Introduction .......................................................................................................... 2
1. Understanding plant varieties ............................................................................ 2
   1.1. Plant variety protection (PVP) ...................................................................... 3
   1.2. What is a plant variety? ............................................................................... 4
   1.3. The scope of the breeders’ rights ................................................................. 5
   1.4. The breeder’s exemption and the farmers’ privilege ..................................... 5
   1.5. Hybrids ....................................................................................................... 6
2. Protectable plant varieties .................................................................................. 7
   2.1. Novelty ........................................................................................................ 8
   2.2. Technical requirements (DUS) ................................................................... 8
   2.3. Variety denomination .................................................................................. 11
   2.4. What are the main fees in the life of a CPVR? ............................................. 12
3. Interface with other IP rights ........................................................................... 12
   3.1. Patents ......................................................................................................... 12
   3.2. Trade marks .................................................................................................. 13
Conclusion ............................................................................................................. 14
Useful Resources .................................................................................................. 15
Introduction

In early history man selected and kept seeds or plants of species that offered a secure source of food. Innovative farmers realised that considerable progress could be achieved by systematic selection, resulting in the art of plant breeding.

The essence of plant breeding is the discovery or creation of genetic variation in a plant species and the selection from within that variation of plants with desirable traits that can be inherited in a stable fashion.

The development of new and improved varieties of plants benefits the economy by increasing the marketability of crops and improving rural income and overall economic development. Moreover, it favours the environment by increasing productivity and minimising the use of land and other scarce resources and benefits society in general by providing a better product quality.

Therefore, it is crucial to provide an effective system of plant variety protection (PVP), which encourages the development of new plant varieties and which is not impaired by the effects of other intellectual property (IP) systems.

This Fact Sheet aims at illustrating the importance of plant variety protection by providing an overview of the plant variety right (PVR) system and focusing on the protection at EU level.

1. Understanding plant varieties

Different types of plant varieties are developed, depending upon the physiology of the plants of each species and the ways in which the plants of the species can be reproduced. Plant breeders use all available technology both to create genetic variation and to select from within that variation the desired traits. Consequently, the basis of plant breeding is genetic variability.

Thanks to modern technology and continuous development, the time to develop new varieties has been significantly reduced. However, it still takes several years of crossing and selection to develop a new plant variety, the latter being a time-consuming and high-investment business with long term goals. On the other hand, the plant varieties resulting from the scientific efforts and the related economic investment can be easily and quickly reproduced by others by means of simple multiplication of plant material. Therefore, to recover their investments, plant breeders can opt for IP protection on their products1.

---

1 See Szonja Csörgő, Patents and plant breeders’ rights – how transparency helps, European IPR Helpdesk Bulletin Issue (31).
1.1. Plant variety protection (PVP)

The PVP system was established in 1961 as a *sui generis* protection system by the *International Convention for the Protection of New Varieties of Plants* (the “UPOV Convention”). The Convention sets out the basis for UPOV members to provide PVP by granting an IP right: the breeder’s right. To obtain protection, individual applications for registration must be filed with the national or regional PVP Offices of UPOV members.

The UPOV Convention simultaneously established an intergovernmental organisation, the *International Union for the Protection of New Varieties of Plants* (UPOV). UPOV is, inter alia, in charge of developing the rules to be applied to the examination of new plant varieties.

The *Agreement on Trade-Related Aspects of Intellectual Property Rights* (the TRIPS Agreement), which is an international agreement that sets minimum standards for IP regulations, explicitly addresses the IP protection of plant varieties under Article 27(3)(b).

At EU level, the Community plant variety rights system (CPVR system) was created as an independent scheme of protection for new plant varieties with a unitary effect throughout the EU. The CPVR system is based on the UPOV 1991 Act, regulated by *Council Regulation (EC) No 2100/94 on Community plant variety rights* (the “Basic Regulation”) and it is implemented by the *Community Plant Variety Office* (CPVO).

In contrast to other IP rights systems, the CPVR system does not substitute or harmonise the national laws of the EU Member States on PVP. The CPVR system coexists with the national systems. However, cumulative protection is prohibited. Any variety which is the subject matter of a CPVR cannot be the subject matter of

---

2 See the full list of [UPOV members](https://www.u-pov.org). All EU Member States except Greece, Cyprus, Luxembourg and Malta are UPOV members and have implemented a *sui generis* system of PVP.

