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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/7

“DEVELOPMENT OF TEST GUIDELINES”

Document prepared by the Office of the Union

to be considered by the

Technical Working Party for Agricultural Crops at its thirty-second session, to be held in Tsukuba, Japan from September 8 to 12, 2003

Technical Working Party on Automation and Computer Programs at its twenty-first session, to be held in Tjele, Denmark from June 10 to 13, 2003

Technical Working Party for Fruit Crops at its thirty-fourth session to be held in Niagara Falls, Canada from September 29 to October 3, 2003

The Technical Working Party for Ornamental Plants and Forest Trees at its thirty-sixth session to be held in Niagara Falls, Canada from September 22 to 26, 2003

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SECTION 1: INTRODUCTION

1.1 UPOV Test Guidelines as the Basis for the DUS Test

The General Introduction (Chapter 2, section 2.2.1) states that “Where UPOV has established specific Test Guidelines for a particular species, or other group(s) of varieties, these represent an agreed and harmonized approach for the examination of new varieties and, in conjunction with the basic principles contained in the General Introduction, should form the basis of the DUS test.” It further states in Chapter 8, section 8.2.1, that “The individual Test Guidelines are prepared or, where appropriate, revised according to the procedures set out in document TGP/7, Development of Test Guidelines”. Thus, the purpose of this document is to provide guidance on the development of these UPOV Test Guidelines (“Test Guidelines”).

1.2 Individual Authorities’ Test Guidelines

The General Introduction also states that “Where UPOV has not established individual Test Guidelines relevant to the variety to be examined, the examination should be carried out in accordance with the principles in this document and, in particular, the recommendations contained in Chapter 9, Conduct of DUS Testing in the Absence of Test Guidelines. In particular, the recommendations in Chapter 9 are based on the approach whereby, in the absence of Test Guidelines, the DUS examiner proceeds in the same general way as if developing new Test Guidelines.” Thus, in the absence of Test Guidelines, this document is also aimed at the drafters of individual authorities’ test guidelines.

1.3 Structure of TGP/7

This document is structured in the following way:

Section 1: Introduction (this section)

Section 2: Procedures for the Introduction and Revision of Test Guidelines

Section 3: Guidance for Drafting Test Guidelines

3.1 The TG Template

This section introduces the “TG Template” which provides the basic Test Guidelines structure and also the *universal* standard wording which is **currently considered^a** to be *appropriate for all Test Guidelines*. The TG Template itself is provided as Annex 1 of this document.

3.2 Additional Standard Wording (ASW) for the TG Template

The “TG Template” contains the *universal* standard wording which is **currently considered^a** to be appropriate for all Test Guidelines. However, this section explains that UPOV has developed *additional* standard wording (ASW) which should be used, where appropriate, for the Test Guidelines concerned. The additional standard wording is provided in Annex 2 of this document.

3.3 Guidance Notes (GN) for the TG Template

There are many aspects of the Test Guidelines where standard wording cannot be developed and where the individual drafter's experience and knowledge are the only basis for drafting the Test Guidelines. The purpose of this section is to provide guidance notes on how to proceed in a harmonized way for such aspects. These guidance notes are presented in Annex 3 of this document.

Section 4: Presentation of Characteristics According to Types of Expression

This section provides guidance on categorizing characteristics into the appropriate type of expression, i.e. qualitative, quantitative and pseudo-qualitative. It also provides examples of states of expression for some commonly used characteristics. This section also makes reference to a database of **some selected^b** characteristics with their states of expression, which have already been used and accepted in previous Test Guidelines and which is presented as Annex 4.

Section 5: Development of individual authority Test Guidelines from UPOV Test Guidelines^c

Annex 1: The TG Template

Annex 2: Additional Standard Wording (ASW) for the TG Template

Annex 3: Guidance Notes (GN) for the TG Template

Annex 4: Database of Approved Characteristics

SECTION 2: PROCEDURE FOR THE INTRODUCTION AND REVISION OF UPOV TEST GUIDELINES

2.1 Introduction

2.1.1 The General Introduction (Chapter 1, Section 1.4) states that “The individual Test Guidelines are prepared by the appropriate Technical Working Party, which is composed of government-appointed experts from each member of the Union with invited experts from other interested States and observer organizations. The main international non-governmental organizations in the field of plant breeding and the seed and plant industries are given the opportunity to comment on the drafts of Test Guidelines before their adoption, thus ensuring that the knowledge and experience of breeders and the seed and plant industries is taken into account. Once developed, the Test Guidelines are submitted for approval by the Technical Committee”.

2.1.2 The General Introduction further clarifies (Chapter 8, Section 8.2.1) that “The individual Test Guidelines are prepared or, where appropriate, revised according to the procedures set out in document TGP/7, Development of Test Guidelines. Once prepared by the appropriate Technical Working Party for the species concerned, a draft is sent for comments to the relevant international professional organizations and institutions working in the field of the species concerned. On the basis of the comments received, the draft Test Guidelines are finalized by the Technical Working Party concerned and presented to the Technical Committee for final adoption and publication”. To facilitate this process, the Technical Committee has established the Editorial Committee (TC-EDC) which examines drafts of all Test Guidelines, produced by the Technical Working Parties, and makes recommendations before these are put forward for adoption by the Technical Committee.^a

2.1.3 Transparency and Responsibility

This section has been developed in recognition of the need to ensure that the procedure for the introduction and revision of Test Guidelines is transparent and to clarify responsibility for each step in the procedure.

2.1.4 Leading Expert(s)

The procedure recognizes that the drafting of Test Guidelines is led by an expert or experts (the “leading expert(s)”)^b from within one of the UPOV Technical Working Parties (“the TWPs”).

2.1.5 Interested Experts

The leading expert(s) drafts(draft) the Test Guidelines in close cooperation with all those members of the TWPs which have expressed an interest (the “interested experts”), to ensure that the full extent of knowledge and expertise is reflected in the draft.

2.1.6 Consultation

2.1.6.1 The drafts of Test Guidelines, prepared by the leading expert(s) in conjunction with the interested experts, are the subject of consultation at the relevant TWP meetings before submission to the Technical Committee for approval. This consultation includes the main international non-governmental organizations in the field of plant breeding and genetic

resource management, by means of their invitation to participate in the meetings of the relevant TWPs and Technical Committee as observers.

2.1.6.2 In addition, the relevant TWP may enhance the consultation of interested experts for certain Test Guidelines by the arrangement of Test Guidelines Subgroup meetings, to be held, for example, at UPOV Regional Technical Meetings.

2.2 Procedure for the Introduction and Revision of Test Guidelines

2.2.1 STEP 1 Proposals for the Commissioning of Work

The Technical Committee is responsible for the commissioning of any work on the introduction or revision of Test Guidelines. Proposals for the commissioning of work by the Technical Committee can be made:

- (a) by a UPOV body

Most Test Guidelines are commissioned on the basis of proposals from a TWP, but may also be proposed by the Technical Committee itself, the Council, the Consultative Committee or the Administrative and Legal Committee (hereinafter referred to as “the CAJ”).

- (b) directly to the Technical Committee by a member of the Union;

- (c) directly to the Technical Committee by an observer State or observer organization to the Technical Committee.

2.2.2 STEP 2 Approval of the Proposals

2.2.2.1 The purpose of Test Guidelines is to elaborate certain of the principles contained in the General Introduction, and its associated TGP documents, into detailed practical guidance for the harmonized examination of DUS and, in particular, to identify appropriate characteristics for the examination of DUS and production of harmonized variety descriptions. In the case of species or crops which are only of interest at a national or local level and where international harmonization is not necessary, the development of Test Guidelines may be of low priority^b. For such situations, UPOV still provides effective guidance for developing a robust DUS examination by means of the General Introduction and, in particular, documents TGP/7, Development of Test Guidelines, which is aimed at drafters of both (UPOV) Test Guidelines and national test guidelines, and TGP/13, Guidance Notes for New Types and Species.

2.2.2.2 In recognition of the importance of international harmonization, the Technical Committee will take into account the following factors when considering and prioritizing the commissioning of Test Guidelines:

- (a) Total number of applications for plant breeders rights within the territories of the members of the Union.

The Technical Committee is unlikely to prioritize Test Guidelines where there are very few applications, unless certain other factors make this appropriate

e.g. it is known that there is an intensive breeding effort in progress at the international level (see (e)).

