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INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

GENEVA

DRAFT

Associated Document
to the
General Introduction to the Examination
of Distinctness, Uniformity and Stability and the
Development of Harmonized Descriptions of New Varieties of Plants (document TG/1/3)

DOCUMENT TGP/11

"EXAMINING STABILITY"

Document prepared by the Office of the Union

to be considered by

the Council at its forty-fifth ordinary session,
to be held in Geneva, on October 20, 2011

1. INTRODUCTION

The General Introduction (document TG/1/3) explains the following with regard to Stability:

"7.1 Requirements of the UPOV Convention

Article 6 (1)(d) of the 1961/1972 and 1978 Acts of the UPOV Convention require that a variety 'must be stable in its essential characteristics, that is to say, it must remain true to its description after repeated reproduction or propagation or, where the breeder has defined a particular cycle of reproduction or multiplication, at the end of each cycle.' Similarly, Article 9 of the 1991 Act of the UPOV Convention requires that a variety 'shall be deemed to be stable if its relevant characteristics remain unchanged after repeated propagation or, in the case of a particular cycle of propagation, at the end of each such cycle.'

"7.2 Relevant / Essential Characteristics

The relevant or essential characteristics include at least all characteristics used for the examination of DUS or included in the variety description established at the date of grant of protection of that variety. Therefore, all obvious characteristics may be considered, irrespective of whether they appear in the Test Guidelines or not."

Thus it is clear that in the context of the UPOV Convention, references to Stability and its examination refer to the stability **of the variety,** after repeated propagation. Differences in the expression of a characteristic that occur on a part of the plant are to be considered with regard to uniformity, and not stability. This is outlined in document TGP/10/1 Sections 4.2.2.4 and 4.2.2.3.

2. EXAMINATION OF STABILITY

2.1 Nature of stability and its connection with uniformity

2.1.1 The General Introduction explains the following with regard to the examination of Stability:

"7.3.1.1 In practice, it is not usual to perform tests of stability that produce results as certain as those of the testing of distinctness and uniformity. However, experience has demonstrated that, for many types of variety, when a variety has been shown to be uniform, it can also be considered to be stable. Furthermore, if the variety is not stable, material produced will not conform to the characteristics of the variety, and where the breeder is unable to provide material conforming to the characteristics of the variety, the breeder's right may be cancelled.

"7.3.1.2 Where appropriate, or in cases of doubt, stability may be tested, either by growing a further generation, or by testing a new seed or plant stock to ensure that it exhibits the same characteristics as those shown by the previous material supplied. Further guidance on the examination of stability is considered in document TGP/11, 'Examining Stability'."

The purpose of document TGP/11, therefore, is to provide guidance, in the form of illustrative examples, on the examination of stability where this is considered suitable by the examination authority.

2.1.2 The stability of the candidate variety depends on the maintenance breeding effort in order to ensure that the variety will remain in conformity to the type and uniform. Samples resulting from repeated propagation of the candidate variety should be uniform and conform to the initial sample for all relevant characteristics.

2.2 Practical aspects to consider for the examination of stability

Where considered appropriate, the testing of stability should be conducted by either: (i) testing a new seed or plant stock, or (ii) testing a seed or plant stock obtained from propagation of the initial sample. In the case of (i), the examination authority should request the applicant to provide the sample of plant material to be tested for stability. In the case of (ii) the propagation cycle can be undertaken by the examination authority as long as it can ensure the safety and reliability of the propagation procedure; this should nonetheless be an exceptional situation.

2.3 Examples of examining for stability

2.3.1 The examples in the following Annexes illustrate possible approaches of how individual authorities address the examination of stability. These examples relate to situations where the examination authority has chosen to ascertain whether the stability criterion has been met by the candidate varieties as a matter of routine; no examples are provided though for cases of doubt concerning the stability of a particular variety.

[Annex I follows]

ANNEX I

Annex I Examination based on samples submitted by the breeder

I.1 *Phaseolus vulgaris* in Australia: Two seed samples of the candidate variety, from different cycles of propagation, are requested from the breeder and sown in the DUS trial side by side. For testing stability, the second sample of the candidate variety is compared to the first sample to establish that there is no difference between them in their relevant characteristics. The variety is considered to be stable if the two samples conform with each other.

I.2 A similar approach as under I.1 is used for hybrid varieties where the stability is tested on the hybrid itself. The breeder is requested to submit samples from different cycles of propagation, which are compared side-by-side in the field.

I.3 *Malus domestica* mutation varieties in New Zealand: Five trees are required to be supplied on MM106 rootstock for the examination of distinctness. The trees should be from at least the second propagation cycle and not from budwood harvested from the original mutation. It is recommended that the second propagation cycle trees have no more than 20% of the trees coming from any single stick of budwood.

In addition to the five trees supplied for the examination of distinctness, a second set of test trees are required for the assessment of uniformity and stability. The minimum number of trees required is 25 trees on MM106, or 30 trees on M9. The trees can be located on a site selected by the breeder or agent and should be established at the same time as trees supplied for the examination of distinctness. These trees should be at least second propagation cycle trees and be of the same standard and quality as those used for the testing of distinctness.

[Annex II follows]

ANNEX II

Annex II *Examination based on a sample harvested by the authority from the initial sample*

II.1 *Zea mays* parental lines in France: seed from the initial sample of the candidate variety is to be sown alongside the subsequent generation of seed of the candidate variety.

(a) When the technical examination is carried out as a two-year DUS test by the examination authority, a part of the submitted seed sample is sown in a specific trial to produce selfings. In the second year the seeds harvested on six selfings are sown in ear-rows besides a two-row plot sown with seeds of the submitted sample. All the characteristics are checked on the ear-rows in comparison with the plot. The candidate parent line variety is declared stable if at least 5 ear-rows conform to the plot.

(b) When the technical examination is carried out partly using the applicant's results (one year of testing for distinctness and uniformity carried out by the applicant) the applicant is asked to provide to the examination authority seeds of the candidate variety in the year "n-1" (the year in which the applicant carries out half of the test for distinctness and uniformity) and 6 non-thrashed ears of the candidate variety are sent to the examination authority in year "n". The ears are threshed by the examination authority and sown in ear-rows close by a plot sown with seeds of the submitted seed sample. All the characteristics are checked on the ear-rows in comparison with the plot. The candidate parent line variety is declared stable if at least 5 ear-rows conform to the plot. The only objective is to look at the conformity of the two generations in their relevant characteristics.

II.2 In the case of maize hybrids in France, the DUS examination on hybrids involves the examination of the hybrid by examination of the parent lines and the parent formula. The stability of the hybrid is based on the stability of the parental lines, as described in II.1, and the verification of the formula on the basis of the initial sample of the hybrid.

[End of Annex II and of document]