

# Protection of Plant Varieties and Farmers Rights Act in Relation to Plant Breeding

A. W. More, H.V. Kalpande and A.K. Chaudhari

Department of Plant Breeding and Genetics

Vasantrao Naik Marathwada Krishi Vidyapeeth, Parbhani

\*Corresponding Author: [ambikamore26@gmail.com](mailto:ambikamore26@gmail.com)

The improved varieties have contributed significantly in increasing the productivity of crop plants. Both public and private institutions spend huge money and time to develop superior varieties to enhance agricultural production. In the past, free exchange of germplasm across the globe has resulted in a great success in crop improvement. The classical examples are the worldwide use of dwarfing genes in wheat and rice, which have revolutionized the global agricultural production. But with the signing of WTO in 1995 and to recognize the contributions of breeders and farmers, it has become necessary to protect the resultant intellectual property and to grant a license to the sponsors of the research. The legal protection of intellectual property is the only way to accomplish this. In this context, the Plant Patent Act of USA passed on May 12, 1930 was the first legal protection granted to asexually propagated plants and was indeed the first patent in the world to benefit the plant breeders. Later on sexually reproducing plants were also made patentable through Plant Variety Protection Act of 1970 in USA. Initially the protection was not awarded to plants and other living organism, being produced by nature, and was not eligible for patent. But the Plant Protection Act of 1930 recognized that breeders create products that are more than mere product of nature. After this, different forms of Plant Breeders' Rights (PBR) were adopted in Europe, and Netherlands took a lead to adopt PBR by adopting a Plant Breeders' Decree in 1941. On January 1, 1948, a convention known as General Agreement on Trade and Tariffs (GATT) was set up to regulate the world trade and to grant a minimum level of protection to plant varieties. However, the issue of Plant Breeders' Rights became alive only after the establishment of UPOV Convention in 1961 (UPOV is an acronym derived from French, which means, "International Union for the Protection of new varieties of Plants"). In this convention, the role and contribution of the plant breeders was recognized on an international basis. Under this law, the breeder is given the exclusive

rights to produce his variety for the purpose of commercial marketing and sale. However, exemption is granted to farmers to use their own saved seed (Farmer's exemption) and breeders for using the variety for research and development of other varieties (Breeder's exemption). The Convention was amended in 1972, 1978, 1991 and 1993 to make additional provision regarding the Plant Breeders' Rights. Arthur Dunkel, the then Director General of General Agreement on Trade and Tariffs (GATT) presented the Dunkel Draft at Uruguay in 1986, which makes it necessary that some form of IPR should be introduced for plants either as patents or an "effective *Sui generis* (of its own kind) system" in line with UPOV. In 1995 World Trade Organization (WTO) replaced GATT.

## Protection of Plant Varieties and Farmers Right Act

India has signed an agreement on Trade Related Intellectual Property Rights (TRIPs) under World Trade Organisation in 1995 and has agreed to provide protection to plant varieties either by patenting or by a *Sui-Generis* system or a combination of both. However, the Indian Patent Act of 1970 does not permit the patenting of plants or varieties, whereas in advanced countries like USA and Japan, the patenting of plant varieties is allowed. In India, Plant Variety Protection (PVP) replaces the patents because of the fact that variety development involves the improvement of already existing plants and not *de novo* creation. For this purpose, the Government of

India made an act "Protection of Plant Varieties and Farmers Rights Act (PPV&FR Act) in 2001. The Rules and Regulation to implement this PPV&FR Act were formulated in 2003. For the effective implementation of these rules and regulations, the Government of India established an authority known as "Protection of Plant Varieties and Farmers Rights Authority in 2005. The PPV&FR Authority started functioning from October 2006. The authority consists of a Chairperson and 15 members.

## Notable Features of Protection of Plant Varieties and Farmers Rights Act

- ❖ To provides an effective system for protection of plant varieties
- ❖ To protect the rights of plant breeders to encourage the development of new varieties of plants, stimulate investment for research and development, both in the public and private sector for the development of new plant varieties, and accelerate agricultural development in the country
- ❖ To 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 facilitate the growth of seed industry in the country which will ensure the availability of high-quality seeds and planting material to the farmers

Under this act, the followings rights of the breeders, researchers and farmers are protected:

### Breeders Rights

- ❖ It provides an exclusive right to breeder or his successor or his assignee to produce, sell, distribute, import or export the seed of protected varieties
- ❖ The breeder can also authorise any person to produce, sell and distribute the seed of protected varieties under certain conditions laid down in the act

### Researchers Rights

- ❖ The researcher has the right to use the protected variety for research purpose
- ❖ He has the right to use the protected variety for the development of new varieties
- ❖ However, the authorisation of the concerned breeder will be required for the repeated use of the protected variety for the commercialization of the new variety (e.g. hybrid)

## Farmers' Rights

- ❖ Right to save, use, exchange, sow, re-sow, share or the sell the product of protected variety, except the sale of branded seed
- ❖ Right to benefit sharing from the contribution of his variety or plant materials in the development of new variety
- ❖ Right for compensation for low performance of the protected variety: The breeder has to disclose to the farmers the expected performance of the protected variety under the given conditions. If the protected variety does not perform as specified, the farmer has a right for compensation for the low performance.
- ❖ Recognition and Reward to the farmers for conservation of land races and development of farmers' varieties.
- ❖ Just like breeder, he can register his variety (Farmers variety/traditional variety)
- ❖ Farmers are exempted from the payment of registration fee
- ❖ Farmers to be protected from the act of innocent infringement. If the farmer who is not aware of the existence of this act and unknowingly breaks the law of protection, then that farmer will be considered as innocent but he has to prove his innocence before the court.

