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**WIPO-UPOV SYMPOSIUM ON THE CO-EXISTENCE OF PATENTS
AND PLANT BREEDERS' RIGHTS IN THE PROMOTION OF
BIOTECHNOLOGICAL DEVELOPMENTS**

organized by
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and
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INTELLECTUAL PROPERTY FOR BREEDERS

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INTELLECTUAL PROPERTY FOR BREEDERS

INTRODUCTION

The point of view which I will describe here is not that of an intellectual property specialist in the plant field, as would be that of a legal expert of an international seed company and a director of one of the bodies responsible, at the national or international level, for managing the assignment of the rights linked to the creation of varieties or biotechnology invention.

My point of view will be that of an experienced user of the Plant Variety Certificate (PVC) and, in more recent times, of the patent. I will adopt the stance of a rights holder but also a licensee so as to attempt, on the basis of the merits and shortcomings of the two types of intellectual property available, to determine a management strategy for a company, the principal task of which is to create varieties rather than develop biotechnology.

I should also point out that intellectual property discussions and, to a greater extent, the development of a relevant strategy, are a relatively recent occurrence among traditional breeders. This is the result of the offer made to seed growers, from the 1990s onwards, to gain access by means of licenses to patented biotechnology inventions.

Thus far, without getting caught up in excessive legal discussions European breeders have operated within an appropriate practical framework provided by UPOV Convention in its different Acts, since the 1961 Convention up to the 1991 Act which, moreover, is still not in force in several European countries including France.

THE PRACTICE OF THE PLANT VARIETY CERTIFICATE (PVC)

Since 1961, breeders from countries which are UPOV members have been able to carry out their work to improve plants within a simple legal framework with which they are familiar; the framework has undoubtedly contributed to the progress made in agriculture, as shown by the International Seed Federation (ISF) in its recent publication *Seed for Mankind*.

Who would have thought that considerable progress could have been made in Europe in terms of productivity, resistance to parasites and hardiness, if private and also public breeding had been unable to enjoy the benefits offered by the PVC?

THE ADVANTAGES OF THE PVC

- The research exception

Free access to protected varieties as an initial source of variation appears to be the major advantage of the UPOV protection system for breeders. It allows all concerned to rely on the most recent innovation in order to try and do better. The research exception also helps to increase the efficiency of the programs designed to improve plants.

To demonstrate this, it is sufficient to consider the origins of the varieties of Wheat most commonly cultivated in France at the present time.

Of the 16 lines forming part of the genealogy of the eight most widespread varieties, 11 are protected varieties and half of them do not belong to the breeder who has cross-bred them.

Furthermore, the protected line appears, on average, ten years after its registration as the parent of a new variety, i.e. a period which conforms to the duration of a conventional breeding cycle. This period is of course shortened, by around two to four years, when the owner of the original variety and that of the new variety are one and the same.

The research exception therefore confers a legitimate advantage on the creator, while leaving all concerned with the opportunity to innovate on the basis of the most recent and most interesting genetic material.

- Simplicity

Breeders prefer to be in their nurseries or testing grounds rather than filling in forms, even the electronic versions! One of the other undeniable merits of the PVC is therefore its simplicity.

For example, the formalities required by the Community Plant Varieties Office (CPVO) for a straw cereal variety are limited to an eight-page protection application, a six-page technical questionnaire and a single-page denomination proposal, and each form is user-friendly.

- Cost

The cost of the PVC is reasonable. Within the CPVO, a 1000 Euro examination fee is added to a 900 Euro application fee for a cereal variety.

Subsequently, the annual fee will not exceed 1000 Euros, which is reasonable for a variety disseminated in several European Union countries.

This protection system therefore has little weight in research budgets and, in any case, less than the tests for registration in national catalogs.

For most breeders, the direct cost of protection and registration does not exceed two per cent of research expenditure.

THE CONSTRAINTS OF THE PVC

- Farm seeds

Until the 1991 Act of the UPOV Convention, the legal framework provided by the PVC and most national laws did not allow the case of farm seeds to be dealt with in a realistic manner, representing as it does 30 to 80 per cent of seed use in many major species and according to different countries.

A right cannot be considered perfect if its enforcement is made impossible by common usage and if the authority responsible for its application refuses to impose it.

In that regard, the optional exception provided for in Article 15(2) of the 1991 Act provides a legal framework which enables realistic solutions to be found in each country, allowing farm seed users to contribute to research funding, apparently contrary to the case of the patent.

- Reference collections

The fact that a considerable number of varieties are the subject of applications for protection raises obvious practical problems as to the judgment of the distinction and the maintenance of reference collections.

Furthermore, breeders remain attached to the study of phenotypic characteristics and are somewhat reluctant to use markers on a systematic basis.

Developments in the area should, however, be accepted so as to maintain the cost of protection at the reasonable level I have indicated above.

