E

Reference to document TC/37/9, Comments 2 (TWC, TWV)

UPOV

TWO/34/7
ORIGINAL: English
DATE: August 10, 2001

INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

GENEVA

TECHNICAL WORKING PARTY FOR ORNAMENTAL PLANTS AND FOREST TREES

Thirty-Fourth Session
Nagano, Japan, September 24 to 28, 2001

COMMENTS ON:

TG/1/3 "REVISED GENERAL INTRODUCTION TO THE EXAMINATION OF DISTINCTNESS, UNIFORMITY AND STABILITY AND THE DEVELOPMENT OF HARMONIZED DESCRIPTIONS OF NEW VARIETIES OF PLANTS"

Document prepared by the Office of the Union

1. Circular U3100 explained how comments on TC/37/9(a) *(draft TG/1/3 "Revised General Introduction to the Examination of Distinctness, Uniformity and Stability and the Development of Harmonized Descriptions of New Varieties of Plants")* would be considered by all the Technical Working Parties. In particular, it noted that comments from the Technical Working Parties meeting earlier in the year would be considered by the later Technical Working Parties and that any comments would be continuously submitted to the Enlarged Editorial Committee to enable a final document to be prepared in time for submission to the Council in October 2001.

2. In accordance with this approach the comments from The Technical Working Party on Automation and Computer Programs (TWC) and The Technical Working Party for Vegetables (TWV) are attached for consideration.

3. In addition, certain other comments have been received or provided by the Office and these are also presented for consideration.

a) Comments from the TWC

The TWC have proposed the following amendments to the draft TG/1/3 text presented in TC/37/9(a):

Proposed Amendments to TC/37/9(a)	**Explanation**
77. Document TGP/8, "Use of Statistical Procedures in DUS Testing" ~~"Good Statistical Practices for DUS Testing,"~~ provides guidance on good statistical practices for DUS assessment. Keys for the choice of methods in relation to the data structure are given in document TGP/8, "Use of Statistical Procedures in DUS Testing" ~~TGP/9, "Examining Distinctness~~." [also amend table and associated documents]	*The TWC propose to broaden the scope of TGP/8 to explain how statistical procedures can be applied to DUS Testing (e.g. the use of scale levels according to the type of characteristics), rather than just presenting the procedures.*
4.4.1 Qualitative Characteristics 38. Qualitative characteristics are those that are expressed in discontinuous states (e.g. sex of plant: dioecious female (1), dioecious male (2), monoecious unisexual (3), monoecious hermaphrodite (4)). These states are self-explanatory and independently meaningful. All states are necessary to describe the full range of the characteristic, and every form of expression can be described by a single state. The order of states is not important ~~states do not necessarily have any logical order~~. As a rule the characteristics are not influenced by environment.	*The TWC proposal for improved wording.*

4.4.2 Quantitative Characteristics 39. "Quantitative characteristics" are those that can show the full range of variation from one extreme to the other and whose expression can be recorded on a one-dimensional, continuous or discrete, linear scale. ~~whose expression can be recorded on a one-dimensional, linear scale and which show continuous variation from one extreme to the other.~~ The range of expression is divided into a number of states of expression for the purpose of description (e.g. length of stem: very short (1), short (3), medium (5), long (7), very long (9)). The division seeks to provide, as far as is practical, an even distribution across the scale. The Test Guidelines do not specify the difference needed for distinctness. The states of expression should, however, be meaningful for DUS assessment.	*The TWC observed that quantitative characteristics can be recorded on a discrete scale (e.g. 1,2,3…. days to ear emergence) and not just a continuous scale. It is therefore considered better to avoid the use of the phrase "continuous variation". It was also noted that the full range of variation is not always seen and it should be clear that it is more accurate to state that it can show the full range of variation.*
4.5.2 Bulk Samples 42. If it is necessary to examine characteristics in the form of bulk samples specific guidance will be considered in document TGP/8 "Use of Statistical Procedures in DUS Testing". ~~TGP/10, "Examining Uniformity."~~	*The TWC noted that it is also important to consider the assessment of distinctness where characteristics are examined in bulk samples and therefore propose to deal with bulk samples in TGP/8 "Use of Statistical Procedures in DUS Testing".*

b) Comments from the TWV

The TWV proposed the following amendments to the draft TG/1/3 text presented in TC/37/9(a):