3 The TRIPS Agreement is signed between all member nations of the [World Trade Organization](https://www.wto.org). Under Art 27(3)(b), TRIPS members may exclude from patentability plants and essentially biological processes for the production of plants and shall provide protection of plant varieties either by an effective *sui generis* system, by patents or any combination thereof.

4 The UPOV 1991 Act is the last revision of the UPOV Convention.
a national PVR. Where a national PVR has been granted prior to the grant of a CPVR, the holder of the national right shall be unable to invoke his rights for as long as the CPVR remains effective\textsuperscript{5}.

The UPOV Convention foresees a minimum term of protection for plant varieties of 20 years from the date of grant of the PVR. This minimum duration of protection is extended to 25 years in the case of trees and vines. At EU level, the CPVR protection runs until the end of the 25\textsuperscript{th} calendar year following the year of grant, and until the end of the 30\textsuperscript{th} calendar year for potatoes, vine and tree species.

1.2. What is a plant variety?

The definition of plant variety\textsuperscript{6} is wider than the definition of protectable variety as it does not require that all conditions for the grant of a plant variety right shall be fully met. A plant variety is a plant grouping, selected from within a species or sub-species, with a common set of characteristics. It cannot be a single plant, a trait, a chemical or a technology.

A variety must be defined by expressed characteristics resulting from a given genotype or a combination of genotypes (i.e. these characteristics must find their expression at phenotypical level – the morphological and physiological traits of the variety).

A plant grouping consists of entire plants or parts of plants that are capable of producing entire plants, i.e. variety constituents (used as a synonym for “propagating material”). For plants that can be vegetatively propagated (i.e. by cuttings or runners), vegetative propagating material is deemed to include parts of plants used to produce new plants, e.g. cuttings and grafts, or whole plants.

\textsuperscript{5} Article 92 of the Basic Regulation.

\textsuperscript{6} Article 5(2) of the Basic Regulation at EU level. At international level, Article 1(vi) of the UPOV 1991 Act. In the European Patent Convention see Rule 26(4).
1.3. **The scope of the breeders’ rights**

PVRs are obtained through decisions by a designated authority and subsequent registration in an official register. They are awarded to the breeder or his successor in title, i.e. either the person who bred the variety or who discovered and developed it.\(^7\)

<table>
<thead>
<tr>
<th>Acts requiring the authorisation of the right holder</th>
</tr>
</thead>
<tbody>
<tr>
<td>• production or reproduction(^8) of the variety</td>
</tr>
<tr>
<td>• conditioning for the purpose of propagation</td>
</tr>
<tr>
<td>• offering for sale, selling or other marketing</td>
</tr>
<tr>
<td>• exporting or importing</td>
</tr>
<tr>
<td>• stocking for any of the aforementioned purposes</td>
</tr>
</tbody>
</table>

The effects of the exclusive rights conferred by a protected plant variety right are subject to limitations so that some acts done for certain purposes do not require the prior authorisation of the right holder.

<table>
<thead>
<tr>
<th>Exceptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acts done for:</td>
</tr>
<tr>
<td>• private use for non-commercial purposes</td>
</tr>
<tr>
<td>• experimental (test) purposes</td>
</tr>
<tr>
<td>• further breeding (breeder’s exemption)</td>
</tr>
<tr>
<td>• the use of farm-saved-seeds (FSS)</td>
</tr>
</tbody>
</table>

1.4. **The breeder’s exemption and the farmer’s privilege**

The breeder’s exemption is a unique and key feature of the PVR system that ensures the safeguard of free access to protected varieties for further breeding and commercialisation. The resulting variety can be protected and commercialised without any obligation towards the right holder of the protected variety.\(^9\)

---

\(^7\) Article 1(iv) of the UPOV 1991 Act and Article 11 of the Basic Regulation. The breeder is the one who is entitled to apply for protection of a variety.

\(^8\) Reproduction is also referred to as multiplication.

By allowing free access to protected varieties, the breeder’s exemption guarantees the continued creation of improved varieties, safeguarding the access to genetic variation.

