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UPOV

IOM/I/3
ORIGINAL: anglais
DATE: May 4, 1983

INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

GENEVA

MEETING WITH INTERNATIONAL ORGANIZATIONS

Geneva, November 9 and 10, 1983

MINIMUM DISTANCES BETWEEN VARIETIES

Document prepared by the Office of the Union

This document contains a restatement of technical rules adopted in UPOV which are of importance when minimum distances between varieties are determined.

RESTATEMENT OF TECHNICAL RULES ADOPTED IN UPOV WHICH ARE OF IMPORTANCE WHEN MINIMUM DISTANCES BETWEEN VARIETIES ARE DETERMINED

Introduction

1. The expression "minimum distances between varieties" was coined to signify the extent of the difference that has to exist between the new variety and any other variety if the new variety is to qualify for a grant of a plant breeder's right (plant variety protection, plant patent). This question has been of importance ever since UPOV came into existence, especially in connection with the establishing of UPOV Guidelines for the Conduct of Tests for Distinctness, Homogeneity and Stability ("Test Guidelines") and the determination of individual states of expression of the characteristics included in those Test Guidelines. It has gained further importance in recent years as a result of various developments, namely

(i) the difficulties that have arisen in the case of varieties in which mutations appear frequently or can easily be provoked artificially,

(ii) the discussion on whether characteristics obtained with the help of electrophoresis or other sophisticated testing methods should be used in the testing of distinctness, homogeneity and stability,

(iii) the general discussion in the Technical Committee and in the Technical Working Parties of UPOV as to whether the range of characteristics included in the Test Guidelines should be enlarged,

(iv) the fact that breeders are increasingly using similar or identical basic material for their breeding, which will inevitably lead to varieties that are closer and closer to each other and thus more difficult to distinguish from each other,

(v) the fact that new techniques permit a relatively easy, inexpensive and rapid transfer of certain characteristics from one variety to another, which enables competitors of owners of plant breeders' rights to develop the protected variety into a new variety of dubious additional agricultural or economic value simply for the purpose of avoiding the payment of royalties for the use of the protected variety.

2. The question of minimum distances has both technical and legal aspects. It is intended that the discussion at the hearing of the international non-governmental organizations planned for November 9 and 10, 1983, should be restricted to the technical aspects of the question. The present document is to form the basis of these discussions.

3. Where the following paragraphs contain detailed observations on the interpretation of provisions of the UPOV Convention and on terms used in them, these are the personal opinions of the authors of the document. They should in no way be taken as an official or recommended interpretation of the UPOV Convention.

4. The UPOV Convention already contains detailed provisions to ensure that variety protection is granted only for varieties which have a certain distance from other varieties. These provisions are contained in Article 6(1)(a), which stipulates that a variety "... must be clearly distinguishable by one or more important characteristics from any other variety whose existence is a matter of common knowledge at the time when protection is applied for."

5. Guidance for the interpretation of Article 6(1)(a) of the UPOV Convention was given in a number of UPOV documents, mainly in the General Introduction to the Guidelines for the Conduct of Tests for Distinctness, Homogeneity and Stability of New Varieties of Plants (document TG/1/2)--hereinafter referred to as "the General Introduction"--but also in the individual Test Guidelines and in a document reporting on agreement reached in the Council on certain questions of detail. The basic provisions of a technical nature which are contained in those documents are restated in the following paragraphs. They are divided into principles for the interpretation of what is to be considered an "important" characteristic and for the interpretation of what is to be understood by "clearly" distinguishable.

Interpretation of What is to be Considered an "Important" Characteristic

6. A submitted variety must be distinguishable by at least one "important" characteristic from any other variety whose existence is a matter of common knowledge. The UPOV Convention does not explicitly stipulate what has to be considered an important characteristic. In the early years of UPOV there was disagreement on the aspect in terms of which the characteristic had to be important, and the Council of UPOV decided, in the General Introduction to the Test Guidelines, that important had to be interpreted as "important for distinguishing one variety from another" (see document TG/1/2, paragraph 7).

7. The UPOV Test Guidelines for the individual species list under the heading "Table of Characteristics" a number of characteristics which UPOV member States consider "important" for distinctness purposes and which are therefore also important for the examination of homogeneity and stability. They are not necessarily qualities which give an idea of a certain value that the variety may possess. The Tables of Characteristics are not exhaustive and may be enlarged by further characteristics if that should prove useful. The member States can therefore draw up national lists of characteristics containing additional characteristics, and they are not prevented by the UPOV Convention from occasionally taking further characteristics into account in actual testing. Whether these additional characteristics have to be mentioned in the national lists of characteristics before they can be taken into account in the testing of an individual variety, or whether the national office is free to include any additional characteristic on the spot, is a matter for national legislation, and the present answer differs in the various member States. The UPOV Convention and the UPOV Test Guidelines give the member States a completely free hand in this case.

