health of human beings, animals or plants shall be registered under this Act, including genetic use restriction technology and terminator technology.
- Non-notified genera.

Genera and species notified for registration by the PPVFR Authority:

FIRST PHASE

- Cereals : Rice, wheat, maize, sorghum, pearl millet
- Legumes: Chickpea, mungbean, urdbean, field pea, rajmash, lentil, pigeon pea

SECOND PHASE

- Oilseeds : Rapeseed, mustard, groundnut, soybean, sunflower, safflower, castor, sesame, linseed
- Fibre Crop : Cotton and jute
- Sugarcane
- Fodder : Lucerne, berseem
- Vegetables : Tomato, brinjal, okra, cauliflower, cabbage, potato, onion, garlic
- Flowers : Rose and Chrysanthemum

Procedure for Registration:

Who can apply for registration?

An application for registration can be made either individually or jointly with any other person by following:

- person claiming to be the breeder of the variety or his successor or assignee;
- a farmer or a group of farmers claiming to be the breeder of the variety;

- any person authorized by any of the persons specified above to make application on their behalf;
- any university or publicly funded agricultural institution claiming to be the breeder of the variety.

Under the Act *breeder* means a person or group of persons or a farmer or group of farmers or any institution, which has bred, evolved or developed any variety. The variety for which registration is sought must be one which is a farmers' variety; or an extant variety; or of such genera or species as the Central Government may specify by notification in the official Gazette other than the farmers' varieties and the extant varieties.

Form of application

An application for registration of a variety must be filled in prescribed Performa. It must be in respect of a variety, must state the denomination assigned to the variety and must be accompanied by an affidavit stating that such variety does not contain any gene or gene sequence involving terminator technology. It must further contain a complete passport data of the parental lines from which the variety has been derived along with the geographical location in India from where the genetic material was taken. The application must also be accompanied by a statement containing a brief description of the variety bringing out its characteristics of novelty, distinctiveness, uniformity and stability. The application must contain a declaration that the genetic material or parental material acquired for breeding, evolving or developing the variety has been lawfully acquired. The application for registration of a variety must be accompanied with prescribed fees and enough quantity of seeds of the said variety for the purpose of conducting tests to evaluate whether seeds along with parental material conform to the specified standards.

Acceptance and Advertisement of Registration Application

The Registrar may accept the application absolutely or with limitations on being satisfied about the particulars contained in such application. If the Registrar is satisfied that the application does not comply with the requirements of this Act, the application may be either rejected by him or the applicant may be required to amend the application to the satisfaction of the Registrar. However, the Registrar cannot reject the application for registration without affording an opportunity to the applicant to defend the case.

Once the application for registration of a plant variety is accepted, the Registrar will advertise the application with limitations, if any, and the specifications of the variety including its photographs or drawing in the prescribed manner for calling objections from the persons interested in the matter.

Opposition to the Acceptance

After the advertisement of acceptance, within three months from the date of the advertisement, any person, on payment of the prescribed fees, may give notice of opposition to Registration, in writing, to the Registrar. The grounds for opposition may be any of the following:

- the person opposing the application is entitled to the breeder's right as against the applicant; or
- the variety is not registrable under this Act; or
- the grant of certificate of registration may not be in public interest; or
- the variety may have adverse effect on the environment.

The Registrar is empowered to pass an order upholding or rejecting the application by giving reasons for the same after considering all the grounds on which the application has been opposed.