The farmer’s privilege (FSS) is provided in the UPOV 1991 Act as an optional exception for UPOV members. This means that the members of the Union can choose whether to implement it into their national PVR legislations. The PVR is restricted, within reasonable limits and provided that the legitimate interests of the right holder are safeguarded. The provision usually regards certain crops for which there has been a common practice of farmers saving their own seeds, i.e. seeds are produced on a farm for the purpose of re-sowing on the same farm and not for sale purposes. The provision allows each member of the Union to take into account this practice when providing variety protection.

At EU level, the Basic Regulation provides the list of species to which the FSS exemption applies. Farmers benefiting from this derogation are required to pay an equitable remuneration to the right holder. The amount of this remuneration must be remarkably lower than the corresponding licence fee on commercialised propagating material of the same variety within the same area. Small-size farmers are exempt from such payment.

1.5. Hybrids

Whereas the UPOV Convention does not explicitly refer to hybrids, the Basic Regulation does, when referring to the object of a CPVR. Therefore, hybrids must be considered as plant varieties.

Hybrids are based upon the controlled cross-pollination of parent lines. The seed resulting from the cross-pollination typically exhibit greater vigour than the parent lines, resulting, for example, in plants with higher yields, better resistance to stress, etc. The same controlled cross-pollination must be repeated each time the seed of those hybrid varieties is produced. The need of repeated use of parent lines created doubts on the opportunity of considering hybrids as plant varieties, which, per definition, have the capability to be propagated unchanged. However, it is now considered that the hybrid variety as such remains unchanged as long as its parents remain unchanged and thus, it is a unit with regards to its suitability for being propagated unchanged.

As a result, from the early 2000s, there was a remarkable increase in the PVR protection applications for hybrids.

---

10 Ibid.
11 Article 5(2) of the Basic Regulation states that “For the purpose of this Regulation, ‘variety’ shall be taken to mean a plant grouping within a single botanical taxon of the lowest known rank, which grouping, irrespective of whether the conditions for the grant of a plant variety right are fully met, can be [...] considered as a unit with regard to its suitability for being propagated unchanged.”
2. Protectable plant varieties

A plant variety can be protected if it is new, distinct, uniform and stable. Furthermore, it should be identified with a suitable denomination and the registration fees must be paid.

Mere discoveries are excluded from PVP, thus the intervention of the breeder is necessary.

The examination of a candidate variety consists of the assessment of the registration requirements and generates its description, which is based on its characteristics listed in the applicable technical protocols (e.g. plant height, leaf shape, time of flowering, etc.) by which it can be defined and identified as a variety.

The variety description is a translation on paper of the results of the technical examination according to the applicable table of characteristics. A conventional system of notes, predefined in the UPOV and CPVO technical protocols, is introduced for each characteristic. The examination of new plant varieties is thus conducted in a harmonised way throughout the territory of the UPOV members. As a result, descriptions of protected varieties are standardised and internationally recognised.

Main steps in applying for CPVR protection

- Filling the application at the CPVO or through one of the national offices
- Formal examination by the CPVO (i.e. novelty, entitlement and credentials of procedural representatives). If successful, an application date is granted
- Technical examination (DUS). The duration varies from 1 year for most ornamental species to 6 years for certain fruit tree varieties
- Examination of the suitability of the variety denomination by the CPVO
- Grant of PVP by the CPVO

The provision of regional registration systems under the UPOV Convention, such as the EU system, entails administrative costs, with time and resource saving (i.e. one single procedure suffices to obtain one valid right covering the territory of all the EU Member States; the breeder will be filing one single application, undergoing one technical examination and paying one set of fees).

12 Under section 1.1 above the lack of harmonisation through PVP within the EU is mentioned. However, when assessing candidate varieties for obtaining a CPVR, they must follow CPVO guidelines based on the DUS test protocols developed by UPOV. Therefore, the same standards are applied by the entrusted examination offices irrespective of whether they examine national applications or act as examination offices for CPVR applications.

13 Further information on the CPVO’s website.

14 The average time to get a suitable denomination is at least 5 months.
2.1. Novelty

The novelty requirement is a commercial concept, linked to the availability of the plant material on the market for its commercial exploitation by the right holder or with its consent.

The requirement is fulfilled if, at the date of application, the propagating (i.e. variety constituents) or harvested material of the plant variety have not been sold, or otherwise disposed of, to others within certain periods in specific territories:

- Within 1 year in the territory in which the application has been filed, or
- Within 4 years in other territories, or 6 years in the case of trees and vines.

