

WIPO-UPOV/SYM/03/1

ORIGINAL: English

DATE: October 21, 2003



WORLD INTELLECTUAL
PROPERTY ORGANIZATION



INTERNATIONAL UNION
FOR THE PROTECTION OF
NEW VARIETIES OF PLANTS

**WIPO-UPOV SYMPOSIUM ON
INTELLECTUAL PROPERTY RIGHTS
IN PLANT BIOTECHNOLOGY**

organized by
the World Intellectual Property Organization (WIPO)

and
the International Union for the Protection of
New Varieties of Plants (UPOV)

Geneva, October 24, 2003

PLANT BIOTECHNOLOGY DEVELOPMENTS
IN THE INTERNATIONAL FRAMEWORK

*Rolf Jördens, Vice Secretary-General,
International Union for the Protection of New Varieties of Plants (UPOV)*

I. INTRODUCTION

1. A year ago, on October 25, 2002, the World Intellectual Property Organization (WIPO) and the International Union for the Protection of New Varieties of Plants (UPOV) organized a Symposium on the “Co-existence of Patents and Plant Breeders’ Rights in the Promotion of Biotechnological Developments.” The purpose of the Symposium was to address the challenges facing inventors and plant breeders in the light of developments in the world of plant biotechnology and, in particular, genetic engineering.

2. The issue attracted a large degree of attention and provided a unique opportunity to identify measures which could be necessary for the balanced co-existence of patents and plant breeders’ rights. In particular, it highlighted: the necessity of well identified measures based on reliable research; clarification of the scope of the research exemption in the national laws; the policy that the industry is likely to follow concerning protection of biotechnological inventions or breeding work; and good cooperation in the fields of patents and plant breeders’ rights.

3. In response to the issues raised at that Symposium and, in particular, the need for good cooperation in the fields of patents and plant breeders’ rights, UPOV and WIPO recognized the value of considering how these intellectual property rights operate at an international, regional and national level.

4. The purpose of my presentation is to illustrate the impact of the UPOV system in promoting the development of new varieties of plants and to recall some of the key features of the UPOV Convention which enable it to optimize advances in the development of new varieties.