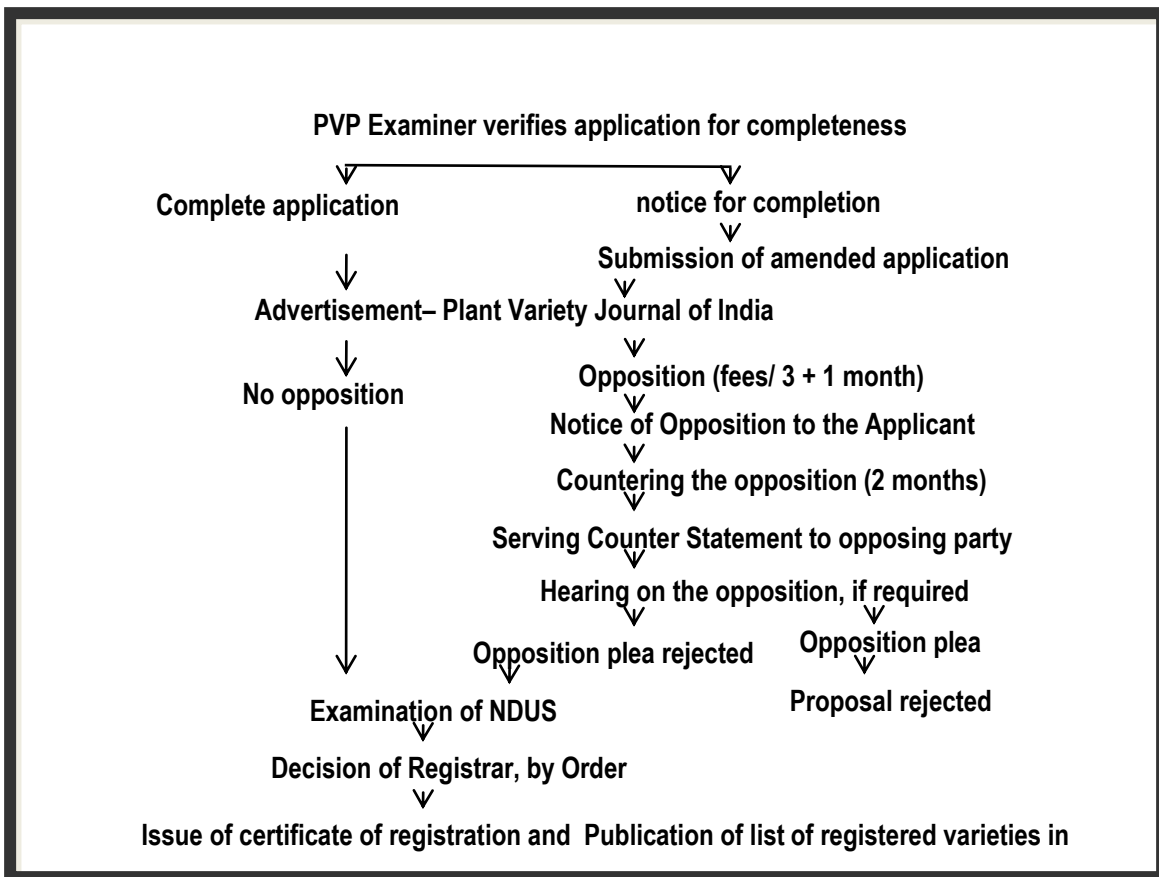


Fig 1: Procedure of registration under PPVFRA– Schematic

Registration and Term of Protection:

Once the application for registration of a variety, other than an essentially derived variety, has been accepted with or without opposition, the Registrar shall register the variety; issue a certificate of registration to the applicant sealed with the seal of the

Registrar. The breeder is required to deposit such quantity of seeds or propagating material of the registered variety in the National Gene Bank as may be specified for reproduction purposes at breeder's expense. The period of validity of certificate of registration is **nine years** in case of trees and vines; and **six years** in case of other crops. This validity period can be reviewed and renewed on payment of the prescribed fees subject to a maximum period of validity, which is

- in case of tree and vines, eighteen years from the date of registration of the variety;
- in the case of extant varieties, fifteen years from the date of notification of that variety by the Central Government under Section 5 of the Seeds Act, 1966; and
- in other cases, fifteen years from the date of registration of the variety.