Therefore, if the candidate plant variety was commercialised within the said grace period, it would still be considered as a novel variety. As an example, when filing a CPVR application for the protection of a strawberry variety, the grace period would be of one year in the territory of the EU and four years outside the EU.

The registration of the variety in an official register without commercialisation does not destroy novelty. However, it renders the variety of common knowledge which may be harmful for the assessment of distinctness of other varieties.

The acts that are novelty-breaking are the selling of the variety and other forms of disposal for the purpose of exploitation of the variety.

2.2. Technical requirements (DUS)

At EU level, the examination of distinctness, uniformity and stability (DUS) is carried out in a growing trial by an entrusted examination office (EO).

The technical questionnaire submitted by the applicant, which contains the main characteristics and other technical information on the candidate variety, helps the EO to perform the test with the appropriate reference varieties. In any case the emphasis is clearly on the physical material and not merely on a written description.

The CPVO works in collaboration with a network of entrusted EOs throughout the EU that are in charge of performing the DUS test. The place where the examination of the candidate variety must take place is decided by the CPVO depending on different criteria - such as the wish of the breeder, the geographical origin of the variety (indicated in the application form) or the experience of the entrusted EO.
The geographical origin of the variety is crucial for field crops, where the most similar climate to the climate where the variety was bred and/or will probably be commercialised plays an important role. The expertise of an EO in testing a specific species is a decisive criterion too.

One of the most relevant data comprised in the application form is the existence of prior applications/registrations in the world for the candidate variety.

The harmonisation of practices in the conduct of technical examinations that has to be performed by the competent national authorities may result in a centralised testing for a candidate variety and avoids a repetition of a technical examination by another authority. It enables a mutual recognition of technical reports. This means in practice that it is possible to perform the testing on behalf of another authority or use the technical examination results of the competent authority of another UPOV member by purchasing the corresponding technical report.

The outcome of the technical examination consists of the DUS technical report with the variety description attached to it.

2.2.1. Distinctness

The variety should be clearly distinguishable from any other variety whose existence is a matter of common knowledge at the time of filing the application. The concept of common knowledge comprises all existent varieties within the same species. In order for a plant variety to fulfil this requirement, its phenotypic characteristics shall be different from those of the varieties of common knowledge.

These characteristics may have direct commercial relevance like the flower or fruit colour. However, this is not a required criterion and it is often not the case.
2.2.2. Uniformity

The variety shall be sufficiently uniform in the expression of those characteristics which are included in the examination for distinctness, as well as any others used for the variety description, subject to the variation that may be expected from the particular features of its propagation. This expected variation means that when testing the uniformity requirement, only a limited number of off-type individuals are allowed for the relevant characteristics of the variety in one cycle of propagation.

Those relevant characteristics shall be the result from a given genotype or combination of genotypes and must be sufficiently consistent and repeatable in a particular environment, or after repeated propagation. The type or way of propagation is taken into account because it may lead to different standards, like hybrids.

2.2.3. Stability

The plant variety shall be expressed in the same way, meaning that its relevant characteristics shall remain unchanged after repeated propagation. Therefore, in practice, stability is usually assumed based upon the assessment of uniformity.
2.3. Variety denomination

The denomination serves as the identifier of the variety in the market to avoid confusion as to which plant material is being sold.

Anybody making the variety constituents of a protected variety available for commercial purposes must use its variety denomination, even after the expiration of the IP right on the variety. This obligation applies on a worldwide level as each variety should have one name only\(^\text{15}\).

The CPVO has developed guidelines\(^\text{15}\) to assess the suitability of variety denominations for CPVR applications. Furthermore, those guidelines are complemented with detailed explanatory notes that contain many examples, which have proven useful when it comes to both choosing the right denomination by the holder and assessing the proposals by the Office.

The proposal for a variety denomination can be filed either together with the application for a CPVR or at a later stage. However, if the denomination proposal is filed separately, the CPVO should receive it before the end of the technical examination, otherwise the CPVR application is refused\(^\text{16}\).

\(^{15}\) See Francesco Mattina and Philipp von Kapff, *Trademarks and variety denominations*, European IPR Helpdesk Bulletin issue No 31 on IP and agribusiness.