Proposed Amendments to TC/37/9(a)	***Explanation***
1. …….. The examination, or "DUS Test," is based mainly on growing tests, carried out by the authority competent for granting plant breeders' rights or by separate institutions, such as public research institutes, acting on behalf of that authority or in some cases on the basis of growing tests carried out by the breeder or applicant. 3.2 Cooperation with Breeders and Applicants 28. In most countries, variety testing is administered by an official authority, although the breeders or applicants participate in the growing tests to varying degrees.	*Should also refer to applicant.*
27. The ultimate form of international cooperation is a "centralized" testing system where the entire examination is carried out by one authority on behalf of other Contracting Parties, regardless of the variety concerned or the applicant. This could, for example, be for a specific region ~~for example,~~ or, in the case of ~~glasshouse-tested~~ plants tested in a controlled environment greenhouse, for most if not all Contracting Parties.	*It is important to specify that the environment is controlled.*
31. Document TGP/6, "Arrangements for DUS Testing", ~~"DUS testing by the Applicant/Breeder,"~~ also gives useful information on the different possibilities of applicant involvement in the growing tests.	*Editorial* *(France to propose improved translation for French version)*
4.8 Functional Categorization of Characteristics ~~Standard~~ Test Guidelines Characteristic	*All of the categories of characteristics are standard UPOV characteristics* ***(check throughout document and TGP/7)***

6.3.3 Assessment of Uniformity in Hybrid Varieties 6.3.3.1 General 103. The assessment of uniformity in hybrid varieties depends on the type of hybrid, i.e. whether it is a single-cross hybrid or another type, and whether it is a hybrid resulting from inbred parent lines, vegetatively propagated lines or from cross-pollinated parents.	*For completeness*

c) Other comments

Proposed Amendments to TC/37/9(a)	***Explanation***
1. …. The examination generates a description of the variety, using the expression of ~~its~~ relevant characteristics resulting from its genotype(e.g. plant height, leaf shape, time of flowering), by which it can be defined as a variety in terms of Article 1(vi) of the 1991 Act of the Convention.	*This clarification is necessary to ensure consistency with Article 1 (vi) of the 1991 Act of the Convention. This is also reflected in the following sections.*
2.4 Characteristics as the Basis for Examination of DUS 16. For any variety to be capable of protection it must first be clearly defined. Only after a variety has been defined can it be finally examined for ~~fulfilment~~ fulfillment of the DUS criteria required for protection. All Acts of the UPOV Convention have established that a variety is defined by the expression of its characteristics and that those characteristics are therefore the basis on which a variety can be examined for DUS.	*see above*
5.3.2 Clearly Distinguishing Varieties ~~by Their~~ Using Characteristics	*see above*
5.3.3 The Criteria for Distinctness using Characteristics 63. The UPOV Convention does not elaborate the term "clearly distinguishable," however, in order to provide some guidance on the interpretation of the term, the following basis has been developed for the use of characteristics to clearly distinguish varieties. A variety may be considered to be clearly distinguishable if the difference in the expression of a characteristic~~s~~ is: • consistent, • clear. 5.3.3.1 Consistent Differences 64. One means of ensuring that a difference in the expression of a characteristic, observed in a growing trial, is consistent is to examine the characteristic on at least two independent occasions.	*see above*
5.5.2 Visually Assessed Characteristics 79. … In the case of non-parametric procedures the use of a scale that has been established on the basis of example varieties, representative of the different states of expression of the characteristics, is recommended.	*see above*

2. The purpose of this document (the "General Introduction") and the associated "TGP" series of documents is to set out the principles which are used in the examination of DUS.	*Editorial – to introduce the use of the phrase "General Introduction"*
8. In addition, the absence of Test Guidelines for the species or variety grouping concerned will obviously lead the DUS examiner to resort to this General Introduction, and there is a specific chapter (Chapter 9, "Conduct of DUS Testing in the Absence of Test Guidelines") in this document for such an eventuality.	*Editorial*
35. For inclusion in the Test Guidelines, further criteria are set out in Chapter 4.8~~7~~, "Functional Categorization of Characteristics" and in document TGP/7, "Development of Test Guidelines."	*Editorial*
4.8 Functional Categorization of Characteristics 49. Criteria: Asterisked Characteristic 1. Must be a characteristic included in the Test Guidelines 2~~1~~. Should always be examined for DUS and included in the variety description by all Contracting Parties except when the state of expression of a preceding characteristic or regional environmental conditions render this inappropriate. 3~~2~~. Accepted as useful for function 1. 4~~3~~. Particular care should be taken before selection of disease resistance characteristics.	*Clarifies that asterisked characteristics must satisfy the standard criteria and are always included in the Test Guidelines*
5.3.3.2.1 Qualitative Characteristics 68. In qualitative characteristics the difference between two varieties may be considered clear if ~~the~~ one or more characteristics ~~show~~ have expressions that fall into two different states in the Test Guidelines. Varieties should not be considered distinct for a qualitative characteristic if they have the same state of expression. 73. As explained in Chapter 5.3.3.2.1, "Qualitative Characteristics," for such characteristics the difference between two varieties may be considered clear if ~~the~~ one or more characteristics ~~show~~ have expressions that fall into two different states in the Test Guidelines.	*Editorial*
83. A simple ~~criterion~~ statistical basis for establishing distinctness is that ~~of consistent differences where~~ differences between varieties in pairwise comparisons are of the same sign (e.g. variety A is consistently and sufficiently greater than B), provided that they can be expected to recur in subsequent trials. The number of comparisons must be sufficient to ensure that the varieties are clearly distinguishable.	*Rephrased for accuracy*