(b) Number of authorities receiving applications for the varieties which would be covered by the Test Guidelines.

In general, Test Guidelines where only one or two authorities are receiving applications would not **normally**^b be given a high priority.

(c) Number of foreign applications received by members of the Union.

A high level of foreign applications indicates that international harmonization is important.

(d) Economic importance of the crop/species.

(e) The level of breeding activity.

It may be important to know if the number of new varieties is likely to increase, or decrease significantly

(f) Any other factors considered relevant by the Technical Committee.

2.2.2.3 The proposer should provide as much information as possible concerning these factors.

2.2.3 STEP 3 Allocation of Drafting Work

2.2.3.1 The Technical Committee will decide which Technical Working Party or Parties should be responsible for the drafting of the Test Guidelines in question. In general, where the proposal is made by a TWP, the Technical Committee will commission the work from that same TWP, but it may decide to request the approval of another TWP before a draft is submitted for adoption.

2.2.3.2 In cases where more than one TWP has proposed the development of Test Guidelines with the same coverage, the Technical Committee will decide which TWP should be responsible for the drafting of the Test Guidelines. This will be decided on the basis of the level of expertise in the TWPs concerned. In such cases, the Technical Committee will request the approval of all other interested TWPs before a draft is submitted for adoption.

2.2.3.3 Information on proposals for the drafting of Test Guidelines by the TWPs is presented in document TC/[Session reference]/2.

2.2.4 STEP 4 Preparation of Draft Test Guidelines for the Technical Working Party

2.2.4.1 *The Leading Expert(s)*

The TWP will agree the leading expert(s) who will be responsible for preparing all drafts of the Test Guidelines until it is agreed by the TWP.

2.2.4.2 *The Subgroup of Interested Experts*

The TWP will establish a subgroup consisting of the leading expert(s) and the other interested experts wishing to participate in the drafting of the Test Guidelines in question.

2.2.4.3 *Preliminary Work on Draft Test Guidelines*

Pending the commissioning of the work by the Technical Committee, the TWP may establish the subgroup and preliminary work on the preparation of the Test Guidelines may commence.

2.2.4.4 *Preparation of the Draft(s) by the Leading Expert(s) with the Subgroup*

The leading expert(s) should, after consulting the members of the subgroup, establish a first draft. This draft is sent to the Office of the Union (Office), which will check that the draft conforms with the TG/Template (Annex 1) and, thereafter, produce a document for distribution to the members of the TWP(s) concerned for discussion at their session(s).^d In the case of Test Guidelines which have been considered by the relevant TWP(s) (Step 5) and where the responsible TWP has requested a revision and re-presentation of the draft, the leading expert(s) should, after consulting the members of the subgroup, establish a further draft for consideration at the TWP meeting in the manner explained above.

2.2.4.5 *Subgroup Meetings*

The relevant TWP may enhance the consultation of interested experts for certain Test Guidelines by the arrangement of Test Guidelines Subgroup meetings, to be held, for example, at UPOV Regional Technical Meetings.

2.2.4.6 *Exchange of Plant Material*

Where appropriate, the leading expert(s) may arrange an exchange of plant material of representative varieties in order to develop suitable grouping and asterisked characteristics.

2.2.5 STEP 5 Consideration of the Draft Test Guidelines by the Technical Working Parties

2.2.5.1 *Draft Test Guidelines developed by a single Technical Working Party*

2.2.5.1.1 The TWP decides if the draft is ready for submission to the Technical Committee (step 6) for adoption, or whether it should be revised and re-presented at a subsequent session of the TWP (step 4).

2.2.5.2 *Draft Test Guidelines developed jointly by more than one Technical Working Party*

Where more than one TWP is involved in drafting particular Test Guidelines, the leading TWP is the one from which the leading expert(s) derives(derive). The leading TWP will decide at what stage to send it to the other interested TWPs for comment. The comments from the other TWPs will be reported to the leading expert(s). The leading expert(s), in consultation with the other interested experts will then develop a revised draft for submission to all interested TWPs. Only when all interested TWPs have agreed will the draft be submitted to the Technical Committee.

2.2.5.3 Requirements for “final” draft Test Guidelines^e

The elements set out in this section only apply to those Test Guidelines which the TWP may decide are ready to submit to the Technical Committee (“final” draft Test Guidelines) and do not apply to Test Guidelines where further drafts are to be developed for discussion in subsequent sessions of the TWP. In order for the TWP to be able to agree to submit draft Test Guidelines to the Technical Committee, there are certain elements in their preparation which should, in general, be met. Thus, the TWP will, in general, only consider the submission of Test Guidelines to the Technical Committee where a “complete” draft has been issued to the members of the TWP concerned, by the Office of the Union, four weeks prior to the TWP session. The deadline for receipt of draft Test Guidelines from the leading expert(s), by the Office, in order to meet this deadline, is to be set by the Office in conjunction with the Chairperson of the TWP concerned. A draft would be considered to be “complete” if there was no missing information from any chapter of the Test Guidelines. Thus, it should include, for example, explanations of characteristics contained in the Table of Characteristics and an appropriate^b set of example varieties. Where the TWP accepts revisions to the “complete” draft at its session, the changes are to be specified and approved in a report of the meeting (i.e. the report on the conclusions or detailed report), and the Test Guidelines are submitted to the Technical Committee on this basis.^f

2.2.6 STEP 6 Submission of Draft Test Guidelines by the Technical Working Party

Once the TWP has agreed to submit particular draft Test Guidelines to the Technical Committee, the Office will prepare the necessary documents in all the UPOV languages. Where the TWP has specified revisions to be made to the draft prior to submission to the Technical Committee (which will be recorded in a report of the TWP session), the Office will, if necessary in consultation with the leading expert(s) and Chairperson of the TWP, be responsible for incorporating these revisions. Where the revisions requested by the TWP require further information to be provided to the Office by the leading expert(s), this should be provided within 6 weeks of the TWP session, or according to a deadline agreed by the chairperson of the TWP in conjunction with the Office.^g If specified by the TWP, this information must first be agreed by all interested experts. In general^b, if the leading expert(s) is(are) unable to provide the agreed information within the specified deadline, the Test Guidelines would be re-presented to the following TWP session (Step 4). After translation into all the UPOV languages, the Test Guidelines are issued, by the Office, to members of, and observers to, the Technical Committee. In general^b, the Test Guidelines are to be issued at least 4 weeks^h prior to the relevant session of the Technical Committee.^f

2.2.7 STEP 7 Consideration of Draft Test Guidelines by the Editorial Committee

2.2.7.1 The Editorial Committee (TC-EDC) has been established by the Technical Committee to examine drafts of all Test Guidelines, produced by the TWPs, before these are put forward for adoption by the Technical Committee. The role of the TC-EDC is to ensure consistency of the Test Guidelines with the requirements of document TGP/7, and to check the alignment of texts across all the official UPOV languages. Its membership is selected from within the membership of the Technical Committee, both to provide broad experience of the UPOV system and also to represent the UPOV languages – English, French, German and Spanish. The chairperson of the TC-EDC is provided by the UPOV Secretariat.ⁱ

2.2.7.2 The TC-EDC reviews the draft Test Guidelines, taking into account any specific instructions from the Technical Committee, and makes a recommendation on whether the Test Guidelines are suitable for adoption (step 8). It may make a proposal to the Technical Committee for adoption subject to amendments of an editorial nature, which it specifies.¹

2.2.7.3 If it considers that there are technical issues to be resolved, the TC-EDC may recommend that the Technical Committee:

(a) refer the Test Guidelines back to the TWP (step 4) or,

(b) adopt the Test Guidelines subject to further information being provided by the leading expert(s) with the agreement of all interested experts and the Chairman of the TWP concerned. The necessary information, agreed with all interested experts, should be provided to the Office of the Union within 3 months of the Technical Committee meeting, or before the subsequent session of the TWP concerned, whichever is the sooner. In those cases where the necessary information is not provided within this time, the Test Guidelines concerned will not be adopted and will be re-presented to the TWP concerned (step 4).^f

2.2.8 STEP 8 Adoption of Draft Test Guidelines by the Technical Committee

The Technical Committee will, on the basis of the recommendations of the TC-EDC, decide whether to adopt the Test Guidelines.

