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INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

GENEVA

ADMINISTRATIVE AND LEGAL COMMITTEE

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TECHNICAL COMMITTEE

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Geneva, April 21, 1993

RELATIONS BETWEEN ARTICLES 1(vi), 7 AND 14(5)(b) OF THE 1991 ACT

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Introduction

1. At its twenty-sixth ordinary session held on October 29, 1992, the Council, pursuant to a request from the delegation of Germany, asked the Administrative and Legal Committee and the Technical Committee to jointly examine the relations between Articles 1(vi), 7 and 14(5)(b) of the 1991 Act of the UPOV Convention and, in particular, the impact of any special rule which might be adopted concerning the distinctness criterion upon the new legal provision in Article 14(5) concerning varieties which are essentially derived (see paragraph 25 of document C/26/15 Prov.).

The Legal Provisions

2. Article 1(vi) of the 1991 Act (the definition of variety) reads as follows:

> "(vi) 'variety' means a plant grouping within a single botanical taxon of the lowest known rank, which grouping, irrespective of whether the conditions for the grant of a breeder's right are fully met, can be
> - defined by the expression of the characteristics resulting from a given genotype or combination of genotypes,
> - distinguished from any other plant grouping by the expression of at least one of the said characteristics and
> - considered as a unit with regard to its suitability for being propagated unchanged."

There is no corresponding provision in the 1978 Act.

3. The relevant part of Article 7 of the 1991 Act (establishing the distinctness criterion) reads as follows:

> "The variety shall be deemed to be distinct if it is clearly distinguishable from any other variety whose existence is a matter of common knowledge at the time of the filing of the application."

In the 1978 Act, the relevant provision requires that the variety "must be clearly distinguishable by one or more important characteristics."

4. Article 14(5)(b) of the 1991 Act (establishing the concept of the essentially derived variety)--which has no equivalent in the 1978 Act--reads as follows:

> "(b) For the purposes of subparagraph (a)(i), a variety shall be deemed to be essentially derived from another variety ('the initial variety') when
>
> (i) it is predominantly derived from the initial variety, or from a variety that is itself predominantly derived from the initial variety, while retaining the expression of the essential characteristics that result from the genotype or combination of genotypes of the initial variety,
>
> (ii) it is clearly distinguishable from the initial variety and
>
> (iii) except for the differences which result from the act of derivation, it conforms to the initial variety in the expression of the essential characteristics that result from the genotype or combination of genotypes of the initial variety."

Article 1(vi) of the 1991 Act

5. The inclusion in the Convention of a definition of variety had as its principal objective the need to specify that certain plant groupings which do not fully meet the conditions for the grant of a breeder's right are nonetheless to be considered as varieties and to be taken into account, particularly in the examination of distinctness as an "other variety ... of common knowledge." This objective is reflected both in the introductory phrase of the definition ("irrespective of whether the conditions for the grant of a breeder's right are fully met") and in the very general language of the conditions introduced by hyphens, where, unlike the provisions of Article 7, the condition of distinctness does not involve any requirement of clearness. Accordingly, the reference to distinctness for the purposes of the definition must be clearly differentiated from the use of clear distinguishability as a condition for the grant of a breeder's right.

6. The conditions concerning the possibility of defining the plant grouping in question and concerning distinctness are linked in the one case with "the expression of the characteristics resulting from a given genotype or combination of genotypes," and in the other case to "the expression of at least one of the said characteristics." An object of both conditions is to exclude a concept of variety which would be based upon differences resulting from variations in the plant environment (in the broadest sense of the term). They raise nonetheless the following questions:

(i) Must a variety, in order to be such, be distinguished exclusively upon the basis of phenotypic characteristics (that is upon characteristics resulting from the genotype to the exclusion of characteristics which are based upon the structure of the genetic material, the DNA, itself)?

(ii) Must there invariably be a distinction in at least one "characteristic" in the sense that distinction must be based on one descriptive feature and not upon the combined weight of a number of descriptive features?

Must a Variety be Distinguished Exclusively on the Basis of Phenotypic Characteristics?