8. In some individual Test Guidelines further clarifications on whether a characteristic is important or not are given. Thus it is said that for maize (see document TG/2/4, paragraph 11 of the Technical Notes):

> "11. A reciprocal cross is acceptable as a new variety if it is distinct in its varietal characteristics. Hybrids can also be produced on a reciprocal basis as long as this does not change the characteristics of the plants of the hybrid; in this case only one title of protection should be granted but the breeder has to indicate both formulas. If a reciprocal cross does not change the characteristics of the hybrid plants, but the seed to produce them is different, the breeder has to describe this difference (i.e. whether it is of flint, dent or intermediate type); the breeder also has to ensure that the type of sowing seed commercialized is always clearly indicated to the user."

9. The interpretation of the word important as "important for distinguishing one variety from another" has recently been supplemented. The statement that all characteristics that are important for distinguishing purposes are also important characteristics within the meaning of the UPOV Convention could lead to the false conclusion that all characteristics that enable a variety to be identified can also be used as important characteristics for distinguishing purposes. The Technical Committee therefore agreed on the following clarification which was noted with approval by the Council (see document C/XV/9, paragraphs 6 to 8):

> "6. The [Technical] Committee concluded that several sophisticated methods might be very well adapted for checking the identity of a sample but not for distinguishing varieties for the granting of variety protection. It therefore stressed the need to make a clear distinction between these two purposes.
>
> "7. To be used for identification purposes a method has to fulfill several technical requirements. It must be capable of standardization and should lead to the establishment of significant differences which are consistent and repeatable.
>
> "8. To be acceptable as a method which would lead to characteristics which can be used for the establishing of distinctness for the granting of variety protection, the fulfilment of all these technical requirements alone may not be enough. The notion of an important characteristic may be open to other than purely technical interpretation. Decisions on the acceptance of a certain characteristic observed by a certain method will have to be taken species by species depending on the stage of development of breeding as well as on several further considerations which go beyond the competence of the Technical Committee."

10. This shows clearly that characteristics can exist that are very well suited for identification purposes or for confirming that a given sample belongs to a specific variety, but that cannot be considered important for distinguishing purposes. This type of characteristic is met with particularly when the sophisticated testing methods mentioned are used.

Interpretation of What is to be Understood by "Clearly" Distinguishable

11. The variety has to be "clearly" distinguishable. The Convention provides no more detailed definition of this requirement. Right from the beginning, therefore, UPOV has discussed this question in several of its organs. The result of those discussions is recorded in the General Introduction to the UPOV Test Guidelines (document TG/1/2) which states, for given cases, when a variety is clearly distinguishable from another commonly known variety.

12. For all groups of characteristics, the common criterion laid down for distinctness is that the difference between two varieties

- has been determined at at least one testing place,
- is clear, and
- is consistent.

13. In the case of true qualitative characteristics the difference between two varieties has to be considered clear if the respective characteristics show expressions which fall into two different states. In the case of other qualitatively handled characteristics, an eventual fluctuation has to be taken into account in establishing distinctness.

14. When distinctness depends on measured quantitative characteristics the difference has to be considered clear if it occurs with one per cent probability of error, for example, on the basis of the method of the Least Significant Difference. The differences are consistent, if they occur with the same sign in two consecutive, or in two out of three, growing seasons.

15. If a normally visually observed quantitative characteristic is the only distinguishing characteristic in relation to another variety, it should be measured, in the case of doubt, if this is possible with reasonable effort. In any case, it is recommended to make a direct comparison between two similar varieties since direct pair-wise comparisons show the least bias. In each comparison it is acceptable to note a difference between two varieties as soon as this difference can be seen with the eye and could be measured though this measurement might require unreasonable effort. The simplest criterion for establishing distinctness is that of consistent differences (significant differences with the same sign) in pair-wise comparisons, provided that they can be expected to recur in the following trials. The number of comparisons has to be sufficient to provide reliability comparable to that of measured characteristics.

16. Cases can arise in which differences may be observed in several separately assessed characteristics of two varieties, and if a combination of such data is used to establish distinctness, it should be ensured that the degree of reliability is comparable with that required for measured quantitative characteristics or normally visually observed quantatitive characteristics.

17. The interpretation contained in paragraphs 13 to 16 above, which has been taken from paragraphs 21 to 26 of document TG/1/2, clearly indicates that it is not possible to give a general interpretation of the word "clearly," and that interpretation depends on the type of characteristic. The above interpretation presents no problems at all with respect to true qualitative characteristics, as the minimum distances between two varieties are clearly fixed. For measured quantitative characteristics, the distances are also fairly clearly defined. However, the use of statistical methods demands that the sample size be fixed if the desire is to obtain results with the same degree of probability. UPOV therefore decided to indicate fixed sample sizes rather than minimum sizes in each of the individual Test Guidelines.

18. The interpretation of "normally visually observed quantitative characteristics" raised the greatest difficulties and even now leaves room for different possibilities of interpretation. The same is true of the combined characteristics mentioned in paragraph 16 above, which as yet however have not occurred very often.

19. Some individual Test Guidelines provide further clarifications. Thus for maize and sunflower (see document TG/2/4, paragraph 10 of the Technical Notes), it is stated that:

> "10. A difference in the formula of a hybrid is not enough by itself and the protection of a hybrid variety requires that it be sufficiently different in its characteristics when compared with other varieties. If an application is filed for protection of a hybrid variety which is based on a formula already existing, the applicant should be informed of the fact and given the possibility of withdrawing his application. If he does not withdraw his application, the authority should test the variety."

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