2.3 Procedure for the Partial Revision of Test Guidelines

2.3.1 In certain circumstances it may be appropriate to update only a specific part of the Test Guidelines without undertaking a review of the entire Test Guidelines, which would, for example, require an update of the Table of Characteristics.

2.3.2 This situation might apply, but is not restricted to, the following circumstances:

- (a) a need to update the example varieties in the Table of Characteristics;
- (b) a need to update certain characteristics.

2.3.3 In such circumstances, the procedure is the same as that set out in Section 2.2, except that the considerations will be restricted to the elements of the Test Guidelines being revised. In particular, the other factors included as (f) in Section 2.2.2.2 would include that the work involved in this kind of revision would be considerably less than a full revision. The Technical Committee will decide on the specific aspects of the Test Guidelines which are to be revised when it commissions the work (step 2).

2.4 Procedure for the Correction of Test Guidelines

Where appropriate, the Technical Committee may approve factual corrections to adopted Test Guidelines. These corrected Test Guidelines will be shown with “Corr.” after the TG reference.

2.5 Document References

2.5.1 TG Reference

All adopted Test Guidelines receive a reference constructed as follows:

TG / [sequential number allocated to the TG - fixed] / [version number – updated at adoption]
e.g. TG/100/6

2.5.2 Revision of Test Guidelines

Where existing Test Guidelines are to be revised, different circumstances can arise. For example, the revised Test Guidelines may be a straightforward replacement of the existing Test Guidelines or the original Test Guidelines may need to be split into two or more Test Guidelines. The document references for these two particular situations are explained below using the following starting point:

Coverage of Test Guidelines:	<i>Alpha L.</i>
Test Guidelines Reference:	TG/500/1
Technical Working Party:	TWX

2.5.2.1 *Replacement of Existing Test Guidelines*

In a case where TG/500/1 is being updated without any change to the coverage of the Test Guidelines, the document references would be, for example, as follows:

Draft to TWX (2005):	TG/500/2 proj.1
Draft to TWX (2006):	TG/500/2 proj.2
Draft to TWX Subgroup Meeting (2006) (e.g. at UPOV Regional Technical Meeting):	TG/500/2 proj.3
Draft to TWX (2007):	TG/500/2 proj.4
Draft to Technical Committee (2008):	TG/500/2 proj.5
Final adopted document:	TG/500/2

2.5.2.2 *Splitting of Existing Test Guidelines*

In a case where the existing Test Guidelines are to be split – for example, into *Alpha major* and *Alpha minor* - the Technical Committee will decide on which type retains the TG/500 reference. If *Alpha major* retains the reference TG/500, it will be handled in exactly the same way as in 2.5.2.1, i.e. it will become TG/500/2. *Alpha minor* will be handled as a new document of Test Guidelines according to 2.5.3 and will become TG/xxx/1.

2.5.3 Introduction of New Test Guidelines

2.5.3.1 This section explains how the document references are developed for draft Test Guidelines on the basis of the following example:

Coverage of Test Guidelines:	<i>Delta L.</i> (Common name: Greenplant)
Technical Working Party:	TWX

2.5.3.2 At the point of proposing/commissioning of draft Test Guidelines they are given a simple short reference by the TWP/Technical Committee based on the [Latin]¹ or common

name, according to which is considered the most appropriate reference. This reference is used only as a code and is based on the **[Latin]**^j or common name as a means of aiding recognition.

Example:

Draft to TWX (2005):	Delta proj.1
Draft to TWX (2006):	Delta proj.2
Draft to TWX Subgroup Meeting (2006) (e.g. at UPOV Regional Technical Meeting):	Delta proj.3
Draft to TWX (2007):	Delta proj.4
Draft to Technical Committee (2008):	Delta proj.5
Final adopted document:	TG/600/1

2.5.3.3 Thus, the progress of the document can be easily followed and versions can be produced for other TWPs and UPOV meetings and if the Test Guidelines are not put forward for adoption, the sequence of TG references is not affected.

2.5.4 Partial Revision of Test Guidelines

In the case of a Test Guidelines being only partly revised this would be indicated by the addition of “Rev.”

Example:

Draft to TWX (2005):	TG/500/2 Rev. proj.1
Draft to TWX (2006):	TG/500/2 Rev. proj.2
Draft to TWX Subgroup Meeting (2006) (e.g. at UPOV Regional Technical Meeting):	TG/500/2 Rev. proj.3
Draft to TWX (2007):	TG/500/2 Rev. proj.4
Draft to Technical Committee (2008):	TG/500/2 Rev. proj.5
Final adopted document:	TG/500/2 Rev.

2.5.5 Corrections to Test Guidelines

In the case of a correction to the Test Guidelines, this would be indicated by the addition of “Corr.”, “Corr. 2”, etc.

Example:

Starting version	TG/500/2
Corrected version	TG/500/2 Corr.

SECTION 3: GUIDANCE FOR DRAFTING TEST GUIDELINES

3.1 The TG Template

3.1.1 UPOV has developed a template (the “TG Template”) containing the universal standard wording which is appropriate for all UPOV Test Guidelines (“Test Guidelines”) and which is prepared in the appropriate format. The TG Template is presented in Annex 1 and should be used as the starting point for the development or revision of all Test Guidelines.

3.1.2 In addition to the TG Template, further guidance is provided for drafters of Test Guidelines on how to develop individual Test Guidelines from the TG Template. This is provided by means of additional standard wording (ASW) and guidance notes (GN) and indications are provided within the TG Template on where this further guidance is available (see Sections 3.2 and 3.3).

3.2 Additional Standard Wording (ASW) for the TG Template

3.2.1 As explained above, the TG Template contains the universal standard wording which is appropriate for all Test Guidelines. However, UPOV has developed additional standard wording which should be used, where appropriate, for the Test Guidelines concerned. For example, for Test Guidelines where the material is supplied in the form of seed, there is standard wording concerning the quality of the seed to be supplied. Of course, this standard wording for seed should not be included in Test Guidelines where, for example, the material is to be provided as tubers and for this reason such additional standard wording is not included in the TG Template. The additional standard wording is presented in Annex 2, Additional Standard Wording (ASW) for the TG Template.

3.2.2 Where such additional standard wording is available, an insert is highlighted in the TG Template at the appropriate location, e.g.

{ **ASW 1** (TG Template: Section 2.3) – seed quality requirements }

3.3 Guidance Notes (GN) for the TG Template

3.3.1 There are many aspects of the Test Guidelines where standard wording cannot be developed and where the individual drafter’s experience and knowledge are the only basis for drafting the Test Guidelines. In particular, this includes the identification of characteristics and selection of example varieties. In such situations general guidance on how to proceed in a harmonized way, in line with the experience accumulated by UPOV through the crop experts, is provided by a series of guidance notes presented in Annex 3, Guidance Notes (GN) for the TG Template.

3.3.2 Where such guidance is available for drafters, an insert is highlighted in the TG Template at the appropriate location, e.g.

{ **GN 5** (TG Template: Section 1.1) – Subject of the Test Guidelines: Family Name }

SECTION 4: PRESENTATION OF CHARACTERISTICS ACCORDING TO THEIR TYPE OF EXPRESSION

4.1 Introduction

The General Introduction (Chapter 4, Section 4.3) states that “To enable varieties to be tested and a variety description to be established, the range of expression of each characteristic in the Test Guidelines is divided into a number of states for the purpose of description, and the wording of each state is attributed a numerical ‘Note.’ The division into states of expression is influenced by the type of expression of the characteristic ...” The General Introduction establishes that there are three basic types of expression of characteristic, namely, qualitative, quantitative and pseudo-qualitative. This section provides guidance on categorizing characteristics into the appropriate type of expression, i.e. qualitative, quantitative and pseudo-qualitative. It also provides examples of states of expression for some commonly used characteristics.

4.2 The Collection of Approved Characteristics

4.2.1 Drafters of Test Guidelines may, in addition to the general recommendations in this section, also wish to refer to the collection of approved characteristics, with their states of expression, which have already been used and accepted in previous Test Guidelines. This is presented in Annex 3, Collection of Approved Characteristics.