7. Discussion of this question involves first the notion of "characteristic" for the purposes of the UPOV Convention and, secondly, the notion of "phenotype":

(i) Characteristic is not defined in any Act of the Convention. The nature of a characteristic for the purposes of the UPOV Convention was discussed in the context of multivariate analysis in document CAJ/30/2 at paragraph 5. The discussion suggests that a "characteristic" is any feature of the material of a variety which is able to be described. The language of both the 1961 and 1978 Acts requires, however, that such features, in order to be taken into account for distinctness purposes, must "permit a variety to be defined and distinguished" and must "be capable of precise recognition and description." Clearly, the draftsmen of the 1978 Act of the Convention may have had at the front of their minds the familiar morphological or physiological and other characteristics which are descriptive of the phenotype of a plant variety, but no express or implied limitation to phenotypic characteristics appears in the Convention.

(ii) The Concise Oxford Dictionary defines phenotype as a "set of observable characteristics of an individual or group as determined by genotype and environment." However, the concept of phenotype depends in practice upon the approach adopted by the observer and the method of observation used: the characteristics determined by genotype (i.e. phenotype) can be observed at the level of the final result (for example at the level of the morphological characteristic) or at an intermediate level (for example by an analysis of the molecules that are involved), while in the light of modern biotechnological discoveries, the first observable characteristic resulting from a gene is the messenger RNA which represents the transcription of the gene. There accordingly exists between the concepts of genotype and phenotype such continuity that the question whether varieties must be defined exclusively upon the basis of phenotypic characteristics hardly makes sense.

8. Today, a large number of observations can be made in relation to the material of a variety which are closely related to the DNA, the genotype itself, and totally uninfluenced by the environment (except that of the laboratory!), but which nonetheless constitute characteristics which result from the genotype itself. The results of laboratory assays using genetic probes of various kinds would seem in most cases to fall into this category. It should be noted in this context that the 1991 Act both in Article 1(vi) and Article 14(5)(b) refers to characteristics which "result from" a genotype. It does not use the term "expression" in relation to the genotype (where it is a term of art with a very specific meaning) but only in relation to characteristics. "Result from" is not a term of art in relation to genotype and does accordingly allow for some latitude in interpretation.

9. The suggestion that Article 1(vi) of the 1991 Act should not be interpreted so as to base the existence of distinctness solely upon phenotypic characteristics is supported by the historical evolution of the provisions concerned with the distinctness criterion itself. The 1961 Act specified that: "A new variety may be defined and distinguished by morphological or physiological characteristics." From the outset it was questioned whether the adjectives "morphological" or "physiological" really added much to the broad meaning of "characteristics." In practice, the phrase was given the widest possible interpretation so that the word "physiological," for example, was taken to include characteristics which would be described as "cytological, chemical or otherwise" under the provisions of the International Code of Nomenclature for Cultivated Plants. The reference to the morphological and physiological nature of characteristics was finally deleted from the Convention during the 1978 Diplomatic Conference without, in any way, changing the technical basis for the criterion. Today's precise methods of DNA analysis simply establish "cytological" or "chemical" characteristics that are independent of environment.

10. Further support comes from the fact that for certain species, the first "characteristic" (in the sense in which this word is used in the guidelines) which is observed, is at the level of ploidy. This characteristic is not descriptive of "the expression of a characteristic resulting from a given genotype," but of the genome itself being the observation of its chromosome number. There can presumably be no question of dispensing with this important characteristic.

At Least One Characteristic?

11. The requirement of a distinction "in at least one characteristic" requires only that a plant grouping differs in one descriptive feature in order to constitute a separate variety. The difference need not be "clear." In the absence in the various Acts of the Convention of a definition of "characteristic," the difference "could, in an appropriate case, be constituted by a single inherited descriptive feature or could be the result of the combination of data relating to more than one such feature." See in this context paragraphs 12 to 14 of document CAJ/30/2 concerning "The definition of the variety and multivariate analysis."

