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INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS
GENEVA

TECHNICAL WORKING PARTY FOR AGRICULTURAL CROPS

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SUMMARY OF REVISIONS PROPOSED FOR
DOCUMENT TGP/7 "DEVELOPMENT OF TEST GUIDELINES"

Document prepared by the Office of the Union

1. The purpose of this document is to set out proposals to be considered for the revision of document TGP/7 "Development of Test Guidelines".

2. The following abbreviations are used in this document:

CAJ:	Administrative and Legal Committee
TC:	Technical Committee
TC-EDC:	Enlarged Editorial Committee
TWA:	Technical Working Party for Agricultural Crops
TWC:	Technical Working Party on Automation and Computer Programs
TWF:	Technical Working Party for Fruit Crops
TWO:	Technical Working Party for Ornamental Plants and Forest Trees
TWPs:	Technical Working Parties
TWV:	Technical Working Party for Vegetables

3. The structure of this document is as follows:

- I. PROPOSALS ON WHICH THE TECHNICAL COMMITTEE HAS REACHED A CONCLUSION
- II. PROPOSALS TO BE CONSIDERED BY THE TECHNICAL WORKING PARTIES IN 2011

Annex I: Number of plants to be considered for the assessment of Distinctness

Annex II: Background information concerning "Guidance for method of observation"

I. PROPOSALS ON WHICH THE TECHNICAL COMMITTEE HAS REACHED A CONCLUSION

Number of plants to be examined (for distinctness)

4. The Technical Committee (TC) agreed that the wording in Chapter 4.1.4 of Test Guidelines in document TGP/7/2 should be amended according to the following models (see document TC/47/26 “Report on the Conclusions”, paragraph 65):

Alternative 1: “Unless otherwise indicated, for the purposes of distinctness, all observations on single plants should be made on { x } plants or parts taken from each of { x } plants and any other observations made on all plants in the test, disregarding any off-type plants.”

Alternative 2: “Unless otherwise indicated, for the purposes of distinctness, all observations on single plants should be made on { x } plants or parts taken from each of { x } plants and any other observations made on all plants in the test, disregarding any off-type plants. In the case of observations of parts taken from single plants, the number of parts to be taken from each of the plants should be { y }.”

5. The TC agreed that the wording of document TGP/7/2, as adopted by the Council at its forty-fourth ordinary session, held in Geneva on October 21, 2010, with regard to Chapter 4.1.4 should not be followed in the Test Guidelines to be adopted at its forty-seventh session. It agreed that the Test Guidelines to be adopted by the TC should incorporate the amended wording for Chapter 4.1.4, as presented in paragraph 4 above.

6. The TC noted that the Council, at its forty-fifth ordinary session to be held on October 20, 2011, would need to adopt the revised text for document TGP/7 before the Test Guidelines could be adopted. Therefore, it agreed to adopt the Test Guidelines subject to the Council adopting the necessary revision to document TGP/7 (see document TC/47/26 “Report on the Conclusions”, paragraphs 98 and 99).

Coverage of ornamental varieties in Test Guidelines

7. The TC, at its forty-seventh session, held in Geneva from April 4 to 6, 2011, agreed to the addition of new Additional Standard Wording (ASW) for Chapter 1 of the Test Guidelines in a future revision of TGP/7 “Development of Test Guidelines”, as follows:

“In the case of [ornamental] [fruit] [industrial] [vegetable] [agricultural] [etc.] varieties, in particular, it may be necessary to use additional characteristics or additional states of expression to those included in the Table of Characteristics in order to examine Distinctness, Uniformity and Stability.”

with an explanation in document TGP/7 that such wording should not lead to any particular conclusions as to whether other types of varieties should or should not be covered by the development of separate Test Guidelines, since that would need to be considered on a case-by-case basis (see document TC/47/26 “Report on the Conclusions”, paragraph 54).

Applications for varieties with low germination

8. The TC agreed that, for the time-being, no revisions should be considered for document TGP/7 in relation to applications for varieties with low germination (see document TC/47/26 “Report on the Conclusions”, paragraph 58).

