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INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

GENEVA

ADMINISTRATIVE AND LEGAL COMMITTEE

Sixteenth Session
Geneva, November 14 and 15, 1985

APPLICATION OF THE UPOV CONVENTION TO BOTANICAL GENERA AND SPECIES

Document prepared by the Office of the Union

Introduction

1. Article 4 of the UPOV Convention provides that it "may be applied to all botanical genera and species" (paragraph (1)), and that "the member States of the Union undertake to adopt all measures necessary for the progressive application of the provisions of this Convention to the largest possible number of botanical genera and species" (paragraph (2)).

2. The history of UPOV has been punctuated by discussions on the steps that could be taken in order to implement the above provisions in the most effective way possible. The most recent took place at the fourteenth and fifteenth sessions of the Committee (see documents CAJ/XIV/3, CAJ/XIV/6, paragraphs 23 to 26, CAJ/XV/2 and CAJ/XV/8, paragraphs 13 to 19). They have resulted in the writing of a draft of UPOV Recommendations on the Harmonization of Lists of Protected Species, which was submitted to the second meeting with international organizations (October 15 and 16, 1984) in document IOM/II/5.

3. At the time of writing this document, the Office of the Union has not yet received any preliminary comments from the international organizations. It has received correspondence, on the other hand, which shows that two subjects have to be considered, namely:

(i) the demarcation of the relative areas of application of plant variety protection and patent protection;

(ii) the exclusion of certain categories of varieties from protection.

Demarcation of the areas of application of plant variety protection and patent protection

4. The Annex to this document contains the text of a letter addressed to the European Patent Office by the Federal Varieties Office of the Federal Republic of Germany on the subject of the protection of cultivated mushrooms and, incidentally, cell lines. With regard to the problem of demarcating the relative areas of application of the two protection systems, the Office of the Union presents the following observations to the Committee as a basis for its discussions.

5. Demarcation is determined by:

(i) the UPOV Convention and the laws based on it,

(ii) patent law, and, under certain circumstances,

(iii) a combination of the above two sources of law.

6. As mentioned in paragraph 1 above, the Convention "may be applied to all botanical genera and species" (Article 4(1)). Moreover its purpose is the protection of varieties, which typically take the material form of "reproductive or vegetative propagating material, as such" (Article 5(1)). Finally it serves the purpose, among others, of contributing to the development of agriculture (preamble). It should be pointed out that the word agriculture is to be understood in its broad sense, including horticulture and forestry. It also includes activities not depending on land equivalent to agricultural activities, such as the production of plantlets in vitro.

7. It follows, unquestionably, that the Convention is applicable to the (higher) edible mushrooms: these indeed are botanical genera and species the varieties of which (known as "strains") take the form of propagating material (the mycelium) and are used in agricultural enterprises.

8. The case of plant cell lines is more delicate. The Convention is applicable to them, without any doubt, as soon as they serve as the basis of the production of plantlets ("in vitro multiplication" or micropropagation"). However, those lines could also from part of a purely industrial process. In that case they are not being exploited in the form of "production, for purposes of commercial marketing, of the reproductive or vegetative propagating material, as such" and of "marketing of such material" (Article 5(1)). Even if those lines can be effectively protected under Article 5(4) of the Convention, which provides that it is possible, by means of national legislation, to grant a more extensive right, "extending in particular to the marketed product," it has to be admitted that they have more to do with the patent field than with that of plant variety protection, like animal cells and above all microorganisms used in industrial processes of the same kind.

9. It is not certain however that a plant cell line as such, which in fact means as a variety, qualifies for protection under patent law. If one refers to Article 53(b) of the European Patent Convention, one does indeed see that under that Convention--and a number of national laws--patents "shall not be granted in respect of ... plant or animal varieties or essentially biological processes for the production of plants or animals; this provision does not apply to microbiological processes or the products thereof." At present cell lines are assimilated to microorganisms for the purposes of patent procedure, or at least the intention is that they should be. While a process involving

the action of a cell line of a higher organism may readily be considered microbiological, the assimilation of a cell of a higher organism to a micro-organism is more of a problem. That is a question outside the jurisdiction of UPOV, but it does seem desirable that UPOV should be involved in any work done on it, for in fact the demarcation of its area of competence is at issue. That demarcation brings Article 2(1) and related provisions of the UPOV Convention into play (in this connection see documents CAJ/XV/3 and CAJ/XV/8, paragraphs 21 to 26).

10. In order to conclude this part, but above all to provide material for reflection and debate, it is pointed out that the problem may become complex, particularly if a variety is involved which is used both in agriculture (as seeds or seedlings) and in a "microbiological" industrial process (in cell form). To give some examples: an ornamental rose variety, also used in the bio-industrial manufacture of essence of rose; an ornamental variety of pyrethrum, also used in the bio-industrial manufacture of pyrethrin; the same cases, but with varieties specially adapted to the ("traditional") industry of extraction of essence of rose or pyrethrum.

Exclusion of Certain Categories of Varieties from Protection

11. Article 2(2) of the 1978 Act of the Convention provides that "each member State of the Union may limit the application of this Convention within a genus or species to varieties with a particular manner of reproduction or multiplication, or a certain end-use."

12. At the second Meeting with International Organizations, those organizations may be expected to raise the question of the exclusion of hybrids from protection. It will be remembered as having already been discussed at considerable length: the Committee considered the possibility of excluding parent hybrids (intermediate generations between lines and commercial hybrids) from protection at its eighth session (see documents CAJ/VIII/4, CAJ/VIII/9 and CAJ/VIII/11, paragraphs 9 to 12). The question of the exclusion of all hybrids from protection was also raised at the first Meeting with International Organizations (see document IOM/I/12, paragraphs 54 and 70) and thereafter debated by the Committee and the Technical Committee. They concluded that protection should not be limited to lines alone (see document CAJ/XIV/6, Annex III, question 9).