12. The reference to at least one characteristic is in the context of Article 1(vi) a statement of the obvious. It simply restates the obvious fact that if two plant groupings do not differ from each other by any inherited descriptive feature, they cannot be separate varieties. This difference might, in some cases, be minimal so as to fail, for example, to satisfy the statistical requirements of UPOV, established in guidelines and used to set an objective basis for a clear distinction. The existence of the words "at least one characteristic" in Article 1(vi) does not preclude an expert finding under Article 7 of the 1991 Act that two plant groupings are clearly distinguishable from each other on the basis of the accumulated value of a number of separate small differences, any one of which taken in isolation might be acceptable as the basis for the existence of a separate variety for the purposes of Article 1(vi).

Article 7 of the 1991 Act

13. The practice of UPOV member States in relation to distinctness under the 1961 and 1978 Acts has come to be known as the "minimum distance" criterion of

the Convention. The continued existence of this criterion is very strongly underlined in the 1991 Act in the following ways:

(i) The definition of variety in Article 1(vi) of the 1991 Act expressly recognizes varieties which are not protectable since they fail to fulfill the criteria for protection; included amongst such varieties could, theoretically at least, be those which are merely distinguishable on the basis of "the expression of at least one characteristic resulting from the genotype" but which are not "clearly distinguishable" so as to satisfy the minimum distance criterion.

(ii) Article 14(5)(a)(ii) of the 1991 Act expressly recognizes a category of "varieties" (which must by definition be distinct) which are not clearly distinguishable from the protected variety and which fall within the scope of protection of the protected variety. Put another way, such varieties fall within the "minimum distance" from the protected variety.

The existence of such a category of varieties under the 1961 and 1978 Acts could only be inferred from the text. The text of the 1991 Act expressly confirms its existence.

14. Reference has been made above to the language of Article 6(1)(a) of the 1978 Act which requires varieties to be "clearly distinguishable by one or more important characteristics" for distinctness purposes. The differing interpretation of the expression "one or more important characteristics" was noted in the context of the definition of the variety and multivariate analysis (see paragraph 6 of document CAJ/30/2) while the possible interpretation of the expression "at least one characteristic" in Article 1(vi) of the 1991 Act is covered in preceding paragraphs. In Article 7 of the 1991 Act, the words "by one or more important characteristics" no longer appear. It is generally recognized that this change in language was not intended to change the practice of the member States in relation to distinctness in any major way. However, the change in language can be used to support two propositions:

(i) Insofar as member States have in the past adopted differing interpretations of "clearly distinguishable by one or more important characteristics" (e.g. "at least one" or "one or several"), the language of the 1991 Act of the Convention now requires that a variety be "clearly distinguishable" leaving it to experts to determine objective and consistent methodologies to establish clearness without being fettered by an interpretation of the Convention (which was in any event not universally accepted) which would forbid the accumulation of a number of small differences as the basis for a clear distinction.

(ii) Where a variety differs clearly by just one characteristic, the language of the 1961 and 1978 Acts of the Convention would seem to enable an applicant who could show such a difference to argue that he should be granted protection. The language of the 1991 Act permits an office to argue in appropriate cases, perhaps one where a difference is based on a single gene, that the difference, whilst being sufficient to establish the existence of a separate variety (at least for the purposes of the UPOV Convention) does not satisfy the distinctness criteria for the purpose of protection. This provides the opportunity for experts to address the situation under the existing practice of many countries whereby a difference in a single gene controlling an obvious morphological characteristic might be taken to satisfy the minimum distance requirement while small differences in a number of characteristics (and symptomatic of a greater genetic distance) would be rejected.

The Relationship Between Article 1(vi) (Definition of Variety) and Article 7 (Distinctness)

15. The above analysis would seem to support the conclusions that

(i) the 1978 Act of the UPOV Convention uses the concept of characteristics for distinctness purposes but without adopting language which, in practice, limits the nature of the characteristics which can be used, except that a particular characteristic must be capable of precise recognition and description so as to permit a variety to be defined and distinguished; the 1991 Act no longer refers to characteristics for distinction purposes, leaving the expert free to determine the most appropriate technique to establish that a variety is clearly distinguishable;

(ii) the characteristics that can be used to define and/or distinguish a variety were never limited to the phenotype as such;

(iii) the expression "at least one characteristic," when used in the definition of variety in the 1991 Act, simply requires that there be "a difference" between plant groupings in order that they be regarded as separate varieties for the purposes of the Convention; it has no other function and, in particular, imposes no limitation on the examination procedures followed to establish distinctness for the purposes of protection.