Selection of asterisked characteristics

9. The TC agreed that the final sentence of document TGP/7/2, GN 13.1 “Asterisked characteristics”, Section 1.2, should be amended to read “The number of asterisked characteristics should, therefore, be determined by the characteristics which are required to achieve useful internationally harmonized variety descriptions.”. On the basis of that change, it agreed that the guidance provided in document TGP/7, GN 13, on the selection of asterisked characteristics was appropriate and sufficient, and that it would only be necessary to ensure that the guidance is followed in the development of Test Guidelines (see document TC/47/26 “Report on the Conclusions”, paragraph 59).

Indication of grouping characteristics

10. The TC agreed that it would not be appropriate to revise document TGP/7 in order to include an indication of grouping characteristics in the Table of Characteristics in the UPOV Test Guidelines (see document TC/47/26 “Report on the Conclusions”, paragraph 60).

Standard references in the Technical Questionnaire

11. The TC agreed to delay consideration of the approach for providing standard references for the UPOV Technical Questionnaire and for the characteristics in the Test Guidelines with a view to a future revision of document TGP/7, pending the outcome of work on the Linear Blank Form for PBR Applications (see document TC/47/26 “Report on the Conclusions”, paragraph 68).

II PROPOSALS TO BE CONSIDERED BY THE TECHNICAL WORKING PARTIES IN 2011

Quantity of plant material required

- see document TWA/40/19 “Revision of document TGP/7: Quantity of plant material required”

Guidance on the number of plants to be examined (for distinctness)

12. The TC, at its forty-seventh session, agreed that Mrs. Beate Rücker (Germany), should be invited to draft suitable guidance on the number of plants to be examined for distinctness for inclusion in a future revision of document TGP/7 with regard to the following (see document TC/47/26 “Report on the Conclusions”, paragraph 66):

- (a) the selection of plants to be examined for distinctness from within the trial;

- (b) the minimum number of plants of candidate varieties required to be able complete the trial, i.e. the minimum number of plants required to examine distinctness, uniformity and stability; and
- (c) the number of plants required for varieties of common knowledge to be compared with candidate varieties for the purpose of distinctness.

13. Annex I to this document contains the draft guidance on the number of plants to be considered for the assessment of distinctness, prepared by Mrs. Beate Rucker, Germany.

Example varieties

- see document TWA/40/18 “Revision of document TGP/7: Example varieties”

Providing photographs with the Technical Questionnaire

- see document TWA/40/12 “Revision of document TGP/7: Providing photographs with the Technical Questionnaire”

Guidance for method of observation

14. The TC agreed that document TGP/7/2, GN 25 “Recommendations for conducting the examination” should be extended to provide guidance, by means of illustrative examples, on the appropriate type of observation for characteristics such as dates (e.g. time of flowering) and counts (e.g. number of leaf lobes), on the basis of the examples provided in Annex II to this document and the comments made on those examples by the TWPs in 2010 (see document TC/47/26 “Report on the Conclusions”, paragraph 61).

- the Office of the Union to prepare a document

[Annex I follows]

NUMBER OF PLANTS TO BE CONSIDERED FOR THE ASSESSMENT OF DISTINCTNESS

Document prepared by an expert from Germany

The TC, at its forty-seventh session, agreed that suitable guidance should be drafted for inclusion in a future revision of document TGP/7 with regard to the following:

- (a) the selection of plants to be examined for distinctness from within the trial;
- (b) the minimum number of plants of candidate varieties required to be able to complete the trial, i.e. the minimum number of plants required to examine distinctness, uniformity and stability; and
- (c) the number of plants required for varieties of common knowledge to be compared with candidate varieties for the purpose of distinctness.

