

Protecting Plant IP in Europe

Patents, plant variety rights, and new genomic techniques

Plant innovation in Europe is protected through two partially overlapping but conceptually distinct legal regimes: patents and plant variety rights. The interaction between these systems is especially important in modern breeding and biotechnology, where commercially relevant innovations may concern both technical traits and specific plant varieties. This article summarizes the main principles governing protection of plant-related inventions and varieties in Europe, with particular attention to new genomic techniques.

1. Available Forms of Protection for Plants in Europe

As a starting point, patents and plant variety rights are the two principal forms of protection relevant to plant-related subject matter in Europe. Utility models, e.g., in Germany, are not available for plants.

Patents may cover plants and plant material, methods of making plants, uses of plants, nucleic acid sequences encoding traits of interest, promoter sequences conferring particular expression patterns, and comparable technical subject matter. By contrast, plant variety rights protect plant varieties as such.





2. Patent Protection for Plant-related Inventions

Under **Article 53(b) EPC** and **Rule 28(2) EPC**, three exclusions to patentability apply: plant varieties, essentially biological processes for the production of plants, and plants obtained exclusively by essentially biological processes cannot be patented. Thus, if a claimed plant is broader than a single variety and is not obtained exclusively by an essentially biological process, it may be patentable. This includes plants produced by new genomic techniques (NGT) such as CRISPR. Likewise, methods for producing plants may be patentable if they are not essentially biological and do not claim sexual crossing and selection steps.

2.1 Exclusion of Plant Varieties

Rule 26(4) EPC defines a plant variety as a plant grouping within a single botanical taxon of the lowest known rank that is defined by the expression of characteristics resulting from a given genotype or combination of genotypes, distinguished from any other plant grouping by the expression of at least one such characteristic, and considered as a unit with regard to its suitability for propagation unchanged.

According to decision **G 1/98**, a claim is not excluded from patentability merely because it may encompass plant varieties, so long as specific plant varieties are not individually claimed. Accordingly, claims directed to plants at a level broader than a single variety may be allowable. The exclusion to patentability applies irrespective of the method by which the variety was produced. It is therefore immaterial whether the plant was generated by conventional breeding, mutagenesis, or targeted gene-editing techniques.

2.2 Exclusion of Essentially Biological Processes

Rule 26(5) EPC provides that a process for the production of plants is essentially biological if it consists entirely of natural phenomena such as crossing or selection. In decision **G 1/08 (Tomatoes)**, the Enlarged Board of Appeal held that a non-microbiological process involving sexual crossing of whole genomes and subsequent selection is in principle excluded from patentability. A merely technical step that only assists or enables crossing or selection does not alter this conclusion.

By contrast, a process is not excluded if it includes, within the crossing and selection framework, an additional technical step that itself introduces or modifies a trait in the plant genome, provided that the trait is not the result of the mere mixing of parental genes through sexual crossing. This opens the door to patent protection for methods involving classical genetic manipulation or new genomic techniques, including targeted genome editing, as long as, following decision **T 356/93**, the claims do not explicitly or implicitly extend to sexual crossing and selection steps.

2.3 Plants obtained exclusively by Essentially Biological Processes

Rule 28(2) EPC, introduced with effect from 1 July 2017, states that European patents shall not be granted for plants or animals exclusively obtained by means of an essentially biological process. In current EPO practice following decision **G 3/19 (Pepper)**, this exclusion applies to relevant applications filed after 1 July 2017. As a result, claims directed to plants or plant material capable of generating entire plants, such as seeds, are not allowable if the claimed subject matter was obtained exclusively by an essentially biological process. The term «exclusively» is important here: The EPO Guidelines indicate that patentability may still be available where the production history also includes a non-essentially biological, technical step. This issue must be distinguished from process claims, for which sexual crossing and selection steps must not be part of the claimed process, even implicitly.

2.4 German National Limits to Patent Protection

National law also affects practical enforcement and scope. Under German law, for example, a patent directed to a plant may extend to biological material derived from that plant through propagation or multiplication, in identical or divergent form, if the derived material possesses the same characteristics. This can include seeds and harvested material.

German law further recognizes limitations such as exhaustion under **section 9b PatG**, the farmer's privilege under **section 9c PatG**, and a partial breeder's exemption under **section 11 No. 2a PatG**. The limited breeder's exemption does not generally permit unrestricted commercialization of the resulting variety before expiry of the relevant patent. Other jurisdictions within the EU, however, have established a broader breeder's exemption.

3. The EU Regulatory Debate on New Genomic Techniques

Gene-edited plants are currently regulated in the EU as genetically modified organisms (GMOs) and are therefore subject to extensive approval, testing, and traceability requirements. In July 2023, the European Commission proposed a reform under which certain NGT plants that could also have arisen through conventional breeding would be classified as »NGT 1« plants and would cease to be treated as GMOs.

The proposal became politically contentious because the European Parliament, in February 2024, added a broad patenting ban covering NGT plants, plant material, plant parts, genetic information, and process features. The Council of the EU however later revised the proposal in March 2025 to allow patenting, and the trilogue process resulted in a December 2025 compromise without a patenting ban.

Following the plenary vote of 17 June 2026 by the European Parliament, *publication of the agreed upon text*¹ on 26 June 2026, and the European Commission's *publication of its implementing strategy on 17 July 2026*², the new regulation will take effect from 17 July 2028. NGT 1 plants will no longer be treated as GMOs and no patenting ban will apply. A voluntary code of conduct on patents, oversight, monitoring and evaluation will be developed by the European Commission in cooperation with the Member States and an expert group will assess the impact of patents for NGT plants on access to NGT plant biological material, transparency of the patent landscape, an innovation in the field of NGT plants.