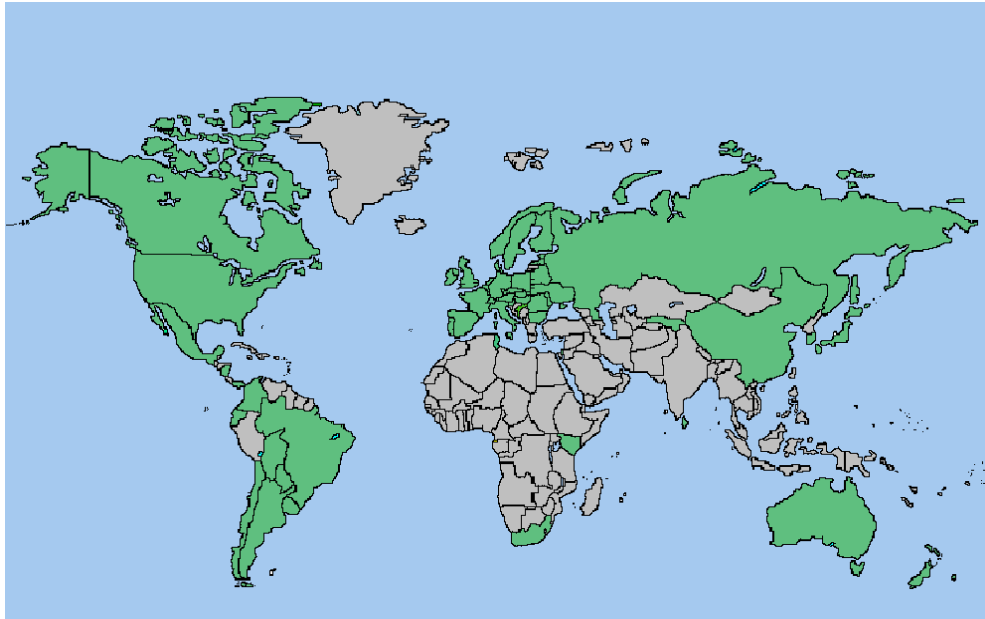
II. IMPACT OF THE UPOV SYSTEM

5. A growing number of States are aware of the need to create a favorable environment for investment in plant breeding, which is recognized as a crucial tool in the development of agriculture and as a basis for overall economic development. The majority of States are opting for a UPOV based *sui generis* system, sometimes in parallel to patent protection, for plant varieties. UPOV has now 53 members (Figure 1a). On the one hand, UPOV covers the most important agricultural producers and countries with the largest populations worldwide, but on the other hand, more than half of the UPOV members are from the developing world. In 2003, two States have joined UPOV and five additional States have requested the Council of UPOV to assess the conformity of their legislation on plant variety protection with the UPOV Convention because they have taken a decision to become a member of UPOV.

6. UPOV continues to be the only internationally harmonized and effective *sui generis* system of plant variety protection and is continuing to expand. Figure 1b shows States/Intergovernmental Organizations which have initiated the process to accede to UPOV. Statistics provided to UPOV show that around 7,500 new titles of protection, based on principles of the UPOV Convention, have been granted in 2002 (Table 1).

Figure 1a

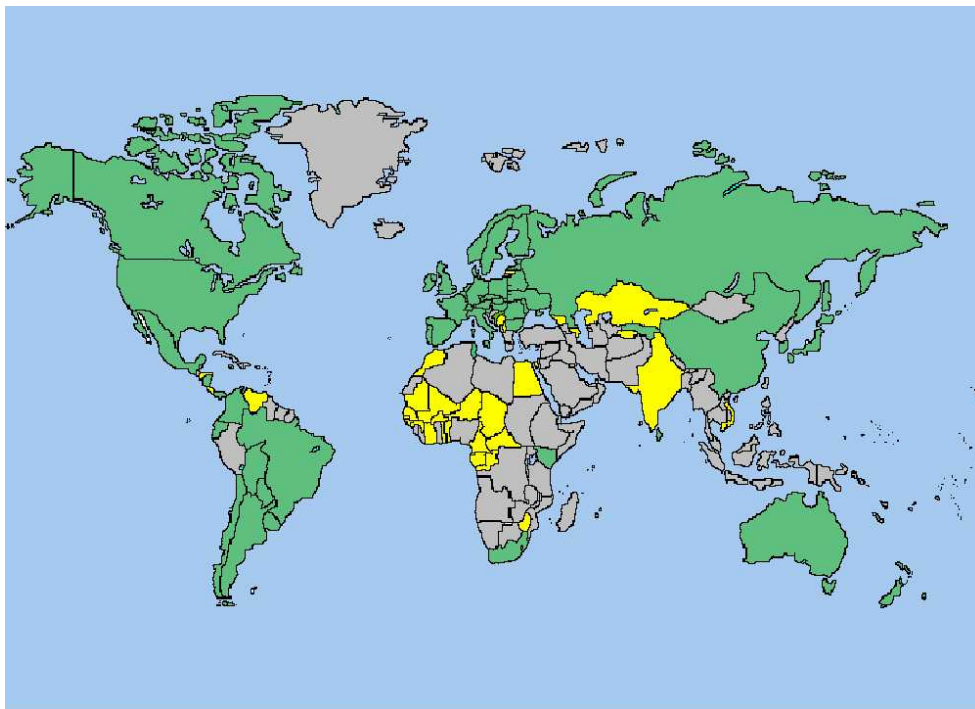
Members of UPOV (August 2003)



States in dark grey (green when printed in color) = UPOV members

Figure 1b

States/Intergovernmental Organizations Having Initiated Accession to UPOV



States/Organizations which have initiated the process to accede to UPOV in light grey (yellow when printed in color)