4.2.2 Drafters are invited to search the collection of characteristics for the characteristic which they wish to use. If the appropriate characteristic, and its corresponding states of expression, are found this can be copied directly into the new Test Guidelines. However, it should be remembered that what may appear to be very similar characteristics in different types of plant, or different organs of the same plant, may in fact be under different types of genetic control. Thus, for example, in one type of plant, or one organ, the characteristic “shape” might be a qualitative characteristic e.g. straight (1), curved (2) but in another type of plant, or organ, it might be a quantitative characteristic e.g. straight or slightly curved (1), moderately curved (2), strongly curved (3).

4.2.3 In cases where the required characteristic is not present in the database, the remainder of this section provides further guidance.

4.3 Assessing the Type of Expression of a Characteristic

4.3.1 As explained in section 4.2.2, whether the expression of a characteristic is qualitative, quantitative or pseudo-qualitative will depend on the genetic control of the characteristic.

4.3.2 When deciding on characteristics and their states of expression to be used for plant variety testing, it is important always to first observe the plant, note down the most appropriate wording, compare the wording with examples under the different categories, and to then decide whether the wording is suitable, or whether a different wording should be chosen. Throughout the process, the applicability of the wording to the particular situation in the given plant group should be ensured. Test Guidelines are prepared to fit specific genera or

species and not the other way round. However, it is useful to have some harmonized principles to ensure that similar characteristics are treated in a similar fashion.

4.3.3 In the remainder of this section the different types of expression of characteristics and ways of presenting these in the Table of Characteristics are explained.

4.4 Qualitative characteristics

4.4.1 Explanation

The General Introduction states that “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. As a rule, the characteristics are not influenced by environment.”

4.4.2 Separating Qualitative Characteristics

4.4.2.1 The General Introduction states (Chapter 5, Section 5.3.3.2.1) that “In qualitative characteristics, the difference between two varieties may be considered clear if one or more characteristics 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”. These guidelines for distinctness are different from the approach for quantitative characteristics and pseudo-qualitative characteristics and, therefore, it is very important that qualitative characteristics are correctly identified for the examination of distinctness.

4.4.2.2 As explained in section 4.2.2, whether the expression of a characteristic is qualitative, quantitative or pseudo-qualitative will depend on the genetic control of the characteristic.

4.4.2.3 The relative clarity of the guidelines on distinctness for qualitative characteristics means that it can be useful to seek to identify all qualitative characteristics, even where these might be contained within a wider range of expression. For example, in cases where there is discontinuous separation between complete absence and different degrees of presence the characteristic should be split into a qualitative characteristic with the states “absent (1)” and “present (9)” and a quantitative characteristic with the appropriate notes for degrees of presence (see Section 3). In such cases, it is very important that the absent state has a discontinuous separation from the “weak” state, and that this is unlikely to be masked by environmental effects, to avoid incorrect decisions on distinctness.

4.4.2.4 In the case of pseudo-qualitative characteristics it may also be possible to split the characteristic into a qualitative characteristic and a quantitative or another pseudo-qualitative characteristic. For example, the pseudo-qualitative characteristic “color: white (1); light pink (2); medium pink (3); dark pink (4); light yellow (5); medium yellow (6); dark yellow (7)” might be split into the following characteristics:

Qualitative characteristic

1. Color: white (1); yellow (2); pink (3)

Quantitative characteristic

2. Yellow and pink varieties only

- Intensity of color: weak (3); medium (5); strong (7)

4.4.2.5 However, as explained above, it is very important that there is a discontinuous separation between, for example, white and light yellow. It would also be necessary to consider the likelihood of breeding techniques producing new types of varieties which would bridge the discontinuous separation.

4.4.3 Division of Range of Expression into States and Notes

4.4.3.1 General Rule

In general, the states of expression of qualitative characteristics are given consecutive numbers starting with Note 1 and often have no upper limit.

4.4.3.2 Exceptions to the General Rule

4.4.3.2.1 Ploidy

In the case of ploidy, to avoid confusion, the number of chromosome sets is accepted as the Note (e.g. diploid (2), tetraploid (4)).

4.4.3.2.2 Absence/Presence

In cases where there is discontinuous separation between complete absence and (different degrees of) presence, the characteristic should be split into a qualitative characteristic with the states:

absent (1) and
present (9)^a

and a quantitative characteristic with the appropriate notes for degrees of presence (see Section 4.5).

4.5 Quantitative characteristics

4.5.1 Explanation

The General Introduction states that “Quantitative characteristics are those where the expression covers the full range of variation from one extreme to the other. The expression can be recorded on a one-dimensional, continuous or discrete, linear scale. The range of expression is divided into a number of states 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.”

4.5.2 Separating Qualitative Characteristics

See Section 4.4.2

4.5.3 Division of Range of Expression into States and Notes

4.5.3.1 In the case of quantitative characteristics, it is first necessary to determine the appropriate range to describe the characteristic. In general, a standard 1-9 scale (see Section 4.5.4) is used for quantitative characteristics but, alternatively, a “condensed” range, comprising Notes 1 to 3, has also been accepted (see Section 4.5.5).

4.5.3.2 The various ranges are explained in the following sections:

4.5.4 The “1-9” scale

4.5.4.1 Introduction

4.5.4.1.1 As a general rule, states are formed in such a way that for the weak and strong expressions a reasonable word pair is chosen, for example:

weak/strong
short/long
small/large

4.5.4.1.2 These word pairs are given Notes 3 and 7 and the intermediate state Note 5. The remaining states of the scale using Notes 1 to 9 are formed according to the following examples:

<u>Note</u>	<u>State</u>
1	very weak (or: absent or very weak)
2	very weak to weak
3	weak
4	weak to medium
5	medium
6	medium to strong
7	strong
8	strong to very strong
9	very strong

<u>Note</u>	<u>State</u>
1	very small (or: absent or very small)
2	very small to small
3	small
4	small to medium
5	medium
6	medium to large
7	large
8	large to very large
9	very large

4.5.4.1.3 However, it is not necessary to present all the 9 states in the Table of Characteristics and the following abbreviated versions are, in general, more appropriate:

Standard Range Version 1	Standard Range Version 2	Standard Range Version 3	Standard Range Version 4
1 very weak (or: absent or very weak)	1 very weak (or: absent or very weak)	-	-
3 weak	3 weak	3 weak	3 weak
5 medium	5 medium	5 medium	5 medium
7 strong	7 strong	7 strong	7 strong
9 very strong	-	9 very strong	-

4.5.4.1.4 The full range of states is equally spaced along the total scale, with the “mid-point” (“medium”) state in the middle. The states 3, 5, 7 should, as a minimum, be indicated in the Test Guidelines, but if it is necessary to list example varieties for one or both extremes, then states 1 and/or 9 should also be indicated, as appropriate. Experts very seldom decide to list example varieties for even states, but in this case the full range of states, 1, 2, 3, 4, 5, 6, 7, 8, 9, is listed.

4.5.4.2 *Wording of States*

4.5.4.2.1 The “Typical Example” (e.g. weak/strong; short/long)

4.5.4.2.1.1 *Wording of uneven states*

In the typical example of a quantitative characteristic (see Section 3.4.1.2), states 3 and 7 are worded by using only the basic weak and strong expressions, e.g. “weak (3),” “strong (7),” or “weakly curved (3),” “strongly curved (7).” States 1 and 9 are worded by adding “very” to the wording of states 3 and 7 respectively, (“very weak (1),” “very strong (9)” or “very weakly curved (1),” “very strongly curved (9)”).

4.5.4.2.1.2 *Wording of even states*

Even states are seldom indicated in the Test Guidelines. However, when establishing the states of expression, the wording of the even states should always be considered in case it should be required. The even states are worded by combining the wording of the preceding and following states by using the word “to”, e.g. “very weak to weak (2)” (see Section 4.5.4.1.2).

4.5.4.2.2 Other examples

4.5.4.2.2.1 Quantitative characteristics do not always relate to the typical weak / strong scale. However, the same approach of describing the intensifying degrees, either side of the “mid-point” state 5, should be followed. It should be noted that state 5 is always the “mid-point” in the range and normally worded “medium” or “intermediate,” but may also be, for example, “moderately curved” or “moderately shorter” (see example 4 below) if this is the “mid-point” of the full range of expression. The following examples are provided to indicate the type of ranges for some quantitative characteristics.