\(^{16}\) Find the "proposal for a variety denomination" form in all the EU languages on the [CPVO’s website](http://www.cpvo.eu).
2.4. What are the main fees in the life of a CPVR?

Commission Regulation (EC) No. 1238/95 of 31 May 1995 (the “Fees regulation”), last amended in 2016, includes all the fees payable to the CPVO, notably the:

- Application fee (450 € for on-line applications)
- Examination fees (from 1,530 € up to 3,350 €, depending on the species)
- Fee for taking over reports (320 €)
- Annual fee (330 € per variety and per year of protection)
- Appeal fee (1,500 €)

Additional fees may be applicable, i.e. administrative fees such as for issuing certified documents or the recordal of new entries in the Register.

3. Interface with other IP rights

One of the main reasons for the creation of a sui generis system of protection was the fact that plants, like all living material, display various peculiarities as a result of the laws of nature. It was thought that the protection of such objects could only be granted following special rules that take these peculiarities into account.

3.1. Patents

The sui generis protection through PVRs and the patent system are two distinct branches of IP and under both systems the double protection is prohibited.

Developments in molecular biology led to patents being introduced in the plant breeding sector. Both IP rights may conflict with each other creating a potential imbalance where the patenting of plant-related traits might limit the access to biological material for further breeding and research. Indeed, the breeder’s exemption is absent in patent law and instead where the principle of dependence shall be applied. The patent holder can lay an exclusive claim to genetic material preventing others from using it or requiring them to pay royalties, whereas breeders can make free use of plant material protected by PVRs. A single patented gene may have an effect on the breeding of many varieties.

Plants are patentable as long as the technical feasibility of the invention is not limited to a single plant variety, i.e. whereas the European patent system explicitly excludes from patentability plant varieties per se, it allows patent protection on inventions which may encompass several plant varieties. A trait or a

---

17 An overview of the fees structure can be found on the fees and payments section of the CPVO’s website. Check the Fees regulation for any amendment in the amount of fees.
18 Third parties are allowed to use the inventions within a very limited scope for experimental purposes, whereas protected plant material may be used for the creation of new varieties without limitation - due to the breeder’s exemption. See Gert Würtenberger, Paul van der Kooij, Bart Kiewiet and Martin Ekvad (2015), European Union Plant Variety Protection, Oxford University Press.
19 Article 4(2) of the Biotech Directive (98/44/EC) and Rule 27(b) of the European Patent Convention.
The European IPR Helpdesk

chemical characteristic would not be patentable but microbiological processes or the products thereof could be.

Regarding essentially biological processes for the production of plants, the European Patent Convention (EPC) has been amended to explicitly exclude from patentability plant and animals exclusively obtained by said processes, providing more clarity and legal certainty for the users of the European patent system

Genetic engineering techniques are in principle not excluded from patentability since the primary purpose is the insertion and/or modification of one or more genes in a plant.

3.1.1. Possible solutions

The need to access patented technology can be satisfied by the following:

- A search on the PINTO database to check whether a plant variety falls under the scope of a patent or patent application.
- Checking if the applicable national patent laws as a limited breeder’s exemption is included in, for instance, the Dutch, French or German patent law, where breeders are allowed to freely use patented biological material for breeding and developing other varieties.
- Requesting from the patent holder a compulsory licence for non-exclusive use of the patented material.
- Using the International Licensing Platform (ILP), to gain access to biological material covered by patents at fair and reasonable prices.

3.2. Trade marks

As explained under section 2.3 above, plant varieties must be designated by a denomination.

The object of the protection is the variety, and the denomination is the generic designation given to the variety. The term “generic” does not mean “descriptive”

---


21 The patent information and transparency on-line database was created by the European Seed Association (ESA) and is the only database that provides the link between a plant variety and a patent or patent application. For all types of patent searches in Europe, the most valuable tool is *espacenet*, EPO’s online database. For information on Community PVRs, *CPVO’s databases* should be consulted. See Szonja Csörgö, *Patents and plant breeders’ rights – how transparency helps*, European IPR Helpdesk Bulletin issue No 31 on IP and agribusiness.

22 This limited breeder’s exemption is not part of the Biotech Directive, however, it is foreseen under Article 27(c) of the Agreement on a Unified Patent Court (*UPC Agreement*). The full breeder’s exemption included in the UPOV Convention and the Basic Regulation allows, in addition, for the commercialisation of products stemming from the breeding activities.

