GMR
The Original

PROTECTION OF PLANT VARIETIES

Dr.Aruna. Kasoju[1], Meegada Akhila[2], A.Sheeba Rani[3]

[1]Associate professor of Biotechnology, jntuacek, kalikiri
[2]Assistant Professor (A) JNTUCEK, Dept of Food Techology Kalikir
[3]Assistant professor (A) JNTUACEK, Dept of Food Technology,Kalikiri
***Corrosponding Author**: Dr. Aruna.Kasoju email : annu.kasoju@gmail.com

ABSTRACT:
The Protection of Plant Varieties and Farmers Rights Act, 2001 is a unique law in India. It protects the rights of both plant breeders and farmers. The Act encourages the development of new plant varieties. It also respects traditional knowledge in farming . Farmers can save, use, and share seeds (1)freely. Breeders get exclusive rights over their registered varieties. This law was made to meet India's obligation under the TRIPS Agreement. It aims to support innovation, biodiversity, and farmers' welfare. The Act is important for agriculture, law, and rural development in India(2).

INTRODUCTION:
The Protection of Plant Varieties and Farmers' Rights (PPV&FR) Act, 2001 in India is a *sui generis* IPR system established to protect new plant varieties, encourage breeders, and safeguard farmers' rights regarding seed saving, using, and exchanging. It balances breeders' rights with traditional farming, granting 15-18 year protection for developed varieties(3).

Key Aspects of the PPV&FR Act, 2001:

- **Objectives:** To encourage agricultural research and development, protect plant genetic resources, and promote the growth of the seed industry.
- **Categories of Protection:** The Act covers New Varieties, Extant Varieties, and Essentially Derived Varieties (EDV).
- **Protection Criteria:** To be registered, a plant variety must meet the DUS criteria: **D**istinctiveness, **U**niformity, and **S**tability.(4).
- **Farmers' Rights:** Farmers can save, use, sow, re-sow, exchange, share, or sell their farm produce, including seed of a protected variety, provided they do not sell branded seeds of the protected variety.
- **Breeders' Rights:** Holders get exclusive rights to produce, sell, market, distribute, import, or export the protected variety.
- **Duration:** 15 years for field crops and 18 years for trees and vines.
- **Authority:** The PPV&FR Authority was established to implement the Act, which includes a Gene Fund to compensate farmers for conserving genetic resources(5)

Objective of the Protection of Plant Varieties and Farmers Rights Act
The PPVFR Act aims to protect new plant breeding efforts. It also values farmers' roles in conserving varieties. The Act supports fair benefit-sharing and shows India's focus on preserving biodiversity.

- Protect plant breeders' rights: Breeders who create new plant varieties get exclusive rights. This encourages them to invest in research. It also leads to better-quality seeds and new innovations in agriculture.
- Recognize farmers' rights: The Act recognises that farmers are more than just growers; they also protect and breed traditional varieties, so they should be protected by the law and given money(6).
- Ensure seed availability: It guarantees farmers access to high-quality seeds of protected varieties at reasonable prices contributing to improved agricultural productivity.
- Develop a registration system: The Act sets up a structured legal process for registration, ensuring transparency, traceability, and legal enforceability of plant variety rights.
- Promote agricultural progress: The Act combines traditional and scientific knowledge. This helps improve food security. It also supports sustainable growth in agriculture(7).

Key Features of the Protection of Plant Varieties and Farmers Rights Act
Protection of Plant Varieties and Farmers Rights Act includes setting up an authority and defining different rights. It also covers how the law is put into action. The Act creates a system that promotes innovation, fairness, and inclusion.

- PPVFR Authority: A central authority is formed to oversee all aspects of registration, rights enforcement, dispute resolution, and benefit sharing. It also maintains a national registry of varieties and gene banks.
- Breeders' Rights: Registered breeders get exclusive rights to produce, sell, and market their variety. They can prevent others from using it without permission, fostering competition and IP protection in agriculture(8).

- Farmers' Rights: Farmers have the right to save, use, exchange, and even sell seeds of protected varieties (except branded ones). This safeguards their traditional practices and gives them recognition as breeders.
- Researchers' Rights: Scientific research is encouraged under this Act. Researchers can use protected varieties for experimentation or creating new ones promoting continuous improvement and biodiversity(9).

Criteria for Plant Variety Registration

For a plant variety registration, certain scientific and legal requirements need to be met before it can be protected. These make sure that the variety is really new, different and stable and they stop people from copying or abusing their rights.