State	Example 1 Size relative to:	Example 2 Angle:	Example 3 Position:	Example 4 Length in relation to:	Example 5 Shape:
1	very much smaller	very acute	at base	equal	
(2)	<i>(much smaller)</i>	<i>(very to moderately acute)</i>	<i>(one eighth from base)</i>	<i>(equal to slightly shorter)</i>	
3	moderately smaller	moderately acute	one quarter from base	slightly shorter	slightly indented
(4)	<i>(slightly smaller)</i>	<i>(moderately acute to right angle)</i>	<i>(three eighths from base)</i>	<i>(slightly shorter to moderately shorter)</i>	<i>(slightly indented to flat)</i>
5	same size	right angle	in middle	moderately shorter	flat
(6)	<i>(slightly larger)</i>	<i>(right angle to moderately obtuse)</i>	<i>(three eighths from apex)</i>	<i>(moderately shorter to much shorter)</i>	<i>(flat to slightly pointed)</i>
7	moderately larger	moderately obtuse	one quarter from apex end	much shorter	slightly pointed
(8)	<i>(much larger)</i>	<i>(moderately obtuse to very obtuse)</i>	<i>(one eighth from apex)</i>	<i>(much shorter to very much shorter)</i>	
9	very much larger	very obtuse	at apex	very much shorter	

4.5.4.2.2.2 The wording of the states should be mutually exclusive, to avoid confusion. Thus, in Example 1 above, state 3 should not read “smaller” because this term would apply to all states from 1 to 4. Similarly, in Example 2 it is necessary to word state 7 as “moderately obtuse” and not just “obtuse”—since all states 6 to 9 are obtuse..

4.5.5 The “condensed” range

4.5.5.1 Introduction

In addition to the presentation of quantitative characteristics in the 1-9 scale, a “condensed” range, comprising notes 1 to 3, has also been accepted for some^k quantitative characteristics. This condensed range was introduced for visually observed characteristics^k to address situations where it is only appropriate to divide the expression into three states. Two versions of the condensed range have been accepted as follows:

Condensed Range 1	
1	e.g. absent or very weak <i>(absent or very weakly expressed)</i>
2	weak <i>(weakly expressed)</i>
3	strong <i>(strongly expressed)</i>

Condensed Range 2	
1	e.g. absent or weak <i>(absent or weakly expressed)</i>
2	moderate (or medium) <i>(moderately expressed)</i>
3	strong <i>(strongly expressed)</i>

4.5.5.2 Wording of States

Whereas, in the wording of a state in the “1-9 scale” (see Section 4.5.4.2.2) the use of simple terms such as “smaller” or “acute” is often inappropriate, such simple terms are often appropriate in the condensed range (see Examples 1, 2 and 5 below), since they are mutually exclusive. However, it is also possible that different degrees of intensity (e.g. slightly, moderately etc.) can also be identified, in which case the use of simple terms such as “shorter” is inappropriate because they are not mutually exclusive (see Example 4 and Section 4.5.5.1).

State	Example 1 Size relative to:	Example 2 Angle:	Example 3 Position:	Example 4 Length in relation to:	Example 5 Shape:
1	smaller	acute	at base	equal	indented
2	same size	right angle	in middle	slightly shorter	flat
3	larger	obtuse	at apex	moderately shorter	pointed

4.5.6 Color

4.5.6.1 Different hues of color should never be presented as quantitative characteristics, even though they may *appear* to form a linear range with continuous variation, as in the following example:

Color: green (1), yellow green (2), green yellow (3), yellow (4)

4.5.6.2 Different intensities of the same color hue may be presented as quantitative characteristics if they fulfil the requirements for a quantitative characteristic. For example:

(a) Intensity of green color: light (3), medium (5), dark (7)

(b) Intensity of anthocyanin coloration: weak (3), medium (5), strong (7)

4.6 Pseudo-Qualitative characteristics

4.6.1 Explanation

The General Introduction states that “In the case of ‘pseudo-qualitative characteristics,’ the range of expression is at least partly continuous, but varies in more than one dimension (e.g. shape: ovate (1), elliptic (2), circular (3), obovate (4)) and cannot be adequately described by just defining two ends of a linear range. In a similar way to qualitative (discontinuous) characteristics – hence the term ‘pseudo-qualitative’ – each individual state of expression needs to be identified to adequately describe the range of the characteristic.”

4.6.2 Separating Qualitative Characteristics

See Section 4.4.2

4.6.3 Division of Range of Expression into States and Notes

4.6.3.1 Unless it is clear that no intermediates exist between states (i.e. they are qualitative characteristics—see Section 4.4.2) suitably worded intermediate states should be included. For example:

Qualitative characteristic

Color: green (1), yellow (2), red (3)

Pseudo-qualitative characteristic:

Color: green (1), yellow green (2), green yellow (3), yellow (4), orange (5), red (6)

4.6.3.2 Words such as “intermediate” should preferably not be used, and should definitely not be used more than once in a single characteristic:

Shape: round (1), elliptic (2), ovate (3)
Not: Shape: round (1), intermediate (2), elliptic (3), intermediate (4), ovate (5)

4.6.3.3 Where there are intermediate states, each degree of expression should have a qualifying adjective in order to make all states mutually exclusive. For example:

Color: light green (1), *medium green* (2), dark green (3), purple green (4)
Not: Color: light green (1), *green* (2), dark green (3), purple green (4)

4.6.3.4 Dimensions of plane shapes have been mathematically determined and the “medium” state does not need a qualifying adjective to make the states mutually exclusive.

Shape: broad elliptic (1), *elliptic* (2), narrow elliptic (3), ovate (4)
Not: Shape: broad elliptic (1), *medium elliptic* (2), narrow elliptic (3), ovate (4)

4.6.4 Individual and Combined States of Expression

4.6.4.1 *Explanation*

These are pseudo-qualitative characteristics containing two or more individual expressions and one or more combinations.

4.6.4.2 *Order of states*

The order of the states is such that the combinations are listed between the alternatives. For example:

Color of spots: only green (1); green and purple (2); only purple (3)

Type of mottling: only diffuse (1); diffuse and in patches (2); diffuse, in patches and linear bands (3); diffuse and in linear bands (4).

**[POSSIBLE NEW SECTION: DEVELOPMENT OF INDIVIDUAL AUTHORITY
TEST GUIDELINES FROM UPOV TEST GUIDELINES]^m**

ANNEX 1:
TG TEMPLATE

UPOV

TG/{xx}
ORIGINAL: {xx}
DATE: {xx}

INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS
GENEVA

DRAFT

{MAIN COMMON NAME}

([types of] *Latin^j name*)

{ GN 1 (Cover page) – *Latin^j name* }

GUIDELINES

FOR THE CONDUCT OF TESTS

FOR DISTINCTNESS, UNIFORMITY AND STABILITY

*to be considered by the
Technical Working Party for [xxx] at its [xxx] session,
to be held in [xxx] from [xxx]*

Alternative Names: *

<i>Latin^j</i>	<i>English</i>	<i>French</i>	<i>German</i>	<i>Spanish</i>
{ <i>Latin^j name(s)</i> }	{Common Name(s)} {Alt. Common Name(s)}	{Common Name(s)} {Alt. Common Name(s)}	{Common Name(s)} {Alt. Common Name(s)}	{Common Name(s)} {Alt. Common Name(s)}
{ <i>Alt Latin^j Name(s)</i> }				

The purposeⁿ of these guidelines (“Test Guidelines”) is to elaborate certain of the principles contained in the General Introduction, and its associated TGP documents, into detailed practical guidance for the harmonized examination of distinctness, uniformity and stability (DUS) and, in particular, to identify appropriate characteristics for the examination of DUS and production of harmonized variety descriptions.^f

* These names were correct at the time of the introduction of these Test Guidelines but may be revised or updated. [Readers are advised to consult the UPOV Code, which can be found on the UPOV Website (www.upov.int), for the latest information.]

ASSOCIATED DOCUMENTS

These guidelines (“**Test Guidelines**”) should be read in conjunction with document TG/1/3, “General Introduction to the Examination of Distinctness, Uniformity and Stability and the Development of Harmonized Descriptions of New Varieties of Plants” (hereinafter referred to as the “General Introduction”) and its associated “TGP” documents.