23 Article 12 of the Biotech Directive establishes a cross licensing regime subject to certain conditions explained under Article 12(3).

24 This platform guarantees worldwide access to patents that cover biological material for vegetable patents.
as the denomination must be recognisable as such and it is not the case if it consists exclusively of descriptive characteristics.

One of the impediments for the designation of a variety denomination is the prior existence of an identical or similar trade mark registered in a Member State or at EU level before the approval of the variety denomination by the CPVO. The prior registered trade mark should be registered for goods identical or similar to the species to which the variety belongs. Likewise, under EU trade mark law, and thus also for national marks of the EU Member States, already registered variety denominations cannot be applied for as trade marks (i.e. the application would fall under absolute grounds for refusal)\(^{25}\).

**Conclusion**

There is a fundamental need for the development of improved plant varieties. However, in order to reap the benefits of their investment, breeders need an effective PVP system.

Plant varieties present a number of challenges that are different from those faced by other IP areas, such as the constant need to adapt to climate change, urbanisation or an increasing world population. In this context, PVRs were born as the IP rights designed specifically to protect new varieties of plants.

Besides PVRs, patents play an increasing and important role in the plant breeding sector.

---

\(^{25}\) Mattina and von Kapff (n 13).
Useful Resources

For further information, also see:

- The European IPR Helpdesk Bulletin Issue (31) on IP and agribusiness.

- The Community Plant Variety Office, CPVO.

- The International Convention for the Protection of New Varieties of Plants, UPOV.

- CPVO, The relationship between IP, PVRs and innovation and its importance for European SMEs, European IPR Helpdesk Bulletin Issue (27)


- Protection of biotechnological inventions, the European Commission.

- IP protection for plant related inventions, the European Seed Association (ESA).

- Plant breeding innovation, ESA.

- The PINTO database, ESA.

- The International Licensing Platform, ILP.
GET IN TOUCH

For comments, suggestions or further information, please contact

European IPR Helpdesk
c/o infeurope S.A.
62, rue Charles Martel
L-2134, Luxembourg

Email: service@iprhelpdesk.eu
Phone: +352 25 22 33 - 333
Fax: +352 25 22 33 – 334

ABOUT THE EUROPEAN IPR HELPDESK

The European IPR Helpdesk aims at raising awareness of Intellectual Property (IP) and Intellectual Property Rights (IPR) by providing information, direct advice and training on IP and IPR matters to current and potential participants of EU funded projects. In addition, the European IPR Helpdesk provides IP support to EU SMEs negotiating or concluding transnational partnership agreements, especially through the Enterprise Europe Network. All services provided are free of charge.

Helpline: The Helpline service answers your IP queries within three working days. Please contact us via registration on our website – www.iprhelpdesk.eu – phone or fax.

Website: On our website you can find extensive information and helpful documents on different aspects of IPR and IP management, especially with regard to specific IP questions in the context of EU funded programmes.

Newsletter and Bulletin: Keep track of the latest news on IP and read expert articles and case studies by subscribing to our email newsletter and Bulletin.

Training: We have designed a training catalogue consisting of nine different modules. If you are interested in planning a session with us, simply send us an email at training@iprhelpdesk.eu.

DISCLAIMER

The European IPR Helpdesk project receives funding from the European Union’s Horizon 2020 research and innovation programme under Grant Agreement No 641474. It is managed by the European Commission’s Executive Agency for Small and Medium-sized Enterprises (EASME), with policy guidance provided by the European Commission’s Internal Market, Industry, Entrepreneurship and SMEs Directorate-General.

Even though this fact sheet has been developed with the financial support of the EU, its content is not and shall not be considered as the official position of the EASME or the European Commission. Neither EASME nor the European Commission nor any person acting on behalf of EASME or of the European Commission is responsible for the use which might be made of this content.

Although the European IPR Helpdesk endeavours to deliver a high level service, no guarantee can be given on the correctness or completeness of the content of this fact sheet and the European IPR Helpdesk consortium members are not responsible and may not be held accountable for any use which might be made of this content.

The support provided by the European IPR Helpdesk should not be considered as of a legal or advisory nature.

© European Union (2018)