- Novelty: The variety must not have been commercially sold or used anywhere prior to the specified date. This ensures originality and avoids registering existing or common varieties.
- Distinctiveness: The variety should have at least one trait (like color, yield or disease resistance) that clearly sets it apart from others. This trait should be easily identifiable and measurable(10).
- Uniformity: The variety must display uniform characteristics across all its plants. Any deviations should be minimal ensuring predictable performance for the farmer.
- Stability: The essential features of the variety must remain consistent after repeated propagation. This guards against genetic drift and guarantees reliability.
- Denomination: The name or denomination of the variety should be unique, meaningful and not misleading. This helps avoid confusion in seed markets and ensures transparency(11).

Duration of Protection

The Act protects different types of plants for certain amounts of time depending on the type. This lets breeders and farmers keep the rights to their varieties while also making them available for general use in the future.

- 18 years for trees and vines: Since these plants take longer to mature and evaluate, a longer protection period helps breeders recover investments and earn profits(12).
- 15 years for other crops: Common field and vegetable crops are granted protection for 15 years, which is sufficient to incentivize innovation and seed development.
- 15 years for extant varieties: Existing or traditionally used varieties get protection from the date they were officially notified, allowing even older breeds to enjoy legal recognition(13).

Benefit Sharing and Gene Fund

To ensure that benefits from registered varieties are shared fairly, the Act provides for mechanisms like benefit-sharing and financial compensation.

- Benefit Sharing: If a registered variety uses any farmer-contributed genetic material or traditional knowledge communities or individuals can claim monetary benefits. The PPVFR Authority decides the amount and distribution.
- National Gene Fund: This fund collects license fees, royalties, and contributions from breeders. It is used to reward farming communities, support conservation efforts and promote awareness about farmers' rights(14).

Infringement and Remedies

There are rules in the Act that make it illegal or careless to deal with certain types of protected plants. This part tells you what "infringement" means and how you can get justice through the law.

- Selling without authorization: Anyone producing or selling a protected variety without the breeder's consent is liable for infringement. This helps control counterfeit seed markets(15).
- Misleading denomination use: Using names or branding similar to a registered variety can confuse buyers and mislead farmers, which is punishable under the Act.
- Penalties and legal action: Offenders may face imprisonment, fines, or both. Repeated infringement can attract more severe penalties, and courts may issue injunctions and compensation orders.

Uncover the legal battles behind GI infringement and learn how to protect regional identities with the power of law!(16)

Importance of the Act

The Protection of Plant Varieties and Farmers Rights Act is an important law and law for farming in India. It brings together new and old ideas and shows the rest of the world how fair IP law should be.

- TRIPS Compliance: The Act satisfies India's obligation under WTO's TRIPS agreement by providing a sui generis system of plant variety protection that aligns with international norms.
- Farmer-Centric Model: Unlike Western IP laws that ignore traditional contributions, India's model respects and protects farmers' roles making it inclusive and equitable(17).
- Fosters Innovation: Breeders are encouraged to develop climate-resilient, high-yielding crops contributing to food security and agri-economy growth.
- Biodiversity Conservation: By rewarding conservation of local varieties the Act supports ecological balance and preservation of genetic resources.
- Promotes Sustainable Agriculture: The Act ensures that farmers can access good-quality seeds at affordable rates enhancing productivity and sustainability(18).

Case Laws and Developments

There are some important cases and events in this part that show how the Act works in real life. This teaches students how to understand and use the Act in business and the law.

- Navbharat Seeds Pvt. Ltd. v. Monsanto Technology LLC: This case raised critical questions about conflicts between PPVFR and patent laws. The ruling confirmed that plant varieties are not patentable in India, reaffirming the authority of the Protection of Plant Varieties and Farmers Rights Act over seed-related IP(19).
- Recognition of Farmers and Communities: Several individuals and tribal communities have been awarded for conserving traditional seeds like drought-resistant rice or herbal plants. These cases illustrate the practical impact of the Act in uplifting rural biodiversity custodians(20).

Challenges

But even though the Protection of Plant Varieties and Farmers Rights Act is made up of many parts, it is still hard to use. This part talks about some of the main issues that make it less useful in real life.

