

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

**Geneva, October 24, 2003**

**PANEL DISCUSSION**

Mr. Cédric CABANNE, Head of Agricultural Campaign, Friends of the Earth, Montreuil, France

I would like to try and answer a question asked by one of your speakers. This question was “should we wait 70 years for biotechnology applications to be disseminated in developing countries?” For my part, I hope that, yes! Because I think that at least agricultural GMO applications are not socially and environmentally acceptable. In fact, contrary to what another of your speakers said, GMOs are not developed to meet needs such as food security. The truth is that food security is a matter of adequate policies which should maintain diversified agricultural systems and guarantee sustainable revenues to farmers. As we can see in Argentina and China, GMO technologies favor monocultures and favor soil-erosion. Furthermore, in terms of R&D, it is true that the public and private sectors should work together, but we should not forget that the public sector R&D are principally designed to solve agronomic problems of farmers and not commercial problems of industrialists. Finally, I would like to say that, for my association, GMOs represent considerable stakes, and proponents of GMOs are yet to respond to social and environmental problems such as resistance to salinity and drought. I haven’t heard anyone talk about the stage they were in research on these subjects. It is true that applications such as resistance to herbicides seems more delicate. Finally, I would like to underline that biotechnology should not serve as a pretext to limit farmer’s access to biodiversity through intellectual property rights.

Mr. Alexander OCHEM, Research Assistant, Molecular Biology, International Center for Genetic Engineering and Biotechnology, Trieste, Italy (Speaker)

I would like to point out that biotechnology, genetic engineering, does nothing different from what nature does by itself. What genetic engineering basically does is that it speeds up this natural process. Because when you transfer genes between or among organisms, you do not create genes, you merely transfer, and genetic engineering by definition does this more specifically. Traditional plant breeding takes several years, decades, to generate a new variety. Genetic engineering accomplishes it in a much shorter time and the selection is much more specific. There has been a lot of argument about creating allergies, but it has no scientific background. You do not create them because you do not create the genes. Due to its specificity and accuracy, genetic engineering may actually be employed to remove known allergens rather than create new ones. You can talk about interactions between genes which you cannot foresee, but also you cannot foresee the cross pollination that is effected already by nature itself. If we think that the population of the world is increasing astronomically and then if you think that there are people who really live in Africa with less than 1%, (less than 1 USD per day) taking account of the definition here that USD10,000 is the limit for poverty, then what about those people who live with less than USD1000. It becomes dramatic. I really do not see the point you are raising.

Mrs. Qinfang WANG, Deputy Director, Research Management Division, Biotechnology Research Institute, Chinese Academy of Agricultural Sciences, Beijing (Speaker)

Concerning the question Mr. Cabanne has raised, maybe I can answer to a certain stage. For the GM cotton crops in China we do not create only one variety, we transfer our gene into all the major varieties in different major cotton production provinces. So it is not a monoculture at all. In terms of the environmental issues, the second generation of GM crops we are emphasizing more on stress tolerance such as salinity, cold and drought tolerance, but compared with the first generation of GM crop, the so-called input traits GM crop, it is not ready to commercialize yet, but we are working on this stress tolerant GM and putting more investment as compared to the first generation of GM crops. In terms of the biosafety issue he raised, compared with conventional varieties, I think that GM crop varieties are much safer because the GM crop varieties have to pass through the Biosafety Assessment, which includes environment safety and food safety. We have national guidelines for the biosafety assessment of agricultural genetically modified organisms, also a National Biosafety Committee and the Committee members are from all related research areas, such as biotechnology, environment issues and also public health.

Mr. Bernard LE BUANEC, Secretary General, International Seed Federation (ISF), Nyon, Switzerland (Speaker)

I would like to make two comments. The first one on an inaccuracy said by Mr. Cabanne saying that transgenic crops are increasing erosion. All the studies I have seen show the contrary, in particular as regards herbicide resistance allowing the no-till agriculture and decreasing drastically erosion in several parts of the world. So in fact that is simply inaccurate. The second comment I would like to make is that I feel there is a slight inconsistency saying he is hoping that it will take more than 70 years to have GM crops in developing countries and then asking the question as to what are the traits you are working on that could be useful for developing countries. It should be said that you have within IRRI, drought-resistant varieties that are coming very soon. In India, you have salt-tolerant rice varieties in the Swaminathan Foundation very soon also to come and I hope that those very useful varieties will be used before 70 years in those countries.