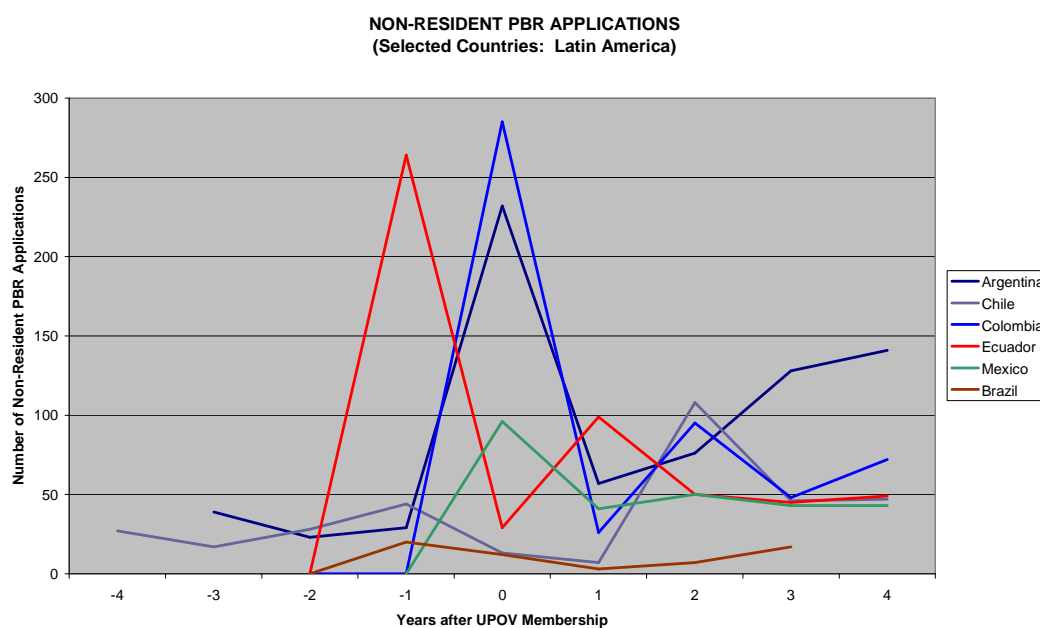
Table 1 Titles of Protection Based on the UPOV Convention

Year	Applications filed by:			Titles issued to:			Titles in force at end of reference year
	Residents	Non-residents	Total	Residents	Non-residents	Total	
1992	4,137	3,128	7,265	2,547	2,032	4,579	24,988
1997	5,645	2,653	8,298	3,122	1,791	5,925	36,152
2002	(6,571)	(3,560)	(10,131)	(5,378)	(2,041)	(7,418)	(51,106)

() = provisional figures

7. Introduction of the UPOV system of plant variety protection often results in immediate benefits for a State. In particular, the protection offered encourages foreign breeders to make new varieties available to the farmers, growers and plant producers in that State and thereby to allow the latter to increase their productivity and competitiveness. Furthermore, the breeder's exemption also allows these varieties to be used by local breeders to improve their own breeding programs (Figure 2).

Figure 2: Applications of Non-Residents for Plant Breeders' Rights: Selected Countries in Latin America.



8. A comparable effect to the one in Latin American countries can be observed in other countries e.g. those in transition to a market economy (Figure 3) and various other countries and regions of the world (Figure 4). The immediacy and scale of the impact will depend on factors such as the number of species for which protection is offered and the level of breeding activity which exists in the country.