Other associated UPOV documents: { **GN2** (Cover page) – Associated Documents }

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1. Subject of these Test Guidelines

These Test Guidelines apply to all varieties of

- { GN 3 } (Section 1.1) – Subject of the Test Guidelines: More than one species}
- { GN 4 } (Section 1.1) – Subject of the Test Guidelines: Different types or groups within a species}
- { GN 5 } (Section 1.1) – Subject of the Test Guidelines: Family name}
- { GN 6 } (Section 1.1) – Guidance for New Types and Species}

2. Material Required

2.1 The competent authorities decide on the quantity and quality of the plant material required for testing the variety and when and where it is to be delivered. Applicants submitting material from a State other than that in which the testing takes place must ensure that all customs formalities and phytosanitary requirements are complied with.

2.2 The material is to be supplied in the form of {xx}.

2.3 The minimum quantity of plant material, to be supplied by the applicant, should be:

- { GN 7 } (Section 2.3) – quantity of plant material required }
- { ASW 1 } (Section 2.3) – seed quality requirements }

2.4 The plant material supplied should be visibly healthy, not lacking in vigor, nor affected by any important pest or disease.

2.5 The plant material should not have undergone any treatment which would affect the expression of the characteristics of the variety, unless the competent authorities allow or request such treatment. If it has been treated, full details of the treatment must be given.

3. Method of Examination

3.1 *Duration of Tests*

[The consistency of differences between varieties is supported by observations made in different growing cycles or different locations.]^o The minimum duration of tests should normally be:

- { ASW 2 } (Section 3.1) – number of growing cycles }
- { GN 8 } (Section 3.1) – explanation of the growing cycle }

3.2 *Testing Place*

The tests should normally be conducted at one place. [If any characteristics of the variety, which are relevant for the examination of DUS, cannot be observed at that place, the variety may be tested at an additional place.] / [If any characteristics of the variety, which are relevant for the examination of DUS, cannot be observed at the initial location, it is recommended^p that the variety be tested at an [additional]/[alternative] location.]^f

3.3 *Conditions for Conducting the Examination*

The tests should be carried out under conditions ensuring satisfactory growth for the expression of the relevant characteristics of the variety and for the conduct of the examination.

- { **ASW 3** (Section 3.3) – information for conducting the examination of particular characteristics }
- { **GN 9** (Section 3.3) – requirements for a satisfactory growing cycle }

3.4 *Test Design*

- { **GN 10** (Section 3.4) – test design }
- { **ASW 4** (Section 3.4) – plot design }
- { **ASW 5** (Section 3.4) – removal of plants or parts of plants }

3.5 *Number of Plants / Parts of Plants to be Examined*

- { **ASW 6** (Section 3.5) – Number of Plants / Parts of Plants to be Examined }

3.6 *Additional Tests*

Additional tests, for examining relevant characteristics, may be established.

4. Assessment of Distinctness, Uniformity and Stability

4.1 *Distinctness*

4.1.1 *General Recommendations*

It is of particular importance for users of these Test Guidelines to consult the General Introduction prior to making decisions regarding distinctness. However, the following points are provided for elaboration or emphasis in these Test Guidelines.

[4.1.2 *Consistent Differences*^o

The minimum duration of tests recommended in section 3.1 reflects, in general, the need to ensure that any differences in a characteristic are sufficiently consistent.]^f

4.1.3 Clear Differences

Determining whether a difference between two varieties is clear depends on many factors, and should consider, in particular, the type of expression of the characteristic being examined, i.e. whether it is expressed in a qualitative, quantitative, or pseudo-qualitative manner. Therefore, it is important that users of these Test Guidelines are familiar with the recommendations contained in the General Introduction prior to making decisions regarding distinctness.

{ **ASW 7** (Section 4.1.4) – COYD }

4.2 Uniformity

It is of particular importance for users of these Test Guidelines to consult the General Introduction prior to making decisions regarding uniformity. However, the following points are provided for elaboration or emphasis in these Test Guidelines:

{ **GN 11** (Section 4.2) – uniformity assessment }

{ **ASW 8** (Section 4.2) – uniformity assessment }

4.3 Stability

4.3.1 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.

4.3.2 { **ASW 9** (Section 4.3.2) – stability assessment: general }

4.3.3 { **ASW 10** (Section 4.3.3) – stability assessment: hybrid varieties }

5. Grouping of Varieties and Organization of the Growing Trial

5.1 The selection of varieties of common knowledge to be grown in the trial with the candidate varieties and the way in which these varieties are divided into groups to facilitate the assessment of distinctness is aided by the use of grouping characteristics.

5.2 Grouping characteristics are those in which the documented states of expression, even where produced at different locations, can be used, either individually or in combination with other such characteristics: (a) to select varieties of common knowledge that can be excluded from the growing trial used for examination of distinctness; and (b) to organize the growing trial so that similar varieties are grouped together.

5.3 The following have been agreed as useful grouping characteristics:

{ **GN 12** (Section 5.3) – Grouping characteristics }

5.4 Guidance for the use of grouping characteristics, in the process of examining distinctness, is provided through the General Introduction.

6. Introduction to the Table of Characteristics

6.1 *Categories of Characteristics*

6.1.1 Standard Test Guidelines Characteristics

Standard Test Guidelines characteristics are those which are approved by UPOV for examination of DUS and from which members of the Union can select those suitable for their particular circumstances.

6.1.2 Asterisked Characteristics

Asterisked characteristics (denoted by *) are those included in the Test Guidelines which are important for the international harmonization of variety descriptions and should always be examined for DUS and included in the variety description by all members of the Union, except when the state of expression of a preceding characteristic or regional environmental conditions render this inappropriate.

6.2 *States of Expression and Corresponding Notes*

States of expression are given for each characteristic to define the characteristic and to harmonize descriptions. Each state of expression is allocated a corresponding numerical note for ease of recording of data and for the production and exchange of the description.

6.3 *Types of Expression*

An explanation of the types of expression of characteristics (qualitative, quantitative and pseudo-qualitative) is provided in the General Introduction.

6.4 *Example Varieties*

Where appropriate, example varieties are provided to clarify the states of expression of each characteristic.

{ **GN 13** (Section 6.4) – Example varieties }

6.5 *Legend*

(*) Asterisked characteristic – see Section 6.1.2

(QL) Qualitative characteristic – see Section 6.3

(QN) Quantitative characteristic – see Section 6.3

(PQ) Pseudo-qualitative characteristic – see Section 6.3

{ **ASW 11** (Section 6.5) – Legend: Explanations covering several characteristics }⁹

(+) See Explanations on the Table of Characteristics in Chapter 8.

7. Table of Characteristics/Tableau des caractères/Merkmalstabelle/Tabla de caracteres

- { **GN 14** } (Section 7) – Selecting a characteristic for inclusion in the Table of Characteristics }
- { **GN 15** } (Section 7) – Characteristics examined by patented methods }
- { **GN 16** } (Section 7) – Special characteristics }
- { **GN 17** } (Section 7) – New types of characteristics }
- { **GN 18** } (Section 7) – Table of Characteristics: Handling a long list of characteristics }

Char. No. (* (+) (QL/QN/PQ)		English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
{ GN 19 Order of characteristics in the Table of Characteristics }		{ GN 25 Heading of a characteristic }	{ GN 25 Heading of a characteristic }	{ GN 25 Heading of a characteristic }	{ GN 25 Heading of a characteristic }		
{ GN 20 Asterisked characteristics }	{ GN 23 Recommendations for conducting the examination }	{ GN 26 States of expression of a characteristic }	{ GN 26 States of expression of a characteristic }	{ GN 26 States of expression of a characteristic }	{ GN 26 States of expression of a characteristic }	{ GN 13 Example varieties }	{ GN 27 Notes }
{ GN 21 Explanation of the characteristic }	{ GN 24 Growth stage }	{ GN 26 States of expression of a characteristic }	{ GN 26 States of expression of a characteristic }	{ GN 26 States of expression of a characteristic }	{ GN 26 States of expression of a characteristic }	{ GN 13 Example varieties }	{ GN 27 Notes }
{ GN 22 Type of expression of the characteristic }	{ Other }	{ GN 26 States of expression of a characteristic }	{ GN 26 States of expression of a characteristic }	{ GN 26 States of expression of a characteristic }	{ GN 26 States of expression of a characteristic }	{ GN 13 Example varieties }	{ GN 27 Notes }