- Awareness Gaps: Many farmers are unaware that they can register their varieties or claim benefit sharing. Government outreach efforts need significant expansion(21).
- Technical Registration Process: Completing the paperwork and meeting the DUS (Distinctness, Uniformity, Stability) testing criteria can be difficult without technical assistance.
- Weak Enforcement Mechanisms: Monitoring seed sales, especially in informal markets, is tough. Small infringements often go unnoticed due to lack of local enforcement(22).
- Balancing Rights and Access: Granting IP rights may sometimes restrict access to affordable seeds, especially if breeders charge high royalties or limit distribution.

Recent IPR advancements in plant variety protection (PVP) focus on integrating biotechnology, expanding utility patents, and balancing commercial rights with traditional knowledge. These changes aim to incentivize agricultural innovation while safeguarding food security and acknowledging farmers as vital stewards of genetic biodiversity.(23)

Key Advancements and Trends:

1. Integration of Biotech and Utility Patents

In major agricultural markets like the United States, there has been a surge in dual-protection strategies. Breeders routinely secure both traditional Plant Variety Protection Certificates (PVPCs) and strict USPTO utility patents for identical seeds or genetic traits. This approach grants broader monopoly control over plant traits and inbred parent lines, bypassing some of the traditional research exemptions allowed under standard PVP frameworks(24).

2. Sui Generis Models and Farmers' Rights

Countries are modifying laws to address the realities of local farming communities rather than adopting standard, blanket frameworks. India’s framework balances commercial Plant Breeder Rights (PBRs) with Farmers' Rights, explicitly allowing farmers to save, use, sow, or exchange their farm-saved seeds. The system also registers and rewards indigenous "Farmers' Varieties" and traditional knowledge(25).

3. Essentially Derived Varieties (EDVs)

International PVP laws have tightened regulations around Essentially Derived Varieties (EDVs) to prevent "cosmetic" breeding. Under updated UPOV standards, if a breeder modifies an existing protected variety using biotechnology (like CRISPR) but the foundational traits remain largely unchanged, the original breeder retains partial IP, reducing plagiarism in commercial breeding programs(26).

4. Patentability of Plant-Related Inventions

Jurisdictions like China have issued revised patent guidelines that significantly strengthen patent protection for technological innovations in plant breeding. While natural, non-modified plants and standard plant varieties remain excluded from patentability, genetically modified (GM) traits, gene editing processes, and synthetic biology applications now enjoy more robust and predictable patent protection(27).

Recent Developemnts; The recent devopments in india include incorporation of stake holder ;s feedback and balancing high yielding crop innovations in traditional seed preservation. Recently legislative is focusing on connecting the seed act 2026 to advance registration progress and institutional activity which is evidenced by community seed rights , seed sovereignty, compensation gaps.

REFERENCES:

1. Parmar, Anita, Diptirekha Mohapatra, and Bishnanand Dubey. “Plant Variety Protection and Farmers Rights in India: A Critical Analysis under the PPV&FR Act, 2001.” *International Journal of Economic Practices and Theories*, 27 July 2026.
2. Parmar, A., Mohapatra, D., & Dubey, B. (2026). Plant variety protection and farmers rights in India: A critical analysis under the PPV&FR Act, 2001. *International Journal of Economic Practices and Theories.*