Mr. Mark CANTLEY, Advisor, Directorate for Biotechnology, Agriculture and Food, European Commission, Brussels

I would like to put a question to Ms. Wai from IRRI. With the germplasm collections, you signed an agreement with the Food and Agriculture Organization of the United Nations (FAO) in 1994, in which you pointed out that the germplasm in your collections was public domain and there could be no intellectual property taken on the accessions or on information derived therefrom. Does that mean that if a company takes one of your accessions, characterizes and develops a useful invention based on some identified genes, you would object to them taking out a patent of such an invention and what would you do about it?

Ms. Thanda WAI, Intellectual Property Specialist, International Rice Research Institute (IRRI), Laguna, Philippines (Speaker)

If it is FAO designated, then I think the terms are clear, you cannot patent it. But if it is an IRRI-developed material, we are not controlling derivatives.

Mrs. Carmen Amelia M. GIANNI, Director of Legal Affairs, National Secretariat of Agriculture, Livestock, Fisheries and Food, Ministry of Production, Buenos Aires

I would like, Chairman, to hear a reply to the question I raised this morning, because it might be motive for discussion. I would like to know whether a benefit-distribution system and transfer of technology system, of course while protecting intellectual property rights under both systems, that is the patent system or the UPOV system with its two exceptions, either the exception for the breeder or the exception for the farmer, which is more equitable a system to achieve those objectives - benefit-distribution, national development and improved food supply. I have no question that the UPOV system, through its benefits, as our speaker Mr. Domingo has said, in the case of Argentina to have recourse to intellectual property systems implemented by UPOV, has been an important element for the development of agriculture and of farmers. I would like to hear the opinion of the Chair as to which is more effective?

Mr. Stephen SMITH, Germplasm Security Coordinator, Pioneer Hi-Bred International Inc., Johnston, United States of America (Speaker)

I would like some clarification. Are you asking which system is more effective or which system is more equitable?

Mrs. Carmen Amelia M. GIANNI, Director of Legal Affairs, National Secretariat of Agriculture, Livestock, Fisheries and Food, Ministry of Production, Buenos Aires

Both of those questions. Which of the two systems is more effective, but taking account not only of the right holders of intellectual property rights, but also the users of technology and phytosanitary users, both agricultural producers or society as a whole, because the objective of intellectual property rights, even in TRIPS, is the transfer of technologies and development of agriculture in favor of the world population.

Mr. Stephen SMITH, Germplasm Security Coordinator, Pioneer Hi-Bred International Inc., Johnston, United States of America (Speaker)

Well, I will define effective in terms of the system that encourages sufficient investments in innovation and risk-taking to be able to create new improved products that meet the needs of farmers. I was talking about a problem that I saw with the current system of UPOV, given the fact there have been rapid advances in technologies that allow much quicker access to existing varieties. There is a balance in UPOV that was desired to be struck between access to germplasm and encourages to take those risks and invest money, financial resources and peoples' time in working with those resources. In my mind, that balance has changed because of the technology advances uses proteomics, genomics, dyhafloids, that are available particularly to larger companies, but not so much at the moment to smaller medium-sized companies, that allow very rapid access and generation of new varieties from existing varieties. Therefore, in my mind, that means there is now a problem with free and immediate access to a commercial variety for further breeding. So when I am talking about a change in the breeder's exemption, I am thinking of a suspension for an initial period of that free access that would reestablish that balance and allow more incentives to make those investments in risk taking. At the end of the protection period, that variety is in the public domain. So that it is a variety that has been created because of the research investments, and then it is in the

public domain. In addition, when there are restrictions on immediate use of a newly created variety under the International Treaty on Plant Genetic Resources for Food and Agriculture (International Treaty), if materials have been used from the International Treaty to help develop those materials, then royalty flows go back into the system, so that is helping to provide benefits back into the system of conservation of plant genetic resources, into the global plan of action. So I think a system that encourages investment and risk-taking and innovation, that also provides some royalty flows back into the conservation of genetic resources and into the global plan of action is, in fact, the most effective and the most equitable means of encouraging a generation of new varieties for farmers.