### Who can apply for registration

Any person claiming to be the breeder or his successor or assignee or any person authorized by the breeder; any farmer or group of farmers or farming community

### Types of varieties, which can be registered with PPVFRA

Three types of varieties namely Extant, New and Essentially Derived Varieties can be registered with the Protection of Plant Varieties and Farmers' Rights Authority.

#### Extant variety

- ❖ A variety which is available in India and notified under section 5 of Seed Act (1966)

- ❖ A Farmer's variety (a variety traditionally cultivated and evolved by the farmer at his own field, can be a land race or wild relatives)
- ❖ A variety which is of common knowledge
- ❖ A variety which is in public domain

### **New Variety**

A variety will be registered as a new variety if its seed has not been offered for sale before one year from the date of application for registration. It should confirm the criteria of Novelty, Distinctness, Uniformity, and Stability. Novelty means the variety to be registered must be new and has not been commercialised before one year from the date of application. The distinctness means that the variety should be clearly distinguishable from the other varieties by at least one essential characteristic. Uniformity means that the variety should be sufficiently uniform in its essential characteristics. Stability means the essential characters should remain unchanged after repeated propagation.

### **Essentially Derived Variety (EDV)**

A variety which is derived through single gene transfer, recurrent back cross derivatives, mutants, soma-clone variants, CMS lines, polyploids, substitution/deletion lines all come under EDV. EDV can be registered, if it differs from the initial variety for at least one character and meets the DUS test.

### **Varieties which cannot be registered**

A variety, which contains any technology that is injurious to the life or health of human beings or animals or plants including terminator technology, shall not be registered.

### **Crops which can be registered**

In the first phase, the Protection of Plant Varieties and Farmers Rights Authority has started the registration of varieties of the following 14 crops: Rice, Bread Wheat, Maize, Sorghum, Pearl millet, Peas, Chickpea, Pigeon pea, Green gram, Black gram, Lentil, Kidney beans, Cotton and Jute

### **Duration of registration**

The varieties are registered initially for a period of six years in case of crops and nine years in case of trees and vines. The registration can be

renewed up to a maximum period of 15 years in case of crop varieties and 18 years for trees and vines.

### **Compulsory licensing**

If the seed of the protected variety is not available after three years of registration in adequate quantity at a reasonable price, the PPV&FR Authority may grant a license to a third party to undertake the production of the seed of the protected variety, its distribution and sale with limited royalty to the concerned breeder. The duration of the compulsory licence may vary from case to case keeping in view the gestation period and other relevant factors but it shall not exceed the total remaining period of the protection of that variety.

### **Benefit sharing**

On registration of a variety, any person or a group of people can submit his claim of benefit sharing to the PPV&FR Authority in the prescribed form and with prescribed fee if his/her material has been used in the development of a particular variety. The authority shall take the decision on the matter after considering the following points:

1. The extent and nature of the use of the genetic materials of the claimant in the development of the variety relating to which the benefit sharing has been claimed; and
2. The commercial utility and the demand in the market of the registered variety relating to which the benefit sharing has been claimed

### **Infringement of the act**

Any person will be infringed under PPV&FR Act if:

1. Who not being the breeder of the registered variety sells, exports or imports or produces the seed of such variety without the permission of the breeder of that variety;
2. Who sells, exports, imports or produces any other variety giving the denomination similar to the denomination of the registered variety

### **Penalties for infringement**

Any person who applies any false denomination to the registered variety or indicate the false name of the country or false name and address of the breeder of that registered variety shall be punishable with an

imprisonment of three months to two years or a fine of Rs. 50,000 to 5 lakhs or both. Similarly, any person who makes false representation with respect to the denomination of a variety or its propagating material registered under the act shall be punishable with an imprisonment of six months to three years or a fine of Rs. one lakh to five lakhs or both. The subsequent conviction of an offence will be punishable for the second and for every subsequent offence with an imprisonment of one to three years or with a fine of Rs. 2 lakhs to 20 lakhs or both.

### Impact of PPVFRA

Genetic improvement of crop plants through conventional breeding or with the help of genetic engineering is a resource and time-consuming process. Development of an improved variety generally takes 8-10 years. Therefore, once a variety is developed, it becomes necessary to protect it from its misuse and to provide incentive to the breeders/farmers. Once a variety is registered with PPV&FRA, it gives exclusive rights to the breeder for its seed production, distribution and sale. He has the right to authorise any person on mutually agreed terms for the production, sale and distribution of seed of that variety. He will be entitled for his share from the royalty from the sale of that seed. Moreover, it will encourage others (breeders or scientists or farmers) to

develop more varieties, which have some commercial value. Since the private seed industry is also involved in the production and sale of seed, it will stimulate both public and private sectors to invest more in the development of new varieties. The registration of a variety with PPV&FRA also ensures the maintenance and availability of high-quality seed or propagating materials of that variety, because once the variety is registered with PPVFRA, it becomes obligatory for the concerned breeder to supply the quality seed in adequate quantity and at reasonable price to the farmers. In addition, the breeder will evaluate the performance of his variety more effectively at farmers' field to avoid any litigation from the farmers for its low performance. Moreover, for protecting a variety, the breeder has to maintain the passport data of the variety and the parental material. On registration of a variety, any person (may be the farmer) or group of persons may submit his claim of benefit sharing if his or their material has been used in the development of that variety. Protection of varieties will lead to lawful acquisition of the research materials with MTA (Materials Transfer Agreement) or authorization from the owner.

Reference:

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

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