Figure 3

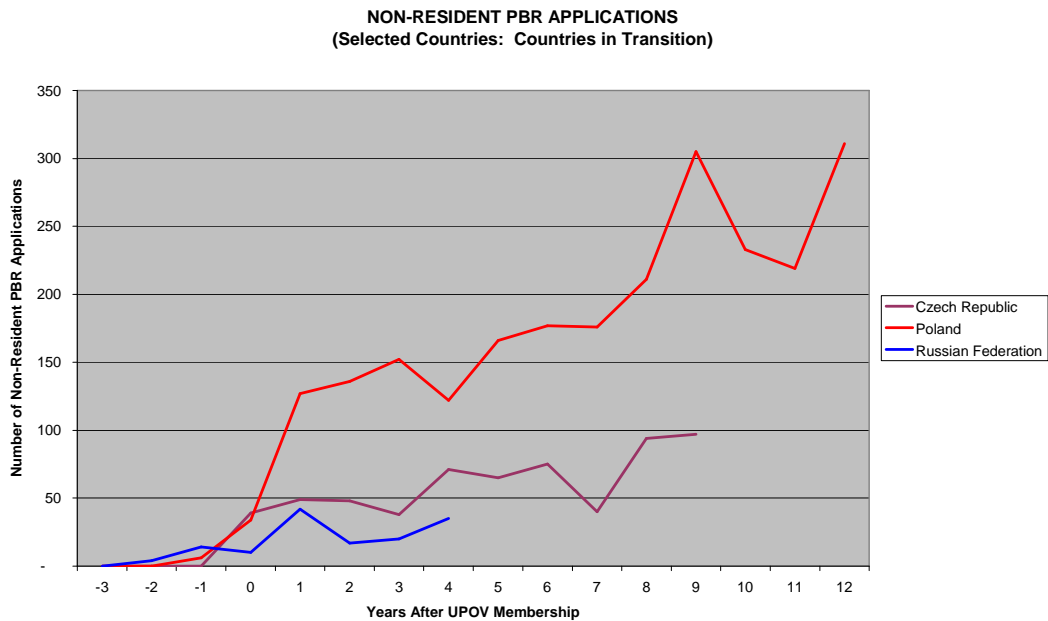
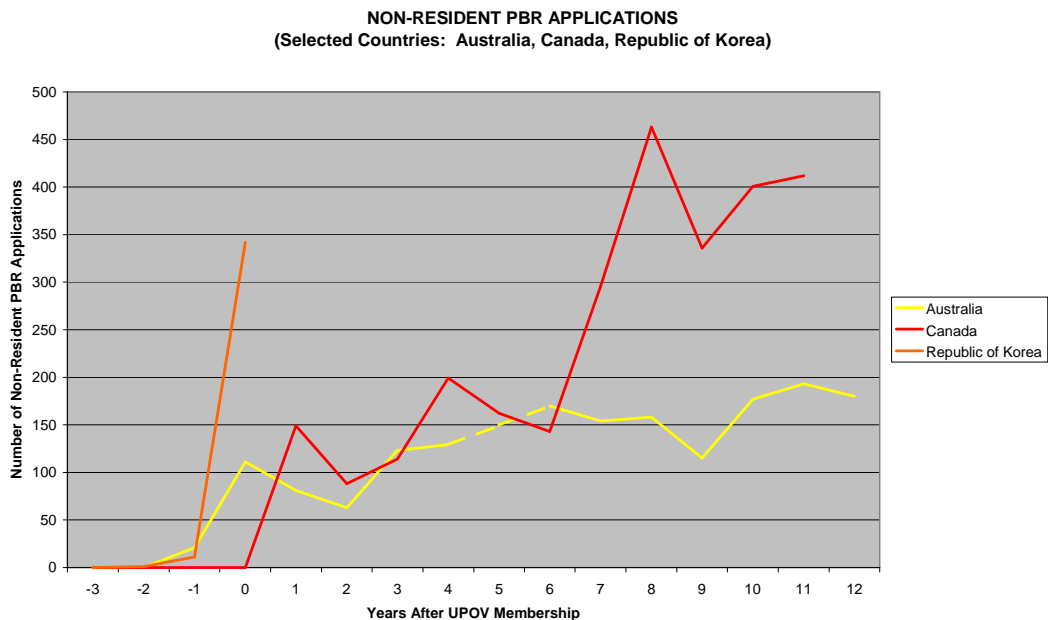


Figure 4



9. Figures 5, 6 and 7 use statistics from the countries featured in Figures 1 to 3, to show that, regardless of the immediacy and scale of the initial impact, the long-term steady growth

in the number of titles of protection in force, reflecting the development of new varieties of plants, is a common benefit.