Mr. Bernard LE BUANEC, Secretary General, International Seed Federation (ISF), Nyon, Switzerland (Speaker)

If you agree, I will also try to give part of the answer to that very important question raised by Mrs. Gianni. My answer would be that, in fact, it is probably not possible to define what is the best system at international level. The system has to take into account the technical development of a country, the culture of that country, the socio-economic situation of that country. So you cannot say what is the best system for all the countries in the world. In some countries, one system is probably the best and in another country, it will probably be another system. Obviously, you cannot treat the small farmers of the antiplano in Bolivia in the same way as the farmers in the Sierra. You cannot treat the small farmers in Africa as the large farmers in Europe, and the small farmers in Europe as the large farmers in Europe. So, it is up to each country, based on the international instruments that exist, to develop for its own needs, the most efficient system.

Mr. Jeff KUSHAN, Attorney, Sidley, Austin, Brown & Wood, Washington, D.C. (Speaker)

I think the way the question was presented puts these two systems as a choice - either, or - and I think it is important to remember that, in most systems, there is a complimentary combination of two different systems. The patent system has a higher threshold, as I tried to make clear in my talk. It is much higher than you are going to have for obtaining protection under plant variety systems. With that system, also comes a different public benefit. I have heard many debates about the patent system and its pros and cons, but one thing we always forget is that the patent system itself is a very effective system of technology transfer, because it requires immediate publication at 18 months of the application. This is a robust publication, all the technical details of the invention which are flowing immediately into the public for use. That information is how we get advances in technology. The restrictions through the patent on use of the technology in territory of the patent obviously play the economic benefit to the innovator, but there is a significant amount of technology transfer that is part of the equation of the patent system. Just to very briefly summarize, the patent system complements the plant variety system in most environments because of the different activities that qualify for each type of instrument and the patent system itself is perhaps, if I were to rate the two systems, the more effective at promoting technology transfer, at least at the first instance of conveying a lot of technical information through the patent specification and the information you convey through that. I would like to challenge the premise that these are choices that are in conflict, but actually I see these systems working in a very complementary way, each within their own parameters.

Mrs. Karen LEE RATA, Senior Counsellor, Office of the Special Counsel, WIPO

I would like to add my observation to what Mr. Le Buanec, and perhaps what Jeff Kushan has also stated just now. I agree with Jeff's statement that these two systems are not contradictory and, specifically, if the question is rephrased as to which system may be better or more effective in protecting plant varieties, what they have said applies, but in addition we need to remember that these two systems have very different scopes. If I may just recall what Mr. Gerard has said, just by having certain characteristics in a given variety, which may not be protectable under plant variety protection due perhaps to even smaller steps than called for, if we can say it that way, they may be patentable. So there are certain things or steps that can be protected, perhaps incrementally, through patents on one's way to finding improved or different variety. Therefore, in my view, you would need to have both systems, perhaps so that you would be able to protect, in different stages of invention, to the point where you have a new variety. So, I would say again that you need both systems. However, you may want to focus on these two systems differently in your own countries, as Mr. Le Buanec said, depending on what you want to stress or focus and what your needs are, but it seems to me, it is quite clear that you would need both systems, in complementary ways, in each country.

Mr. Rolf Jördens, Vice Secretary-General, International Union for the Protection of New Varieties of Plants (UPOV), Geneva (Speaker)

The UPOV Convention has already tried to strike a balance and to facilitate co-existence of these two systems, for example, through the concept of essentially derived varieties (EDVs). Under the UPOV system, there is room to combine both principles, if this is useful and necessary for technological advancement and progress. However, the breeder's exemption is an invitation to the whole community of breeders, without additional cost and complications to easily use protected varieties in their breeding programs. This is a big advantage. It is relatively evident that the more imagination, the more inventiveness you involve in the process of breeding, the more rapid the process is.