13. It is also to be expected that the same question will be asked in connection with the progress of micropropagation techniques. Micropropagation could indeed replace, in the future, the classical technique for the production of F1 hybrids in certain vegetables (or be associated with it for the production of hybrids between clones). It is thus feared that, if hybrids were excluded from protection, breeders might find themselves deprived of any form of protection, including that provided by the trade secrecy relating to lines (known as "biological" or "natural" protection), when the production of plantlets by micropropagation becomes economically feasible. It should be noted that this much-feared problem does not exist if the hybrid is protected, as protection is independent of the manner of reproduction or multiplication.

14. This fear is not entirely justified. It is true that the risk described does exist for an unprotected hybrid (either because protection is not available--the species concerned being unprotected or hybrids being excluded from protection--or because the breeder has not applied for it). It is equally true however, from the legal point of view, that no member State excludes hybrids of vegetables from protection (although such an exclusion does exist

in Spain for maize and in France for sorghum), and that seemingly none intends to exclude them. The fear therefore relies on a somewhat improbable assumption concerning the development of the plant variety protection system. Moreover, consideration of the technical aspect of the question leads one to believe that the problem, if it were to arise, would be only temporary in character: vegetative multiplication, of which micropropagation is a specific form, enables the breeder to exploit the best-performing genotypes in the form of clones, and thereby rid himself of the constraints of hybrid manufacture. Hybrids will then be replaced by clones.

15. The circumstances of the United States of America are very special and deserve to be considered at greater length: hybrids are excluded from the protection conferred by the Plant Variety Protection Act, but they can be the subject of a plant patent if they can be multiplied vegetatively--which is precisely the hypothesis underlying this part. Moreover, unless otherwise ruled by the judiciary, they can even be the subject of an "industrial" patent if the conditions of the U.S. Code on utility patents are met and if it is considered that they do not qualify for protection under the provisions on plant patents. There at least are the makings of a problem of two sources of law competing with each other.

16. Problems of a similar nature may arise also in States that protect plant varieties by virtue of a single legal text, and which might limit protection to a particular type of variety, or might provide for different treatment depending on the type of variety. This is what happens, for instance, where different protection periods are provided for depending on whether the species is one reproduced by sexual means or multiplied vegetatively. Care should therefore be taken in this area. In fact, in view of the expected development of plant breeding technology, seed and seedling production techniques and growing techniques in agricultural enterprises, it does not seem desirable to exclude certain categories of varieties, according to their manner of reproduction or multiplication, from protection.

[Annex follows]

CAJ/XVI/2

ANNEX

LETTER DATED JUNE 26, 1985, FROM THE FEDERAL PLANT VARIETIES OFFICE OF THE FEDERAL REPUBLIC OF GERMANY TO THE EUROPEAN PATENT OFFICE

Subject: Patent protection of microorganisms, more specifically mushrooms

In view of the fact that some preliminary applications have been received from mushroom breeders, it is possible that we will shortly have to consider the question of entering edible mushrooms in the list of species eligible for the protection provided for in the Varieties Protection Law (list of species). According to Article 4(1) of the International Convention for the Protection of New Varieties of Plants, which provides that it "may be applied to all botanical genera and species," a species is entered in the list of species in the Federal Republic of Germany when, in particular, "that is necessary in view of the importance of the commercialization of its varieties." The genus Agaricus L. and the species Agaricus bisporus (cultivated mushroom) already qualify for protection under plant variety protection law, the one in the Netherlands and the other in Japan.* Like other member States of the International Union for the Protection of New Varieties of Plants (UPOV), we shall rely for this examination on the hypothesis that mushrooms, which are the third branch of the plant kingdom, also constitute--at least those of the size of cultivated mushrooms (having in fully grown form a cap with a diameter of 10 cm, for instance, but capable of being harvested well before this time for the purposes of consumption)--"botanical genera and species" within the meaning of the UPOV Convention, and that they are excluded from patentability, as plant varieties, by the first phrase of Article 53(b) of the European Patent Convention (EPC) and the corresponding provisions, of identical content, of national patent laws.

We have just learned however that the Commonwealth Mycological Institute in Kew (Surrey) accepted the deposit on July 9, 1984, of mutant strains of Agaricus bisporus (cultivated mushroom) by virtue of the Budapest Treaty on the International Recognition of the Deposit of Microorganisms for the Purposes of Patent Procedure. A patent application for those strains has been filed with your Office on the basis of that deposit (application No. 84305097.2). There would be every reason to believe that such an application was based on the assumption that mushroom strains are microorganisms.

If, either at present or in the future, that should be the prevailing opinion in the patent field, it would have a lasting effect on the basic tenets underlying the work being carried on in connection with plant variety protection. To our knowledge there is as yet no clear, general demarcation line between the field of patentable microorganisms and that of plants governed by plant variety protection law. Be that as it may, a demarcation problem arises also in the case of cells of higher plants. They are at present considered microorganisms, but they can also constitute reproductive or vegetative propagating material within the meaning of Article 5(1) of the UPOV Convention.

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* Other species of mushrooms are also protected in Japan. The United Kingdom is also considering extending protection to the cultivated mushroom (note by the Office of the Union).

For that reason, we take the liberty of asking whether you too consider it desirable that there be an exchange of views and information on problems of demarcation between patent and plant variety protection, like the one that already occurred on the occasion of an information visit paid to the Federal Plant Varieties Office from June 13 to 16, 1983, by officials of the European Patent Office. The discussions could of course also be held within the framework of UPOV.

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