Figure 5

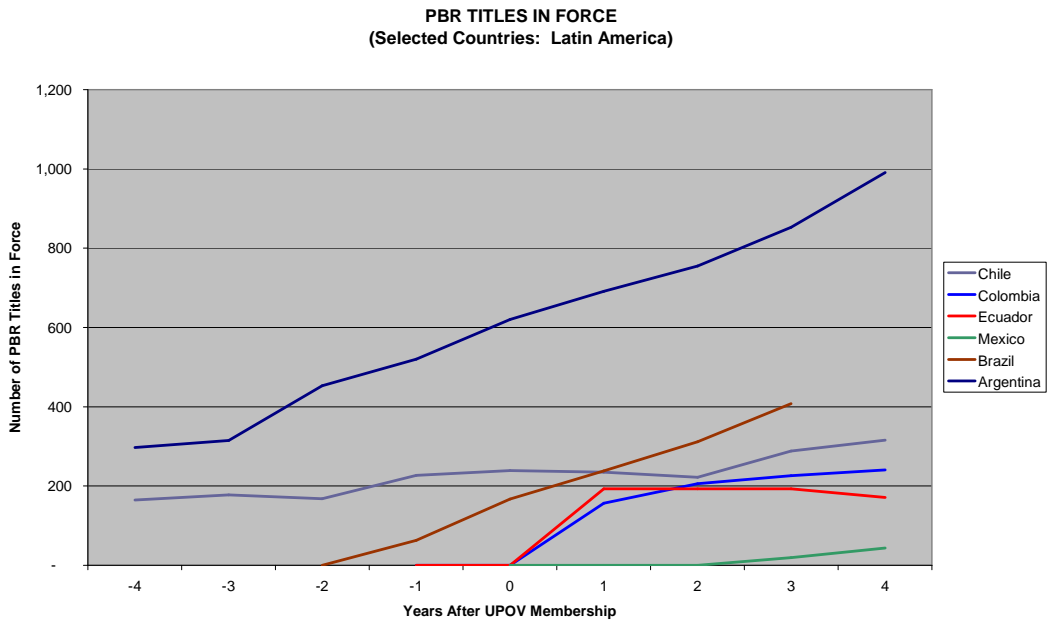


Figure 6

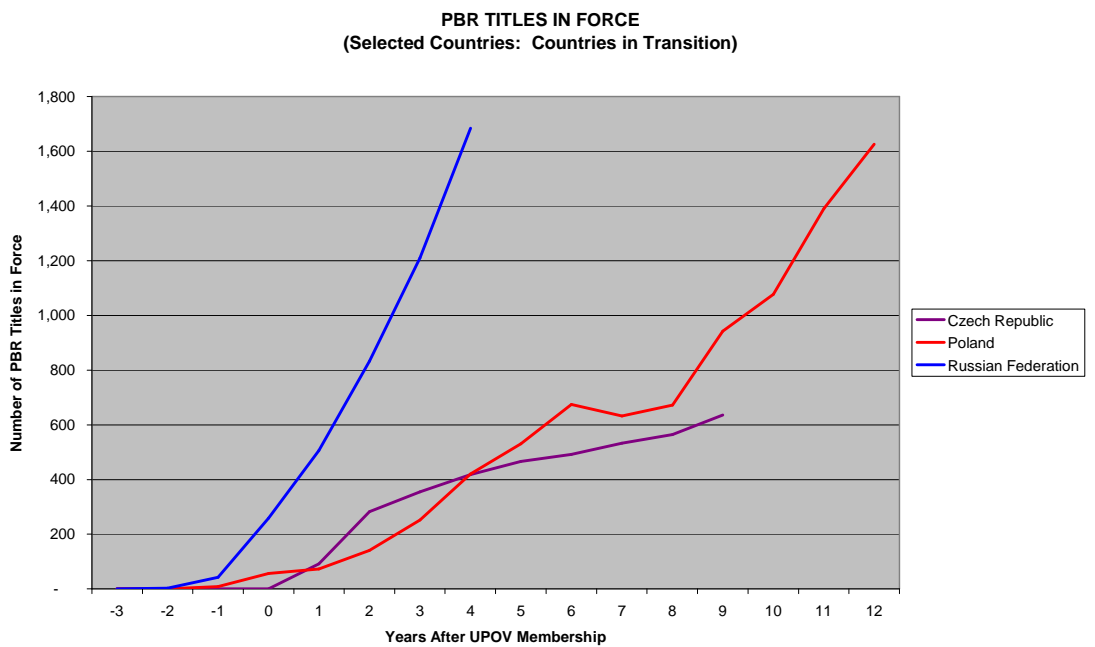
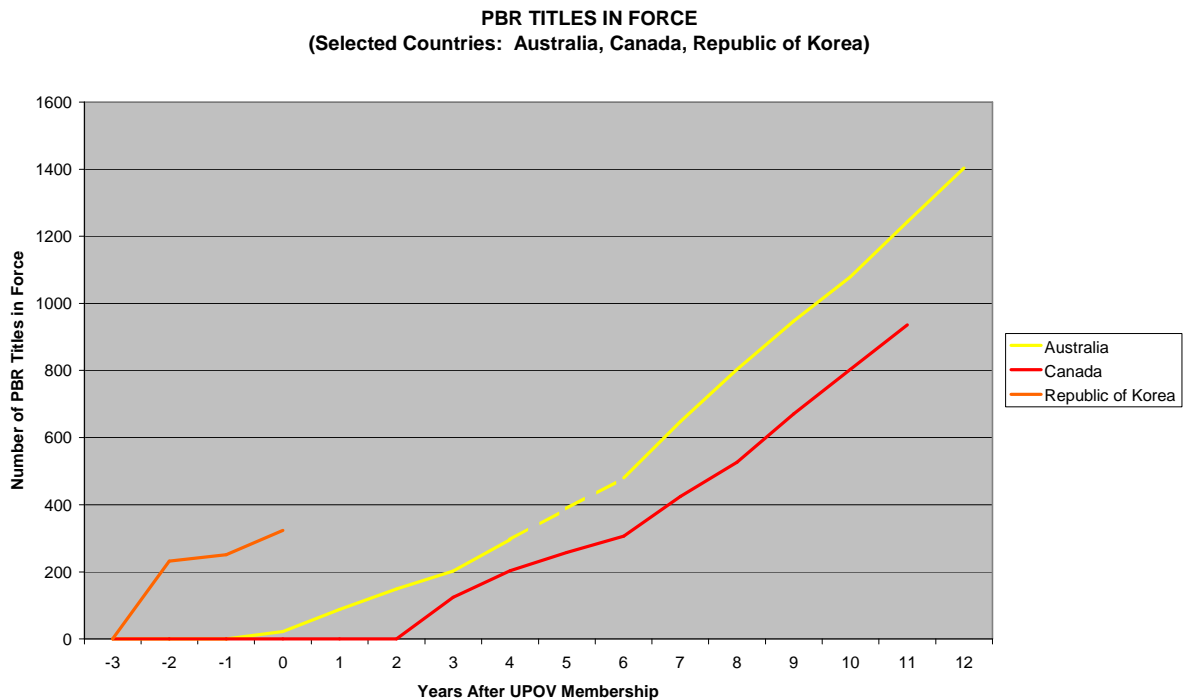