4. Plant Variety Rights

Plant variety rights (PVRs) protect plant varieties rather than technical inventions. The international basis is the **International Union for the Protection of New Varieties of Plants (UPOV) Convention**, and in Europe protection is available via national offices or the Community Plant Variety Office (CPVO). A PVR grants the exclusive right to commercially exploit the protected variety.



¹ https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=OJ:L_202601388

² https://food.ec.europa.eu/document/download/4c13763b-bed7-40f1-8009-56fc4b7c7a57_en?filename=ngt_leg_implementation-strategy_reg-2026-1388.pdf

Under **Article 1(iv) of the 1991 Act of the UPOV Convention**, a variety is a plant grouping within a single botanical taxon of the lowest known rank that is defined by the expression of characteristics resulting from a genotype or combination of genotypes, distinguished from any other plant grouping by at least one such characteristic, and considered as a unit with regard to its suitability for propagation unchanged. The same concept is reflected in German plant variety law at **section 2 (1a) SortenschutzG**. The definition matches that provided in Rule 26(4) EPC.

4.1 Requirements for Protection

To qualify for protection, a variety must be distinct, uniform, stable («DUS»), and new, and must bear an acceptable denomination. Novelty generally requires that the variety has not been sold or otherwise commercialized for more than one year in the country of application or more than four years abroad, extended to six years for trees and vines.

The DUS requirements are tested through official examination. The plant variety office will grow and propagate the variety over several cycles and assess relevant phenotypic features such as, e.g., plant height, color, or leaf shape while also growing and propagating comparator varieties. Genetic analysis does not replace the DUS assessment, although it may be used to narrow the set of comparator varieties. The decisive criterion remains the observable phenotype.

4.2 Limits to PVR Protection

PVRs are subject to several important limitations, including private and non-commercial use, experimentation, exhaustion, and the farmer's privilege. Most importantly, PVR law provides a full breeder's exemption. Protected varieties may therefore generally be used freely for breeding, discovering, and developing new plant varieties, and the resulting new varieties may also be marketed without the authorization of the earlier right holder.

This differs fundamentally from German patent law, under which breeding activity may be exempted in part, but subsequent commercialization may still infringe the patent.

4.3 Essentially Derived Varieties (EDVs)

Under **Article 14(5)(b) of the 1991 Act of the UPOV Convention and section 10(3) of the SortenschutzG**, a variety is «essentially derived» from an initial variety where it is predominantly derived from that variety while retaining the expression of the essential characteristics resulting from the genotype or combination of genotypes of the initial variety; is clearly distinguishable from the initial variety; and, except for the differences caused by the act of derivation, conforms to the initial variety in the expression of those essential characteristics. **Article 14(5)(c) of the 1991 Act of the UPOV Convention**, which finds no equivalent in the German SortenschutzG, further specifies that essentially derived varieties may be obtained for example by the selection of a natural or induced mutant, or of a somaclonal variant resulting from plant tissue culture, the selection of a variant individual from plants of the initial variety, backcrossing, or transformation by genetic engineering. UPOV guidance (Guidelines on Essentially Derived Plant Varieties) further indicates that mono-parental varieties resulting from mutation, genetic modification, or genome editing are per se predominantly derived from the initial variety.

The key consequence of EDV status is that the right in the initial variety extends to the EDV (unless the initial variety is itself an EDV). Accordingly, the holder of a plant variety right for an EDV may not be able to market said EDV without authorization from the holder of the PVR for the initial variety. This point is especially significant for NGT-derived varieties. Under a strict UPOV-oriented understanding, genome-edited varieties would automatically qualify as EDVs and therefore remain commercially dependent on the initial variety right holder unless that initial variety was also essentially derived.



5. Comparative Overview

Aspect	European Patent	Plant Variety Right
Protection period	20 years from filing	25 years from grant; 30 years for trees, vines, and potatoes
Protected subject matter	Technical feature or trait of a plant; sequences; constructs; uses; technical methods	Plant variety as such, defined by its overall phenotype and characteristics
Scope of protection	May extend to plants, plant parts, seeds, and derived biological material, depending on claim and national law	Mainly directed to propagating material and exploitation of the protected variety
Breeder's exemption	Limited	Full, subject to EDV qualification
Commercialization of follow-on variety	May require license during patent term	Generally permitted unless the follow-on variety is an EDV
Geographical scope	EPC member states via national validations	National rights or EU-wide protection via CPVO
Relevance for NGTs	Particularly important for technical traits and technical production methods	Important for protection of the resulting variety, but subject to EDV constraints

6. Strategic Takeaways

For innovators in plant breeding and agricultural biotechnology, the key strategic lesson is that patents and plant variety rights should be considered together rather than as alternatives in the abstract. Patents are particularly valuable for technical

innovations, including gene-edited traits and enabling technologies. PVRs are indispensable for protecting commercially important varieties and may offer longer effective exclusivity for the variety as such. However, the broad breeder's exemption and the EDV regime must be carefully considered, especially where follow-on genome editing is expected.

Accordingly, protection strategy should be aligned with the precise commercial asset: the trait, the method, the variety, or a combination of these. In many cases, the most effective approach will involve parallel consideration of both patent protection and plant variety rights.



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