

## PLANT PROPERTY RIGHTS: A PERSPECTIVE FROM THE USA.

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The issue of Intellectual Property Rights is complex and often controversial. This is particularly the case regarding IPP in the field of plant breeding as evidenced by there being a diversity of IPP regimes according to country or region. The level of complexity is further increased because the effective level of IPP that is provided is dynamic. IPP laws may be static but the end-result of their application in the field of plant breeding changes due to advances in scientific knowledge and the use of new technological capabilities. Adding to this complexity are the contributions of ethical or religious beliefs, cultural history and traditions that collectively bear on consideration of whether certain types of IPP ought to be applied to the products of plant breeding.

Nevertheless, IPP is a critically important subject for any nation that seeks to harness resources from the private commercial sector to provide improved crop varieties to serve their farmers, consumers and industry. The effectiveness of an IPP regime determines, on a country by country basis, the amount of effort, finance, quality of skills, innovation, technology, and high-performing genetics that can be brought to bear by private sector plant breeders to serve a nation's agriculture.

IPP for plant varieties in the US has evolved amidst discussion and controversies. For example, historical attitudes in the US regarding IPP can be gauged by the absence in the 1840's of copyright law. As a result the novels of the English writer Charles Dickens were then widely pirated in the US. In 1859 the US patent commissioner argued that the US government should stop giving free seed to farmers. But then by 1896 there was little protest from farmers when the free-seed program was attacked as wasteful spending. Continued controversies surrounded moves towards enactment of a Plant Variety Protection law in the 1960s. More recently, technological advances have enabled patentable innovations in the fields of biotechnology and in plant breeding. Technologies and new breeding strategies have also caused PVP laws to be significantly changed. Ongoing changes in technologies and breeding strategies demonstrate that there should be further evolution of PVP type IPP for plant varieties in order to, at the very least, re-establish the level of germplasm protection that was originally envisioned.

The US provides a range of choices regarding IPP to the developer of improved plant varieties. These include trade secrets, PVP, utility patents, and seed-wrap licenses. In the US both genes and plant varieties can be eligible for utility patents. Utility patents granted in the US prohibit research that has a commercial purpose during the life of the patent unless authorized by the patent owner. In contrast, most countries do not allow patents on plant varieties per se and some are enacting breeder exemptions so that the presence of patented traits will not prevent further breeding with that variety. The United States might appear to offer the most effective IPP regime for plant varieties. This is generally the case, but not in all respects. For example, Europe provides more effective IPP than does the US for wheat varieties that are protected by Plant Variety Protection (PVP). Further change in the IPP environment of the US is therefore required.

The demands that will be made upon agriculture during the next 50 years to meet food, health, industrial and environmental needs for sustainable production are huge. More than ever, national health, economic and environmental security will be dependent upon making the most effective use of a broader array of genetic resources to further improve agricultural productivity. The IPP environment that a country provides directly affects the quantity and quality of resources that a commercial company can bring to bear to help meet the demands of that country's farmers, consumers and industrial processors. To be most effective for any nation's agriculture it is an important consideration that crop varieties will be developed in the country where they will be sown and harvested. Specifics of soil and climate together with farmer and consumer preferences mandate that the best fit of crop genetics to a nation's agriculture will usually come when new varieties are developed in that country. It is important, therefore, that nations provide an IPP environment that will attract the quantity and quality of resources from the private sector that will best serve that nation's agriculture. To be most effective that IPP must encourage development of improved germplasm through plant breeding and by using specific traits developed using biotechnology. Equitable protection needs to be provided to germplasm development and for the improvement of specific traits that are individually better characterized and genetically understood.