Figure 7



10. UPOV has established a study group which is examining the impact of plant breeders' rights in selected countries, in more detail. An intermediate report on its work will be provided later during this Symposium.

III. BASIC FEATURES OF THE UPOV CONVENTION

Conditions for Protection and Rights Granted

11. The UPOV Convention provides for an effective *sui generis* system of plant variety protection. It is particularly adapted to the features of plant breeding and to the requirements of the plant breeders and beneficiaries of new plant varieties, particularly, farmers, growers and producers. The benefits of the UPOV system include:

- (a) implementation on a national or regional level does not require the setting up of complex structures;
- (b) examination procedures which are harmonized and well-defined;
- (c) harmonized application procedures which are straightforward for applicants without legal experience.

New members benefit immediately from 40 years of experience acquired within UPOV. Thus, effectiveness is enhanced and cost of protection is kept low.

12. The basic features have remained essentially unchanged since the Convention was established in 1961. Based on the 1991 Act of the Convention, they may be summarized as follows:

- A natural or legal person who has bred or discovered and developed a variety may apply for a breeder's right in respect of this variety;
- Provided that the variety is designated by a suitable denomination and that the applicant complies with the formal requirements and pays the fees, a breeder's right shall be granted by the relevant authority after it has been assessed that the variety is:
 - novel (commercially new);
 - clearly distinguishable from any other variety of common knowledge;
 - sufficiently uniform and stable in its relevant characteristics.
- A breeder's right, in respect of a protected variety and certain other varieties, implies that, for a fixed period of time, propagation of these varieties and certain related acts require the authorization of the breeder.¹
- The UPOV Convention stipulates that the breeder's right shall be independent of any measure regulating the commerce of material of the protected variety.

13. The UPOV system of plant variety protection is characterized by certain exceptions which provide a balance between the exclusive right granted to a breeder and provisions to ensure that the overall benefit is maximized.