Article 14(5)(b) of the 1991 Act--The Concept of the Essentially Derived Variety

16. The concept of the essentially derived variety is based upon three conditions concerning the relationship between the essentially derived variety and the initial variety:

(i) the existence of a direct or indirect genealogical link;

(ii) the existence of a clear distinction;

(iii) the existence of conformity with "the expression of the essential characteristics which result from the genotype or the combination of genotypes of the initial variety" (genetic conformity).

The Relationship Between Articles 7 (Distinctness) and 14(5)(b) of the 1991 Act (Essential Derivation)

17. The rules adopted for the implementation of the distinctness condition (that is for the concept of minimum distances between varieties) within the context of the examination for the purposes of protection must, it would seem, also be applied to distinctness within the context of the concept of the essentially derived variety. Such rules establish the lower limit of this concept and accordingly have a direct impact upon it; every plant grouping derived from a protected variety which does not fulfill this condition cannot be an essentially derived variety (nor a protectable variety), but is covered by the breeder's right granted to the protected variety as a result of Article 14(1)(a)(ii) of the 1991 Act.

18. On the other hand, the introduction of the concept of the essentially derived variety does not involve any intention or necessity to modify the distinctness (minimum distance) criterion. The purpose of the minimum distance

requirement for protection is to ensure that a variety which is a candidate for protection is sufficiently different from other known varieties to be defined and distinguished with a separate identity under the practical circumstances of a plant variety protection system which identity can, if necessary, be substantiated in a court of law. The candidate variety may or may not be derived (i.e. be descended genealogically) from the other variety in relation to which the question of distinctness arises. The existence of an effective examination system based upon "minimum distances" will continue to be the essential foundation for the legal certainty which is an important feature of the UPOV system of protection.

19. The function of the essentially derived variety is quite different from that of the minimum distance. It will only be of relevance where there is a genealogical relationship between varieties and its purpose is to ensure that the work of one breeder is not unfairly exploited by another. Other than as explained at paragraph 17 there is no necessary relationship between the two concepts except insofar as the concept of the essentially derived variety may decisively remove from the minimum distance concept the task of eliminating "unfairness" between breeders which the concept was not equipped to perform.

20. The claim of a right in an essentially derived variety--by the breeder of the initial variety--requires him to establish the existence of the three conditions mentioned in paragraph 16 above. If the essentially derived variety has been the subject of an application for protection, distinctness will have been established by the national office. If this is not the case, it must either be established by the interested parties (the breeder of the initial variety on the one hand and the breeder of the essentially derived variety on the other hand) or by arbitration or a tribunal; presumably the arbitrators or the tribunal would seek guidance in the official distinctness rules and practices.

21. The establishment of the genealogical link and of genetic conformity would, in every case, be the responsibility of the interested parties and, in the absence of an agreement between them, of arbitrators or tribunals. It would not be the responsibility of the national offices to fix the rules, equipment or methods to be used. It would seem that these will be based in large measure upon the biological characteristics of the species in question and in the breeding method of the essentially derived variety: an examination based upon phenotypic characteristics will often be sufficient, for example, for varieties multiplied vegetatively, while the measuring of genetic distance by means of data derived from one or more DNA profiles might be indispensable in the case of varieties reproduced sexually.

22. The above analysis would seem to support the following conclusions:

(i) While the distinctness rules have--necessarily--a direct relationship with the concept of the essentially derived variety, these rules must be fixed, as must be the equipments and methods used for the purposes of the examination, with the nature and the purposes of the distinctness examination in mind.

(ii) The rules, equipment and methods which will be used for the examination of the genealogical link and of genetic conformity are theoretically independent of the rules, equipment and methods used for the examination of distinctness; in practice, however, many new developments in technology will be useful in relation to both distinctness testing and the ascertainment of the genealogical link and genetic conformity.

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