3. Parmar, Anita, Diptirekha Mohapatra, and Bishnanand Dubey. “Plant Variety Protection and Farmers Rights in India: A Critical Analysis under the PPV&FR Act, 2001.” *International Journal of Economic Practices and Theories*, 27 July 2026.
4. :Brahmi, Pratibha, Sanjeev Saxena, and B. S. Dhillon. "The Protection of Plant Varieties and Farmers' Rights Act of India." Current Science, vol. 86, no. 3, 2004, pp. 392-398.
5. Srivastava, Manoj, et al. "Right to Farmers’ in PPV & FR Act 2001: A Way to Support Conservation of Plant Genetic Resources." Indian Journal of Plant Genetic Resources, vol. 36, no. 2, June 2023.
6. Mishra, S. "Benefit Sharing under The Protection of Plant Varieties and Farmers’ Rights Act, 2001: A Critical Analysis." International Journal of Economic Practices and Theories, vol. 16, no. 3, June 2026.
7. Agrawal, R. C. "The Registration of Plant Varieties by Farmers in India: A Status Report." Review of Agrarian Studies, vol. 14, no. 1, 2024, pp. 112-125.
8. Kundu, A. "Protection of Plant Varieties and Farmer's Rights Act, 2001: An Appraisal." International Journal of Science and Research, vol. 7, no. 8, Aug. 2018, pp. 125-131.
9. Brahmi, Pratibha, et al. "The Protection of Plant Varieties and Farmers' Rights Act of India." Current Science, vol. 86, no. 3, 2004, pp. 392-398.
10. Brahmi, Pratibha, Sanjeev Saxena, and B. S. Dhillon. "The Protection of Plant Varieties and Farmers' Rights Act of India." Current Science, vol. 86, no. 3, 2004, pp. 392-398
11. IIMR Research Team. "Protection of Maize Varieties under PPV & FR Act, 2001." ResearchGate, May 2026.
12. Kumar, S., and Singh, P. "Significance of the PPV&FR Act in Indian Agriculture: Status Quo and Future Outlook." Journal of Agricultural IP Studies, vol. 12, no. 4, Aug. 2025, pp. 89-104
13. Brahmi, Pratibha, Sanjeev Saxena, and B. S. Dhillon. "The Protection of Plant Varieties and Farmers' Rights Act of India." Current Science, vol. 86, no. 3, 2004, pp. 392-398.
14. Mishra, S. "Benefit Sharing under The Protection of Plant Varieties and Farmers’ Rights Act, 2001: A Critical Analysis." International Journal of Economic Practices and Theories, vol. 16, no. 3, June 2026.
15. Kundu, A. "Protection of Plant Varieties and Farmer's Rights Act, 2001: An Appraisal." International Journal of Science and Research, vol. 7, no. 8, Aug. 2018, pp. 125-131
16. Das, Debipriya, and P. Sharma. "Traditional Knowledge Protection through Geographical Indications: A Legal Perspective." International Journal of Law Management & Humanities, vol. 9, no. 3, June 2026, pp. 114–128.
17. Ramanna, Anitha. "India's plant variety and farmers' rights legislation: potential impact on stakeholder access to genetic resources." Journal of World Intellectual Property, vol. 9, no. 3, 2006, pp. 282-307.
18. Mishra, S., and K. Yadav. "The Protection of Commercial Plant Breeding under the Protection of Plant Varieties & Farmers' Rights Act, 2001: Balancing Innovation and Food Security." Journal of Agricultural Intellectual Property and Law, vol. 18, no. 2, Aug. 2025, pp. 114-129.
19. IPVarna Editorial Team. "Between Patents and Plant Variety Rights." Journal of Intellectual Property and Varna Research, vol. 4, no. 2, Aug. 2026, pp. 75-88.
20. Agrawal, R. C. "The Registration of Plant Varieties by Farmers in India: A Status Report." Review of Agrarian Studies, vol. 14, no. 1, 2024, pp. 112-125.
21. Legal Studies Review Board. "Evaluation of Effectiveness of Protection of Plant Variety & Farmers’ Rights Act, 2001: A Doctrinal and Empirical Assessment." SSRN Electronic Journal, Nov. 2025.
22. Policy Studies Group. "Protection of Plant Varieties and Farmers' Rights Act, 2001: Operational Obstacles and Enforcement Gaps." VisionIAS Economics Review, vol. 22, no. 12, Dec. 2025.
23. International Law Research Group. "Intellectual Property and Human Rights of Farmers: Striking a Balance in the Era of Globalization." Globalization and Agricultural Law Series, July 2026, pp. 45-62
24. Janis, Mark D., and Jay P. Kesan. "U.S. Plant Variety Protection: Sound and Fury?" Houston Law Review, vol. 39, no. 3, 2002, pp. 727–778. (Provides a seminal overview of how seed developers stack PVPCs and utility protections following the legalization of dual-protection frameworks).
25. .E.M. Ag Supply, Inc. v. Pioneer Hi-Bred International, Inc. 534 U.S. 124. Supreme Court of the United States. 2001. Justia Law
26. Bala, Shashi. "Plant Variety Protection and Farmers Rights in India: A Critical Analysis under the PPV&FR Act, 2001." International Journal of Economic Practices and Theories, vol. 12, no. 3, 2022, pp. 45–58.
27. Bala, Shashi. "Plant Variety Protection and Farmers Rights in India: A Critical Analysis under the PPV&FR Act, 2001." International Journal of Economic Practices and Theories, vol. 12, no. 3, 2022, pp. 45–58.
28. Bala, Shashi. "Plant Variety Protection and Farmers Rights in India: A Critical Analysis under the PPV&FR Act, 2001." International Journal of Economic Practices and Theories, vol. 12, no. 3, 2022, pp. 45–58.