Mr. Peter LANGE, Chairman of the Intellectual Property Committee of the European Seed Association (ESA)

I would like to fully support what Mr. Bernard Le Buanec has said. I really think it should be the choice of the member states to choose between different solutions and, in this respect, one sentence in the speech of Mr. Moufang was interesting. He said referring to the issue of availability of protection that European Law is in practical consequences not so different from national systems, such as systems of the United States of America or Australian, which allow the patentability of plant varieties. But in practical consequences, of course, there are a lot of differences in the scope of protection and we have to consider very carefully if we want to change anything in UPOV. And referring to this, I would like to insist, again, what was referred to already by Mr. Le Buanec, on the position of the International Seed Federation (ISF), which states that it is "strongly attached to the breeder's exemption" and, in line with this statement, this is also the position of the European Seed Association (ESA). We think that the breeder's exemption is really a cornerstone of the UPOV system and any suggestions which would put this cornerstone at risk should be very carefully considered - and that particularly for the following reasons: First, it would raise concerns, in particular in new member states. Second, it would render accession discussions with candidate UPOV member states more difficult. It would encourage countries to develop other *sui generis* systems than the UPOV system for the protection of plant varieties. It would render the UPOV system as

an effective *sui generis* system more vulnerable to attack in the discussions of Article 27.3(b) of the TRIPS Agreement. And last, but not least, it would impair the balance between the UPOV Convention and the International Treaty on Plant Genetic Resources for Food and Agriculture. I would like to ask you to have a look at the Website of ESA, where ESA will issue a statement on this very important and highly political question.

Mr. Huib GHIJSEN, Global Manager Germplasm Protection, Oilseeds Department, Bayer BioScience N.V., Gent

I would like to refer to a remark of Jeff Kushan about the patent requirements. His remark was that one of the requirements putting a threshold on patent granting and that was the inventive step, prevent that easy inventions come available. That is one of the main differences between plant breeders' rights which has a low threshold, so to speak, and the patent system. I have looked into this so-called requirement as applied by the examination of the Patent Office of the United States of America for the invention of plant varieties, so I am not speaking about biotech inventions or industrial inventions, but just the same varieties as used in the UPOV system, and also having applied through the utility patent system in the United States of America and I have come to the conclusion that, in fact, the requirements as applied are lower than the UPOV standards and that the scope of protection is much broader. And I think that that is the key of the problem we are facing at the moment. We are comparing two systems, the UPOV system and the utility patent system. The scope of protection and requirements in the UPOV system are very well balanced. I think the problem in the United States utility patent system is that it is not the case. I think that the discussion has to focus on that problem also.

Mr. Jeff KUSHAN, Attorney, Sidley, Austin, Brown & Wood, Washington, D.C. (Speaker)

When I speak of patent barriers compared between the utility patent system in the United States of America and the plant variety protection system, I do not think only in terms of obviousness. On the question of the requirement of obviousness, the narrower the claim, the less of a hurdle it is, but correspondingly, the patent confers a much narrower scope of protection. The other variable that we have seen much more prevalent in our examination experience has been the application of the written description requirement, the application of the utility requirement and I am speaking in terms of a lot of applications that we have worked on, the Patent Office, to my experience, has not been particularly generous on scope, which on the one hand makes it easier to get a patent issued, but it also makes the effect of that patent much narrower, and that, essentially, the balance that is built into the system. If you ask for broad protection, you are going to have a much higher burden in front of you to get that patent issued. I have seen studies done of US patents and it is almost like to take the example of a broad patent and you say how could that patent get out? It's not often a good example compared to the types of narrow claims that might get issued more readily. The individual nature of each of the patents in their claims tends to be the major factor you have to look at when you are evaluating how big that hurdle is. But, in principle, it is not just the obviousness requirement that is the additional burden relative to the UPOV system, it is the additional disclosure requirement. It is also more expensive, it is also more time consuming, although our PVP experience has not been speedy! There are a number of variables, as you have mentioned.

Mr. Huib GHIJSEN, Global Manager Germplasm Protection, Oilseeds Department, Bayer BioScience N.V., Gent, Belgium

Just some additional words. I have just mentioned the non-obviousness, but I also mean the other requirements such as industrial application and description that can be placed just by depositing a sample.