Compulsory Exceptions

14. The breeder's right does not extend to

- acts done privately and for non-commercial purposes;
- acts done for experimental purposes; and
- acts done for the purpose of breeding other varieties and for the purpose of exploiting these new varieties provided the new variety is not a variety essentially derived from another protected variety (the initial variety). The exploitation of essentially derived varieties requires the authorization of the breeder of the initial variety.

¹ Article 14(1)(a) of the 1991 Act of the UPOV Convention specifies "... the following acts ... in respect of the propagating material of the protected variety shall require the authorization of the breeder:

- (i) production or reproduction (multiplication),
- (ii) conditioning for the purpose of propagation,
- (iii) offering for sale,
- (iv) selling or other marketing,
- (v) exporting,
- (vi) importing,
- (vii) stocking for any of the purposes mentioned in (i) to (vi), above."

Under certain conditions, these acts are also covered in respect of harvested material of the protected varieties (Article 14(2)).

The Breeder's Exemption

15. The latter exception of “acts done for the purpose of breeding other varieties”, is a fundamental element of the UPOV system of plant variety protection and is known as the “breeder’s exemption.” It recognizes that real progress in breeding—which must be the goal of intellectual property rights in this field—relies on access to the latest improvements and new variation. Access is needed to all breeding materials in the form of modern varieties, as well as landraces and wild species, to achieve the greatest progress and is only possible if protected varieties are available for breeding.

16. The breeder’s exemption optimizes variety improvement by ensuring that germplasm sources remain accessible to the whole community of breeders. However, it also helps to ensure that the genetic basis for plant improvement is broadened and is actively conserved, thereby ensuring an overall approach to plant breeding which is sustainable and productive in the long term. In short, it is an essential aspect of an effective system of plant variety protection that has the aim of encouraging the development of new varieties of plants, for the benefit of society.

17. The breeder’s exemption is of particular relevance for small and medium-sized enterprises and means that barriers to entry into plant breeding are relatively low. This is important since we have seen that in the first instance, after the introduction of the UPOV system on a national level, there is a strong influx of foreign varieties. Local breeders may build on the value of foreign-bred varieties, and produce locally adapted varieties which are an improvement on both foreign-bred and existing local varieties.

18. The Food and Agriculture Organization of the United Nations (FAO), at its 31st Conference, on November 3, 2001, adopted the International Treaty on Plant Genetic Resources for Food and Agriculture. This Treaty (Article 13.2. (d)(ii)) recognizes the concept of the breeder’s exemption, in that breeders are excepted from financial benefit-sharing whenever their products are “available without restriction to others for further research and breeding ...”.

Subsistence Farmers

19. In addition to the breeder’s exemption and the research exemption, the UPOV Convention contains another compulsory exception to the breeder’s right whereby the breeder’s right does not extend to acts done privately and for non-commercial purposes. Therefore, activities of subsistence farmers, where these constitute acts done privately and for non-commercial purposes, are excluded from the scope of the breeder’s right and such farmers freely benefit from the availability of protected new varieties.

Optional Exception: Farm-Saved Seed

20. The provision on “farm-saved seed” (also known as the “farmer’s privilege”) is an optional mechanism provided by the UPOV Convention, under which UPOV members may permit farmers, on their own farms, to use part of their harvest of a protected variety for the planting of a further crop. Under this provision, members of UPOV are able to adopt solutions, which are specifically adapted to their agricultural circumstances. However, this provision is subject to reasonable limits and requires that the legitimate interests of the breeder are safeguarded, to ensure there is a continued incentive for the development of new varieties of plants, for the

benefit of society. For example, certain members of UPOV only apply the provision on farm-saved seed to certain species and limit its application using criteria such as the size of the farmer's holding or the level of production. Such measures have the benefit of allowing selected farmers to maximize the benefit of new varieties in a way which does not jeopardize the incentive for breeders to continue the development of new varieties.