8. Explanations on the Table of Characteristics

{ **ASW 12** (Section 8) – Explanations covering several characteristics }

9. Literature

{xx}

10. Technical Questionnaire

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
		Application date: (not to be filled in by the applicant)
<p>TECHNICAL QUESTIONNAIRE to be completed in connection with an application for plant breeders' rights { ASW 13 (Section 10: TQ title) – TQ for hybrid varieties}</p>		
<p>1. Subject of the Technical Questionnaire</p> <p>1.1 <i>[Latin]¹ Name</i> <input data-bbox="625 712 1348 757" style="width: 80%; border: 1px solid black;" type="text" value="{[Latin]<sup>1</sup> Name}"/></p> <p>1.2 Common Name <input data-bbox="625 786 1348 831" style="width: 80%; border: 1px solid black;" type="text" value="{ Common Name}"/> { ASW 14 (Section 10: TQ 1) – Subject of the TQ}</p>		
<p>2. Applicant</p> <p>Name <input data-bbox="625 992 1348 1037" style="width: 80%; border: 1px solid black;" type="text"/></p> <p>Address <input data-bbox="625 1066 1348 1261" style="width: 80%; height: 60px; border: 1px solid black;" type="text"/></p> <p>Telephone No. <input data-bbox="625 1283 1348 1328" style="width: 80%; border: 1px solid black;" type="text"/></p> <p>Fax No. <input data-bbox="625 1357 1348 1402" style="width: 80%; border: 1px solid black;" type="text"/></p> <p>E-mail address <input data-bbox="625 1431 1348 1476" style="width: 80%; border: 1px solid black;" type="text"/></p> <p>Breeder (if different from applicant) <input data-bbox="625 1550 1348 1594" style="width: 80%; border: 1px solid black;" type="text"/></p>		
<p>3. Proposed denomination and breeder's reference</p> <p>Proposed denomination (if available) <input data-bbox="625 1738 1348 1783" style="width: 80%; border: 1px solid black;" type="text"/></p> <p>Breeder's reference <input data-bbox="625 1865 1348 1910" style="width: 80%; border: 1px solid black;" type="text"/></p>		

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
-------------------------	-----------------	-------------------

#4. Information on the breeding scheme and propagation of the variety[#]

4.1 Breeding scheme

{ **ASW 15** (Section 10: TQ 4.1) – information on breeding scheme }

4.2 Method of propagating the variety

{ **GN 28** (Section 10: TQ 4.2) – information on method of propagating the variety }

{ **GN 29** (Section 10: TQ 4.2) – information on method of propagation of hybrid varieties }

5. Characteristics of the variety to be indicated (the number in brackets refers to the corresponding characteristic in Test Guidelines; please mark the note which best corresponds).

Characteristics	Example Varieties	Note
{ GN 30 (Section 10: TQ 5) – selection of TQ characteristics }		

[#] Authorities may wish to allow certain of this information to be provided in a confidential section of the Technical Questionnaire

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
-------------------------	-----------------	-------------------

6. Similar varieties and differences from these varieties

Please use the table, and space provided for comments,^a below to provide information on how your candidate variety differs from the variety (or varieties) which, to the best of your knowledge, is (or are) most similar. This information may help the examination authority to conduct its examination of distinctness in a more efficient way.

Denomination(s) of variety(ies) similar to your candidate variety	Characteristic(s) in which your candidate variety differs from the similar variety(ies)	Describe the expression of the characteristic(s) for the similar variety(ies)	Describe the expression of the characteristic(s) for your candidate variety
<i>Example</i>	{ GN 31 }		(Section 10: TQ 6) – similar varieties }
<p>Comments:^a</p>			

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
-------------------------	-----------------	-------------------

#7. **Additional information which may help in the examination of the variety^f**

7.1 In addition to the information provided in sections 5 and 6, are there any additional characteristics which may help to distinguish the variety?

Yes [] No []

(If yes, please provide details)

7.2 Special conditions for the examination of the variety

7.2.1 Are there any special conditions for growing the variety or conducting the examination?

Yes [] No []

7.2.2 If yes, please give details:

7.3 Other information

{ **ASW 16** (Section 10: TQ 7.3) – where a photograph of the variety is to be provided }

8. Authorization for release

(a) Does the variety require prior authorization for release under legislation concerning the protection of the environment, human and animal health?

Yes [] No []

(b) Has such authorization been obtained?

Yes [] No []

If the answer to (b) is yes, please attach a copy of the authorization.

[#] Authorities may wish to allow certain of this information to be provided in a confidential section of the Technical Questionnaire

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
-------------------------	-----------------	-------------------

9. Information on plant material to be **[examined]** / **[submitted for examination]**

9.1 The expression of a characteristic or several characteristics of a variety may be affected by factors, such as pests and disease, chemical treatment (e.g. growth retardants or pesticides), effects of tissue culture, different rootstocks, scions taken from different growth phases of a tree, etc.

9.2 The plant material should not have undergone any treatment which would affect the expression of the characteristics of the variety, unless the competent authorities allow or request such treatment. If the plant material has undergone such treatment, full details of the treatment must be given. In this respect, please indicate below, to the best of your knowledge, if the plant material to be examined has been subjected to:^a

- | | | |
|---|---------|--------|
| (a) Microorganisms (e.g. virus, bacteria, phytoplasma) | Yes [] | No [] |
| (b) Chemical treatment (e.g. growth retardant or pesticide) | Yes [] | No [] |
| (c) Tissue culture | Yes [] | No [] |
| (d) Other factors | Yes [] | No [] |

Please provide details of where you have indicated “yes”.

.....

9.3 Has the plant material to be examined been tested for the presence of virus or other disease?^s

- | | | |
|-----|------------------|--------------------------|
| Yes | [] | (please provide details) |
| No | [] ^f | |

10. I hereby declare that, to the best of my knowledge, the information provided in this form is correct:

Applicant's name	<input type="text"/>		
Signature	<input type="text"/>	Date	<input type="text"/>

[Annex 2 follows]

ANNEX 2:
ADDITIONAL STANDARD WORDING (ASW)
FOR THE TG TEMPLATE

This section presents the additional standard wording (ASW) which can be added to the standard wording within the TG Template (Annex 1). The numbering refers to the numbering in the TG Template.

Key

{...} Blank for the relevant information to be inserted by the drafter of the Test Guidelines.

ASW 1 (TG Template: Section 2.3) – Seed quality requirements

(a) *Test Guidelines which only apply to seed-propagated varieties*

Option 1: “The seed should meet the minimum requirements for germination, species and analytical purity, health and moisture content, specified by the competent authority. In cases where the seed is to be stored, the germination capacity should be as high as possible and should, be stated by the applicant.”

Option 2: “The seed should meet the minimum requirements for germination, species and analytical purity, health and moisture content, specified by the competent authority.”

(b) *Test Guidelines which apply to seed-propagated as well as other types of varieties*

Option 1: “In the case of seed, the seed should meet the minimum requirements for germination, species and analytical purity, health and moisture content, specified by the competent authority. In cases where the seed is to be stored, the germination capacity should be as high as possible and should, be stated by the applicant.”

Option 2: “In the case of seed, the seed should meet the minimum requirements for germination, species and analytical purity, health and moisture content, specified by the competent authority.”

ASW 2 (TG Template: Section 3.1) – Number of growing cycles

(a) *Single growing cycle*

“The minimum duration of tests should normally be a single growing cycle.”

(b) *Two independent growing cycles*

“The minimum duration of tests should normally be two independent growing cycles.”

ASW 3 (TG Template: Section 3.3) – Information for conducting the examination of particular characteristics

(a) *Stage of development for the assessment*

“The optimum stage of development for the assessment of each characteristic is indicated by a number in the second column of the Table of Characteristics. The stages of development denoted by each number are described at the end of Chapter 8.”