Mr. René ROYON, Secretary General, International Community of Breeders of Asexually Reproduced Ornamental and Fruit-Tree Varieties (CIOPORA), Bois de Font Merle, France

I would like to revert to the question asked by the delegate from Argentina. I believe that the answer cannot be given as long as we do not make a distinction as to the subject matter of protection. In biotechnological inventions, it is clear that you do not have a choice. The only possibility to protect is by a patent, because the patent will define the claim and through the claim the scope of the protection that you want to obtain. If the subject matter of protection is a variety, then we know that there are two courses possible, either patents or plant breeders' rights, and in that matter, you have to consider two viewpoints. The viewpoint from the breeder and the viewpoint from the user of new varieties. The viewpoint of the breeder will, of course, depend upon what kind of scope of rights he receives under each system. So far it is clear that under the 1978 Act of the UPOV Convention, the breeder does not receive an effective protection for many reasons that I will not develop here, but which are well-known to most of the people present here. Concerning the 1991 Act, the effectiveness has been improved, but it has certainly not gone as far as the broader patent protection, notably as far as the use of the variety is concerned. While use of a patented subject matter is protected under a product patent protection, use of a variety is not specified in the scope of the breeder's right defined by the 1991 Act of the UPOV Convention. So, we believe that concerning breeders, we still need an improvement of the 1991 Act of the UPOV Convention. Coming back to the users, I believe that licensing or obtaining a license, whether under a patent or under a breeder's right certificate, does not make much difference, although the scope of the right may have some influence. The main thing, however, is the control of the conditions for licensing, and I believe that all of the anti-trust laws or anti-competitive laws existing worldwide cover both licensing under patents and licensing under plant breeders' rights.

Mr. Gerard DOWNES, Researcher, Department of Politics and Public Administration, University of Limerick, Limerick

I would like to ask the panel how much flexibility do countries have in the implementation of the effective *sui generis* provision in Article 27.3(b) of the TRIPS Agreement. I am thinking in particular, of India, which implemented the Plant Variety Protection and Farmers' Rights Act of 2001. From my reading, I have ascertained that India's attempted legislation has provoked the ire of ISF and has not enamoured itself to UPOV. Could you enlighten me a little about how much flexibility countries have under the *sui generis* provision in 27.3(b)?

Mr. Adrian OTTEN, Director, Intellectual Property Division, World Trade Organization (WTO), Geneva (Speaker)

I do not know how much I can enlighten you, but I can attempt to respond. You are familiar of course with the language of Article 27.3(b) of the TRIPS Agreement, which talks about members protecting plant varieties by patents or by an effective *sui generis* system or a

combination of the two. Now, we have no authoritative further guidance as to what that means-jurisprudence or decisions of the members. This issue has not been the subject of any dispute settlement proceedings which might lead to rulings or findings which could at least provide some guidance as to how the appellate body or panels would understand it, nor has it been the subject of collective decisions of the World Trade Organization (WTO) members, and that is the only way in which authoritative interpretations can come about. As I mentioned this morning, this is one of the topics that is under discussion in the TRIPS Council in the context of the review of Article 27.3(b). I mentioned, I think, a non-exhaustive list of some points which have come up. There is a range of views amongst members. I mentioned the responses to the questionnaire and we have had responses from 37 members so far, mostly developed and transition economies, and a few developing countries, which actually gives a fairly consistent picture of what have been the practices of those members. But we have not gone further in studying systematically or in a comparative way the legislation of members to give effect to this requirement. So we do not have a body of information which would crystallize the different ways in which members have chosen to understand and implement this provision. I am afraid that that is as much as I can offer.