Registration of Essentially Derived Variety (EDV):

The procedure for registration of an EDV is different from that of a variety. However, the provisions as to who can make an application for registration and the manner of making application are similar to that for a variety. The application will be accompanied by the prescribed documents and fees and shall be made to the Registrar, who on being satisfied about the compliance of the requirements specified, shall forward the application with his report and all the relevant documents to the Authority. The Authority has to get such essentially derived variety examined by conducting the prescribed tests and following the prescribed procedure so as to determine whether the essentially derived variety is a variety derived from the initial variety. On being satisfied in the matter, it will direct the Registrar to register such essentially derived variety. However, if the Authority is not satisfied on the report of the test that the essentially derived variety has been derived from the initial variety, it shall refuse the registration application. An essentially derived variety shall be registered only if it satisfies the requirements of novelty, distinctiveness, uniformity and stability. After registration, the Registrar will issue a certificate of registration to the applicant in the prescribed form sealed with the seal of the Registry and send a copy of it to the Authority.

Other features of the PPVFRA:

- 1. Gene fund:** A gene fund is created under the Act from the contribution received from national and international agencies/ benefit sharing from breeder/ annual fee payable to authority by way of royalties. This will help in the conservation and sustainable use of genetic resources both in-situ and ex-situ and for strengthening the capabilities of the panchayat in carrying out conservation and sustainable use. Fund will be applied for disbursing shares to benefit claimers (individual and organization), for compensation to village communities and benefit sharing award.
- 2. National register of plant variety:** A Register called National Register of Plant Varieties shall be kept at the head office and the name of all the registered plant varieties along with breeder's particulars will be maintained.

Offences and Penalties:

A person other than the breeder shall be held liable for prosecution if he applies the denomination of a registered variety or applies false denomination to a variety. The penalties imposed under the Act are as follows:

1. Penalty for applying false denomination:

A person shall be punishable with imprisonment for a term of minimum three months and a maximum of two years, or with a fine of minimum Rs.50,000/- and a maximum of Rs.5 lakhs, or with both if he applies any false denomination to a variety or indicates the false name of a country or place or false name and address of the breeder of the variety registered.

2. Penalty for selling varieties to which false denomination is applied:

The punishment is a term of imprisonment from *six* months to two years or a fine of rupees fifty thousand to rupees five lakh, or both.

3. Penalty for falsely representing a variety as registered:

It is imprisonment for six months to three years, or fine of rupees one lakh to five lakh, or both a prison term and a fine.

4. Penalty for subsequent offence:

A person who has been convicted once for an offence under the Act faces heavy punishment for a second and every subsequent such offence: imprisonment for one to three years or a fine of two to twenty lakh rupees or both.

The provisions of the Act have the overriding effect. If there is anything in any other law in force, which may not be consistent with the provisions of this Act, the Act will prevail.

Role of Organisation:

The Indian national agricultural research system is well recognized for its contributions in the form of development of high-yielding varieties that played a pivotal role in enhancing crop productivity. This is a relatively new concept therefore; initially this organization is working as facilitator / interface between scientific manpower (developer of variety) and the end user (farmers). Followed below is the main role to be played by organization:

- To create awareness among the farmers community about the need to register their variety
- To facilitate the process registration
- To provide a platform for interfacing between SAU/NGOs/State Govt./FBO
- To provide guidelines for DUS testing in non notified crop.
- To provide field expertise for DUS testing.
- To provide quality seeds/planting materials.

Suggested Readings:

- Brahmi P, Agrawal R.C. and Sharma S.K. (2009) Guidelines for filing

applications for registration under the Protection of Plant Varieties and Farmers' Rights Act 2001. National Bureau of Plant Genetic Resources, New Delhi, p. 162.

- ICAR Guidelines for Intellectual Property Management and Technology Transfer/ Commercialization (2006). ICAR, New Delhi, p. 122.
- The protection of Plant Varieties and Farmers Right Act 2001. Bare Act with Short Notes. Universal Law Publishing Co. Pvt Ltd, New Delhi, p. 127.
- WWW.plantauthority.gov.in