5.5.3.1 Self-Pollinated and Vegetatively Propagated Varieties 87. UPOV has endorsed several statistical methods for the handling of measured quantitative characteristics. One method, established for ~~vegetatively propagated and~~ self-pollinated and vegetatively propagated varieties, ~~species~~ is that varieties can be considered clearly distinguishable if the difference between two varieties exceeds the Least Significant Difference (LSD) at a specified probability level with the same sign over an appropriate period, even if they are described by the same state of expression. This is a relatively simple method but is considered appropriate for ~~vegetatively propagated and~~ self-pollinated and vegetatively propagated varieties, ~~species~~ because the level of variation within varieties is relatively low, i.e. they are quite uniform. Further details are provided in document TGP/9, "Examining Distinctness." 88. …. Its main use is for measurement in cross-pollinated and synthetic varieties, but if desired it can also be used for measurement in ~~vegetatively propagated or self-fertilized~~ self-pollinated and vegetatively propagated varieties. Where COYD analysis cannot be used because the statistical criteria are not fulfilled, non-parametric procedures can be considered. For more details on the handling of measured quantitative characteristics see document TGP/9, "Examining Distinctness."	*Rephrased for accuracy (varieties : species) and editorial reasons (order of self-pollinated and veg. prop.)*
5.6 General Guidelines for Determining Distinctness 89. Individual Contracting Parties may develop their own systematic way of determining distinctness, based on the principles laid down in this document. However, because the same general guidance on determining distinctness is applicable across many Test Guidelines ~~do not provide specific practical guidance on examining distinctness, general guidance on the practical application of the UPOV principles will be~~ this is developed in a separate document TGP/9, "Examining Distinctness" and not reproduced in the individual Test Guidelines.	*To provide a clearer and more constructive explanation*
6.3 Particular Features of Propagation 92. The UPOV Convention links the uniformity requirement for a variety to the particular features of its propagation. This means that the absolute level of uniformity required for vegetatively propagated varieties, truly self-pollinated varieties, mainly self-pollinated varieties, inbred lines of hybrid varieties, cross-pollinated varieties, mainly cross-pollinated varieties, synthetic varieties and hybrid varieties may ~~will~~ be different.	*Rephrased for accuracy*

6.3.1.3 Statistical Basis for Setting Numbers of Off-Types 96. …. Based on statistical calculations for population standards and acceptance probabilities, the recommended population standard and acceptance probability ~~used~~ is stated in the individual Test Guidelines. The Test Guidelines also recommend ~~state~~ the maximum number of off-types tolerated for a given sample size. More detailed information can be found in document TGP/10, "Examining Uniformity."	*Rephrased for accuracy*
98. … For these, as well for as inbred lines of hybrid varieties, a higher tolerance of off-types is accepted, compared to truly self-pollinated and vegetatively propagated varieties. This is explained further in document TGP/10, "Examining Uniformity".	*Editorial*
6.3.2 Cross-Pollinated Varieties 99. Cross-pollinated varieties, including mainly cross-pollinated and synthetic varieties, generally exhibit wider variations within the variety than vegetatively propagated or self-pollinated varieties and inbred lines of hybrid varieties, and it is more difficult to determine off-types. Therefore, ~~R~~relative tolerance limits, for the range of variation, are set by comparison with comparable varieties or types already known.	*Editorial*
7.3 Examination of Stability 7.3.1 General 111. It is not usually possible to perform tests of stability that produce results as certain as those of the testing of distinctness and uniformity. However, experience has demonstrated that, in general, when a variety ~~a submitted sample~~ has been shown to be uniform ~~the material~~ it can also be considered to be stable.	*Rephrased for accuracy*
6.3.3.4 Multiple-Cross Hybrid Varieties 107. For other than single-cross hybrids (e.g. three-way crosses or double crosses), a segregation of certain characteristics is acceptable if it is compatible with the method of propagation of the variety. i.e. ~~(a)~~ ~~If the heredity of a clear-cut segregating characteristic is known, it is required to behave in the predicted manner.~~ ~~(b)~~ If the heredity of the characteristic is not known, it is treated in the same way as other cross-pollinated varieties, i.e. the tolerance is set by existing comparable varieties (see Chapter 6.3.2~~5~~). 108. ~~(c)~~ For setting a tolerance for the occurrence of inbred parent plants, the same considerations apply as for a single-cross hybrid variety (see Chapter 6.3.3.2).	*Editorial*
Renumber paragraphs to introduce paragraphs 25, 48 and 61	*Editorial*

[End of document]