- Essential derivation

The essential derivation concept represents undeniable progress provided by the 1991 Act since it allows technological developments to be taken into account in the field of genetic engineering but also reduces the risk of plagiarism.

However, it obliges the breeder to identify his own genetic material by using dozens, or even hundreds, of markers, thereby generating substantial new costs.

PATENT PRACTICE

The conventional breeder acts essentially as a licensee for technologies devised by others who may also be competitors in the trade of creating new varieties.

THE SEARCH FOR LICENSES

Few breeders, apart from the main multinational companies, are in a position to organize effective biotechnology supervision, while the number of patents that can be used in plant variety models is considerable.

To deal with this situation, the main French breeders have set up a body called VIGIBIO, the aim of which is to finance the creation and operation of a databank in the field of biotechnologies.

This tool allows all concerned to adopt an initial approach to the scientific and legal interest of these patents for the purposes of directing, improving and using their breeding programs.

It should be added that the conclusion of contracts is made difficult, owing to the absence of a "patent culture" among most breeders, linked to the fact that no internal legal service exists.

In practice, such contracts prove to be very restrictive. Since one of their strongest clauses is secrecy, I am unable to illustrate my comments with specific examples.

Since this is the case in general terms, I will cite a number of the most frequently encountered difficulties.

- The multiple nature of the parties

In addition to the patent holder, there is the breeder of the gene pool, who serves as a support for the breeder and proves to be a competitor for the licensee!

- The obligation to provide information

The biological material transfer agreement which is implemented from the experimental phase onwards contains an obligation to provide detailed information on the work undertaken, thereby generating the risk of disclosing the breeding strategy.

- Exclusivity

Where it covers a whole research area, this request limits the capacity to conclude contracts elsewhere. It also makes it difficult to maintain previous cooperation, in particular with public research where there is a strong tradition of publishing in scientific journals.

- Liability

The licensee is liable for any damage or risk stemming from the use of the transferred material, while the patent holder strongly limits his own guarantee.

In most cases, an imbalance therefore exists between the parties, to the benefit of the biotechnology patent holder.

THE FILING OF PATENTS

Even in companies whose first task is to create improved varieties, biotechnologies now play a significant role, in particular in the support provided for breeding programs.

15 per cent of research expenditure is, on average, devoted to such programs.

Moreover, collective forms of labor, such as GABI in Germany or GENOPLANTE in France, help to increase this share.

In this context, discoveries are made which enter the field of patentability. Many breeders therefore use the services of specialized offices in order to conduct the procedure for obtaining the patent and discover that the complexity of the cases, costs and deadlines (several years in cases where there is opposition or an appeal) can in no way be compared with their experience of intellectual property based on the PVC.

Thus, it is estimated that the cost of intellectual property, its creation and protection can reach ten per cent of the sums devoted to the corresponding research.

WHAT INTELLECTUAL PROPERTY STRATEGY FOR BREEDERS?

From a practical point of view, I think that breeders should resolutely choose UPOV protection for the varieties they create.

In the 1991 Act, this system guarantees the promotion of innovation while proving to be suitable for a large variety of development of national seed networks.

We should, however, agree to devote greater resources to the protection of our varieties and our germ plasm, *inter alia*, by taking account of the concept of essential derivation.

Since we have the potential to use biotechnology inventions much more than we generate them, breeders should, at the same time, either individually or collectively, undertake scientific and legal monitoring allowing them to negotiate, at the right time and in the best possible conditions (in particular as regards the enhancement of their gene pool), access to technologies of interest for the programs.

From a general point of view, I consider that the balance in relations between the two protection systems, as it is introduced in the document *ISF view on intellectual property*, adopted at the Chicago General Assembly this year, represents an initial approach to finding an equitable and realistic solution.

However, the use, as a source of initial variation, of a protected variety containing a patented biotechnology invention is likely to be one possibility that breeders will not use. The time devoted to eliminating the patented invention will limit the interest of the gene pool which surrounds it. In that sense, a “marking” strategy for a patent in any range of varieties would, in practice, lead to access thereto being prohibited for subsequent breeding purposes.

GENEALOGY AND DATE OF REGISTRATION
OF THE MAIN VARIETIES OF SOFT WHEAT
IN FRANCE

APACHE (1997)	AXIAL (1989) x CAMP REMY (1980)
CAPHORN (2000)	RIALTO (1992) x BEAUFORT (1993)
CHARGER (1996)	FRESCO (1988) x line
ISENGRAIN (1996)	APOLLO (1984) x SOISSONS (1988)
ORVANTIS (1999)	THESEE (1984) x line
SHANGO (1994)	FRESCO (1988) x line
SOISSONS (1988)	IENA (1980) x line
SPONSOR (1994)	MERCIA (1986) x line

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