Mr. Bernard LE BUANEC, Secretary General, International Seed Federation (ISF), Nyon, Switzerland (Speaker)

As ISF was quoted, I think I have also to give some comments. Yes, ISF was not happy with the Law in India. Probably for two main reasons. The first reason is that we consider that that Law is not an effective system for protecting plant breeders' rights. There are several articles that are not, from our view, consistent with the 1978 Act of the UPOV Convention, but there is one major point and that is that there is the right for the farmer to sell seeds under another denomination. These two items are contrary to the UPOV Convention. First of all, they have the right to sell -this is not acceptable-and according to the Convention, when a variety has got a denomination, it has always to be sold under that denomination. So there are two huge breeches and if you have the right to sell farm-saved seeds, where is the efficiency of the protection? The second reason is that we consider that it is completely confusing to wish to organize in the same Act, very different goals, like farmers' rights, breeders' rights, benefit-sharing and so forth. Yesterday, the Council of UPOV has also adopted a paper indicating that it was probably not the best solution to try and have all the different problems regulated in one law, but it would be preferable to have different pieces of law. Those are the two main reasons, but obviously, the Indian Law is not an effective *sui generis* system for plant breeders' rights.

Mr. Rolf Jördens, Vice Secretary-General, International Union for the Protection of New Varieties of Plants (UPOV), Geneva (Speaker)

It is probably useful to explain the situation with the Indian Law in respect of UPOV. The Government of India has expressed the wish to have this Law examined by the Council of UPOV for conformity with the 1978 Act of the UPOV Convention in view of India's accession to UPOV. India wants to accede to the UPOV Convention. This examination has started, but is not yet finished. We are in contact with the Indian Government to clarify certain questions, but there is no position taken with regard to the conformity of this Law with the UPOV Convention to date.

Mr. Oscar DOMINGO, Director, Relmó, Buenos Aires (Speaker)

I see that we have an academic discussion on protection systems. But there is another system which is the real system. RR doesn't have any protection in Argentina and there is no company that has used the gene or registered varieties without the permission of the owner or the holder. I do not think that any company can afford to do that. They would have been just outlawed and I do not think they would have been able to stay in the market.

Mr. Anthony TAUBMAN, Acting Director and Head, Traditional Knowledge Division, Office of Legal and Organization Affairs and PCT System, WIPO

I would like to go back to the question of effectiveness and equity. I think the last intervention put a very important perspective before us. That is to say, effectiveness and equity are ultimately practical matters as well. It is a question, of course, of what is on the statutory books, what the laws look like. But equity also depends on what is actually delivered in practice. For me, at least, one of the insights of a number of the presentations today was that they highlighted some of the areas where effectiveness and equitable outcomes are also bound up with practice, and with the capacity and the skills that lead to equity in practice. I think, in as much as the patent system is concerned for example, there are two core issues: one is the nature of the right as granted and the process that leads to a decision to grant; and the other is the life of the granted patent in the market place, the way it is used, the way it is traded with the licensing and negotiation that surround it. In both cases, there are very important practical matters, as well as the theoretical and legal concepts that structure the pre-grant process. We have heard discussion about the need for the examination process to adhere to core patent principles, a need for patent processing to cleave, as far as possible, to the ideal that is expressed by patent criteria. Now we all know as a matter of inevitable practice, that no decision making process can be perfect in the patent area. No patent examiner is omniscient and indeed, when patents are tested in court, they are not infrequently found to be invalid because of the vastly greater universe of information that is made available during the litigation process. So, one practical matter is to maximize the possibility or likelihood that a patent, as actually granted, will indeed be valid, that it will approach, as far as possible, the ideal that is represented by the criteria of novelty, inventive step and utility. There are necessary practical steps to improve that situation. One includes, for example, a greater focus on improving the prior art base, in as much it is relevant to genetic resources and traditional knowledge and there are a number of practical initiatives underway in that regard. This has gone to the heart of some of the basic tools of the patent system - the International Patent Classification and the minimum documentation of the Patent Cooperation Treaty, by way of example. And looking also at the post-grant situation, for me at least, the most informative and insightful material came forward with the practical examination of how rights are actually used in the marketplace and what regulatory mechanisms are applied in the case that patent rights are misused in the marketplace. It was interesting, too, to see a certain degree of self-correction and mutual self-interest, if you like, where differing commercial players have a common interest in having their respective complementary technologies brought through successfully to the market, and the cooperation that that induced. So I think, Mr. Chair, some of the important insights that certainly I can take away from the discussions relate to the very practical aspects of actually delivering equity and actual effectiveness in achieving public policy outcomes, as against some of the theoretical debate.

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