Essentially Derived Varieties (EDV): Facilitating Co-existence of Breeders' Rights and Patents

21. The advent of genetic engineering required action when the UPOV Convention was amended in 1991. Whilst, using classical breeding techniques, it takes many years to breed new varieties of most species, genetic engineering offered the prospect of modifying varieties of most species in the laboratory in a matter of months by adding one or more genes. Provided the new varieties were clearly distinguishable from the initial variety, they could, under the terms of the 1978 Act, be protected with no recognition of the contribution of the breeder of the initial variety to the end result. The situation was in contrast to the protection offered by the patent system where the gene in question was the object of patent protection. Thus, if the breeder of the initial variety had wished to add the patented gene to his initial variety to produce a new variety, it appeared that the exploitation of the new variety would fall within the claims of the patent.

22. This situation presented a challenge for policy-makers, who knew that the kinds of improvements generated by classical plant breeding were frequently the result of numerous genes interacting in complex ways, while the kinds of improvements achieved by genetic engineering were typically based on one or a few genes. To optimize plant improvement and encourage sustainable plant breeding development, it was necessary to tailor the UPOV intellectual property system in a way which encouraged both types of activity.

23. The outcome of the ensuing policy debate was the inclusion, in the 1991 Act, of the concept of the essentially derived variety. The essence of this concept is that the scope of the breeder's right for a variety extends to any varieties which are essentially derived from it. If a variety is essentially derived from another variety (the initial variety), for example by inserting a patented genetic element through genetic engineering, it can still be protected if it is new, distinct, uniform and stable, and has a suitable denomination, but for so long as the initial variety remains protected, the essentially derived variety may not be exploited without the authorization of the owner of the initial variety. In this respect, the balance between the plant variety protection system and the patent system is redressed and a new framework is provided within which all parties concerned with plant breeding are encouraged to cooperate.

24. Having stated that the EDV concept establishes a more equal balance between the systems, it is important to note that there is still a significant and important difference between the EDV provision in the UPOV system and the scope of protection conferred by a patent. The EDV provision does *not* prevent the breeding of new Variety B (the essentially derived variety); it only requires that the authorization of the owner of Variety A (the initial variety) is obtained to allow the exploitation of Variety B. This means that the essence of the breeder's exemption is retained, i.e. access for breeding is maintained. If the new Variety B represents a significant improvement over other varieties, it is very likely that the owner of Variety A and the patent holder of the genetic element contained in Variety B will come to a mutually beneficial agreement for exploitation of Variety B.

25. The patent system, however, may require that the permission of the holder of the patent on the genetic element is obtained *before any breeding work can begin*. In such circumstances, it might be more difficult for agreement to be reached between the variety owner and patent holder because the value of the end variety cannot be reliably estimated.

26. In conclusion, it is important to recognize that the essential element of the breeder's exemption, which allows the breeding of new varieties of plants using protected varieties, is not affected by the EDV concept and, thus, the introduction of the EDV concept maintains the access to all varieties for breeding. However, it does provide a mechanism to ensure a suitable reward for plant breeders.

The ability to exercise the breeder's exemption in the case of varieties containing patented inventions

27. The situation outlined relates to a situation where the starting point is a patent holder with a genetic element and a variety owner with a protected variety. It is clear that another situation will arise where there is a protected variety which contains a patented invention—let us say a genetic element for the purpose of discussion. The purpose of the patent is to protect the developer of the genetic element, and the purpose of the plant breeder's right is to protect the developer of the unique combination of plant germplasm forming the variety. However, in certain circumstances, a lack of a similar provision to be breeder's exemption in the patent system might, indirectly, constrain the exercise of this exemption for the protected variety. Later, during the Symposium, we shall hear about attempts to cope with this situation.

IV. Conclusion

28. Data from countries where a UPOV system of plant variety protection has been introduced clearly demonstrate the positive impact for those countries in the form of the introduction of new varieties, which are made available for the benefit of farmers, growers and producers. The key features of the UPOV Convention, including in particular the exceptions contained in the UPOV Convention, result in the opportunity for all stakeholders to benefit from the system in a way which maximizes overall benefit by facilitating wide access to new varieties, whilst enshrining the incentive for breeders to continue breeding new varieties. Furthermore, the provision of the breeder's exemption provides a particular mechanism to advance the development of new varieties of plants and has been a subject of particular interest concerning the mutual supportiveness of plant breeders' rights and patents. An important aspect of this Symposium will be to hear from industry, legislators and policy-makers how intellectual property rights are being used to fuel advances in plant breeding and any areas where further consideration might prove beneficial.

[End of document]