Draft for a guidance note to be included in TGP/7 TG Template, Section 4.1.4

General considerations

It is essential for the definition of a variety and the assessment of distinctness, uniformity and stability to identify and to observe the *typical* expression of characteristics in a variety. Several aspects have to be taken into account in order to observe the *typical* expression of characteristics of varieties, e.g.:

- plant material which is representative for the variety
- performance of tests under appropriate environmental conditions
- suitable growing conditions, including sufficient plot size to prevent observations to be biased by boundary or neighbourhood effects
- observed plants to be vigorous, healthy and well developed
- appropriate description of the expression of characteristics under consideration of variation within and between varieties (according to Test Guidelines)

Provided that these conditions are met, the *typical* expression is considered to be the mean expression under the specific environmental conditions. It incorporates possible variation between individual plants which may be caused by environmental and genetic factors.

The number of plants is specified in the Test Guidelines in relation to

- (a) the number of plants in the trial (Annex 1, Section 3.4)
- (b) the number of plants/parts of plants to be examined for the assessment of distinctness (Annex 1, Section 4.1.4)
- (c) the number of plants/parts of plants for the assessment of uniformity (Annex 1, Section 4.2)

The number of plants in the trial is determined by (I.) the necessary plot size in order to ensure a typical expression of the characteristics in the varieties, (II.) the number of plants to be observed for the definition of the typical expression taking into account variation between plants (within the limits of a uniform variety) and (III.) the number of plants to be observed for the assessment of uniformity under consideration of the genetic structure of the variety.

The number of plants in the trial has to take into account all requirements for the assessment of D, U and S. But, if uniformity has not to be observed for similar varieties of common knowledge (reference varieties), it can be considered to include in the trial a lower number of plants for the reference varieties.

It is essential for the selection of plants to be examined for distinctness that condition (I.) is fulfilled in the trial and the expression of characteristics in the varieties is *typical* under the given environmental conditions. In case of observations on the plot as a whole, the selection of plants for the assessment of distinctness is not critical, provided that off-type plants are excluded. In case of observations of individual plants for the assessment of distinctness the test guidelines should specify the minimum number of plants to be observed. This number has to be appropriate to observe the *typical* expression of the variety under consideration of possible variation between plants.

Any comparison for the assessment of distinctness has to be based on representative data of all varieties – candidate variety and reference varieties. If two varieties are very similar it is of particular importance to observe both varieties with the same high precision. The above mentioned conditions (I.) and (II.) are the same. This implies that in case of observations of individual plants for the assessment of distinctness the minimum number of plants specified in the test guidelines applies to candidate varieties and reference varieties as well.

As explained before, the total number of plants in the growing trial must also take into account the conditions for the assessment of uniformity. In many species the sample size for uniformity will be higher than defined by condition (II.). Depending on the species, the total number of plants in the trial will be defined by condition (I.) or (III.).

In relation to the assessment of stability, the same principles as for distinctness should be applied.

Species with a very low number of plants in the trial (e.g. fruit trees)

The appropriate sample size for the assessment of distinctness should be defined on a crop by crop basis. Even if the variation within varieties is very low and the characteristics are very stable, a number of less than 3 plants could be critical for a comparison of two very similar varieties. If there are only one or two trees, it might not be possible to evaluate differences between the two individuals and to identify any unexpected developments in one or both plants. In case of two plants it is impossible to declare one plant as an off-type if there is no additional information about this characteristic of the variety. The minimum number has to be defined according to the characteristics with the highest probability for variation between plants, which is relevant for quantitative and pseudo-qualitative characteristics, in particular.

[Annex II follows]

ANNEX II

BACKGROUND INFORMATION CONCERNING:
GUIDANCE FOR METHOD OF OBSERVATION*BACKGROUND*

1. The Technical Committee (TC), at its forty-sixth session, held in Geneva from March 22 to 24, 2010 agreed that, in a future revision of TGP/7 (document TGP/7/3), consideration should be given to providing guidance on the indication of observation by Measurement (M) for characteristics such as dates (e.g. time of flowering) and counts (e.g. number of leaf lobes).

Document TGP/9 “Examining Distinctness” explains the following with regard to method of observation:

“4.2 Method of observation (visual or measurement)”

“The expression of characteristics can be observed visually (V) or by measurement (M).

“4.2.1 Visual observation (V)”

“4.2.1.1 “Visual” observation (V) is an observation made on the basis of the expert’s judgement. For the purposes of this document, “visual” observation refers to the sensory observations of the experts and, therefore, also includes smell, taste and touch. Visual observation includes observations where the expert uses reference points (e.g. diagrams, example varieties, side-by-side comparison) or non-linear charts (e.g. color charts).

[...]

4.2.2 Measurement (M)

Measurement (M) is an objective observation against a calibrated, linear scale e.g. using a ruler, weighing scales, colorimeter, dates, counts, etc.

2. The following examples are intended to illustrate the ways of considering the method of observation for characteristics such as time of flowering and counts.

Example 1: Time of Flowering

Time of flowering		
QN	early	3
	medium	5
	late	7

Scenario A (Explanation: the time of flowering is when 50% of plants have emitted the stigma in the main panicle)

3. The DUS trial is visited on various dates to assess whether each variety has reached the time of flowering. The assessment of whether 50% of plants have emitted the stigma in the main panicle is made by counting the number of plants that have emitted their stigmas to determine the percentage, or by an overall assessment of the percentage.

4. In this case, the method of observation would be measurement (M), because the determination of the state of expression will be according to the date (= measurement on a time scale) at which a variety was found to have reached the time of flowering. A date is recorded for each variety, which is transformed into notes after assessment of all varieties.

Scenario B (Explanation: the time of flowering is assessed on a single visit)

5. The DUS trial is visited on one or more occasions to assess the time of flowering by reference to example varieties.

6. In this scenario, the time of flowering is a visual (V) observation because an overall visual observation is made as to the time of flowering for a particular variety by reference to the state of flowering of example varieties, without reference to a date of visit. A note is recorded for each variety in relation to the variation between varieties (e.g. early, medium, late).

Example 2: Number of Leaf Lobes

Leaf blade: number of lobes	
none	1
three	2
five	3
seven	4

7. The number of lobes is observed by an overall observation, i.e. it is not necessary to “consciously” count the number of lobes, because the numbers are very small. However, because the characteristic relates to a number, it should be indicated as a measurement (M).

COMMENTS BY THE TECHNICAL WORKING PARTIES AT THEIR SESSIONS IN 2010

8. At its thirty-ninth session, held in Osijek, Croatia, from May 24 to 28, 2010, the Technical Working Party for Agricultural Crops (TWA) considered document TWA/39/17 (see document TWA/39/27 “Report”, paragraphs 53 and 54). The TWA concluded that the important difference between Scenario A and B in Example 1 (above) was that, in Scenario B, the assessment was made by reference to example varieties, instead of recording the date and suggested that the document be modified to clarify that. The relevant paragraphs of this document have been modified in that regard, compared to document TWA/39/17.

9. The TWA also agreed that the guidance on this matter should be consistent with the recommendations provided in document TGP/8, in particular in section “Data to be recorded”, to be developed for a future revision of TGP/8 - PART I.

10. The Technical Working Party on Automation and Computer Programs (TWC), at its twenty-eighth session, held in Angers, France, from June 29 to July 2, 2010, noted the explanation set out above (see document TWC/28/36 “Report”, paragraph 37). The Technical Working Party for Vegetables (TWV), at its forty-fourth session, held in Veliko Tarnovo, Bulgaria, from July 5 to 9, 2010, noted the comments made by the TWA (see document TWV/44/34 “Report”, paragraph 46).

11. The TWO, at its forty-third session, held in Cuernavaca, Morelos State, Mexico, from September 20 to 24, 2010, noted the explanations provided in document TWO/43/17 (see document TWO/43/29 Rev. “Report”, paragraph 40).

12. The TWF at its forty-first session, held in Cuernavaca, Morelos State, Mexico, from September 27 to October 1, 2010, noted the explanations provided in document TWF/41/17. The TWF observed that, for characteristics indicating a “number” to be observed, the method of observation to be indicated would depend on the type of record: if the record was a number obtained by counting, the characteristic should be indicated as “M”, but if the record was a note corresponding to, e.g. few, medium, many etc. (such as for number of lenticels), the characteristic should be indicated as “V” (see document TWF/41/30 Rev. “Report”, paragraph 40).

[End of Annex II and of document]