(b) *Type of observation – visual or measurement*

“The recommended method of observing the characteristic is indicated by the following key in the second column of the Table of Characteristics:

MG: single measurement of a group of plants or parts of plants

MS: measurement of a number of individual plants or parts of plants

VG: visual assessment by a single observation of a group of plants or parts of plants

VS: visual assessment by observation of individual plants or parts of plants”

(c) *Type of plot for observation*

“The recommended type of plot in which to observe the characteristic is indicated by the following key in the second column of the Table of Characteristics:

- A: spaced plants
- B: row plot
- C: special test”

(d) *Observation of color by eye*

“Because daylight varies, color determinations made against a color chart should be made either in a suitable cabinet providing artificial daylight or in the middle of the day in a room without direct sunlight. The spectral distribution of the illuminant for artificial daylight should conform with the CIE Standard of Preferred Daylight D 6500 and should fall within the tolerances set out in the British Standard 950, Part I. These determinations should be made with the plant part placed against a white background.”

ASW 4 (TG Template: Section 3.4) – Plot design

(a) *Single plots*

“Each test should be designed to result in a total of at least {...} [plants] /[trees]”

(b) *Spaced plants and row plots*

“Each test should be designed to result in a total of at least {...} spaced plants and {...} meters of row plot.”

(c) *Replicated plots*

“Each test should be designed to result in a total of at least {...} plants, which should be divided between {...} replicates.”

ASW 5 (TG Template: Section 3.4) – Removal of plants or parts of plants

“The design of the tests should be such that plants or parts of plants may be removed for measurement or counting without prejudice to the observations which must be made up to the end of the growing cycle.

ASW 6 (Section 3.5) – Number of plants / parts of plants to be examined

(a) *Test Guidelines where all plants in the test are observed for all characteristics*

Option 1: “Unless otherwise indicated, all observations should be made on { x } plants or parts taken from each of { x } plants.”

Option 2: “Unless otherwise indicated, all observations should be made on { x } plants or parts taken from each of { x } plants. In the case of parts of plants, the number to be taken from each of the plants should be { y }.”

(b) *Test Guidelines where the observation of certain characteristics is made on a sample of plants in the test*

Option 1: “Unless otherwise indicated, 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.”

Option 2: “Unless otherwise indicated, 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. 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 }.”

ASW 7 (TG Template: Section 4.1.4) – COYD

“Where the COYD method is used, a difference between varieties should be considered to be clear if it is greater than the COY LSD for distinctness at the level of {e.g. 1%} after two or three growing cycles. [Where the difference is less than, or equal to, the LSD at the level of {e.g. 1%} after two growing cycles the test should be continued for a third growing cycle^t.]”^f

ASW 8 (TG Template: Section 4.2) – Uniformity assessment

(a) *Cross-pollinated varieties*

“The assessment of uniformity [for cross-pollinated varieties]^{*} should be according to the recommendations for cross-pollinated varieties in the General Introduction.”^q

* To be included if there are other types of varieties covered by the Test Guidelines.

(b) *Hybrid varieties*

“The assessment of uniformity for hybrid varieties depends on the type of hybrid and should be according to the recommendations for hybrid varieties in the General Introduction.”^q

(c) *Seed-propagated varieties*

“For the assessment of uniformity of seed-propagated varieties, the recommendations in the General Introduction for [self-pollinated] / [cross-pollinated] / [hybrid] varieties should be followed, as appropriate.” (delete as appropriate)

(d) *Uniformity assessment by off-types*

“For the assessment of uniformity, a population standard of { x }% and an acceptance probability of at least { y } % should be applied. In the case of a sample size of { a } plants, [{ b } off-types are] / [1 off-type is] allowed.”

(e) *Uniformity assessment by COYU*

“Where the COYU method is used, after two growing cycles a variety should be considered to be uniform if the mean adjusted $\log(\text{SD}+1)$ is less than or equal to the COY uniformity criterion (UC) for a probability level of {(a) e.g. 2%} and not uniform if it is greater than the UC for a probability level of {(b) e.g. 0.2%}. Where the mean adjusted $\log(\text{SD}+1)$ is greater than UC for a probability level of {(a) e.g. 2%} and less than or equal to UC for a probability level of {(b) e.g. 0.2%} the test should be continued for a third growing cycle. After three growing cycles a variety should be considered to be uniform if the mean adjusted $\log(\text{SD}+1)$ is less than or equal to UC for a probability level of {(c) e.g. 0.2%}.”^u

Note: Guidance for determining appropriate values for (a), (b) and (c) can be found in document TGP/10, Examining Uniformity.^f

ASW 9 (TG Template: Section 4.3.2) – Stability assessment: general

(a) *Test Guidelines covering seed-propagated and vegetatively propagated varieties^a*

“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.”

(b) *Test Guidelines covering only seed-propagated varieties*

“Where appropriate, or in cases of doubt, stability may be tested, either by growing a further generation, or by testing a new seed stock to ensure that it exhibits the same characteristics as those shown by the previous material supplied.”^a

(c) *Test Guidelines covering only vegetatively propagated varieties*

“Where appropriate, or in cases of doubt, stability may be tested, either by growing a further generation, or by testing a new plant stock to ensure that it exhibits the same characteristics as those shown by the previous material supplied.”

ASW 10 (TG Template: Section 4.3.3) – Stability assessment: hybrid varieties

“The stability of a hybrid variety may, in addition to an examination of the hybrid variety itself, also be assessed by examination of the uniformity and stability of its parent lines.”

ASW 11 (TG Template: Section 6.5) – Legend: Explanations covering several characteristics^g

“(a)-{x} See Explanations on the Table of Characteristics in Chapter 8, Section 8.1”

ASW 12 (TG Template: Section 8) – Explanations covering several characteristics

“8.1 Explanations covering several characteristics

“Characteristics containing the following key in the second column of the Table of Characteristics should be examined as indicated below:

- (a)
- (b) etc.

8.2 Explanations for individual characteristics

Ad. 1 etc.”

ASW 13 (TG Template: Section 10: TQ Title) – TQ for hybrid varieties

In the case of hybrid varieties where the parent lines are to be submitted as a part of the examination of the hybrid variety, the following wording can be added to the title of the document (after “TECHNICAL QUESTIONNAIRE: to be completed in connection with an application for plant breeders’ rights”):

“In the case of hybrid varieties which are the subject of an application for plant breeders’ rights, and where the parent lines are to be submitted as a part of the examination of the hybrid variety, this Technical Questionnaire should be completed for each of the parent lines, in addition to being completed for the hybrid variety.”^a

ASW 14 (TG Template: Section 10: TQ 1) – Subject of the TQ

(a) In the case of Test Guidelines covering more than one species, additional boxes should be added in the following format:

“1. Subject of the Technical Questionnaire (please indicate the relevant species):

- | | | | |
|-------|---------------------------------|-------------|------|
| 1.1.1 | <i>[Latin]^j Name</i> | [species 1] | |
| 1.1.2 | Common Name | [species 1] | [] |
| 1.2.1 | <i>[Latin]^j Name</i> | [species 2] | |
| 1.2.2 | Common Name | [species 2] | []” |

etc.

(b) If the Test Guidelines cover a genus or a large number of species, question 1 should be presented as follows:

“1. Subject of the Technical Questionnaire (please complete):

- 1.1 *[Latin]^j Name*
- 1.2 Common Name”

with the boxes left blank for completion by the applicant.

ASW 15 (TG Template: Section 10: TQ 4.1) – Information on breeding scheme

“Variety resulting from:

“4.1.1 Crossing

“(a) controlled cross []
(please state parent varieties)

“(b) partially known cross^g []
(please state known parent variety(ies))

“(c) totally unknown cross []

“4.1.2 Mutation []
(please state parent variety)

“4.1.3 Discovery []
(please state where, when and how developed)

“4.1.4 Other []”
(please provide details)”

ASW 16 (TG Template: Section 10: TQ 7.3) – Where a photograph of the variety is to be provided

“A representative color photograph of the variety^v should accompany the Technical Questionnaire.”^f

[Annex 3 follows]

ANNEX 3:
GUIDANCE NOTES (GN)
FOR THE TG TEMPLATE

This section presents guidance notes (GN) for drafters of Test Guidelines for use when developing the TG Template (Annex 1) into specific Test Guidelines. The numbering refers to the numbering in the TG Template.

GN 1 (TG Template: Cover page) – [Latin]^j name

All elements of the [Latin]^j name should be presented in italics, except for the elements denoting the author and classification e.g.

Poaceae not *Poaceae*

Allium not *Allium*

Beta vulgaris L. not *Beta vulgaris* L.

Beta vulgaris L. var. *conditiva* Alef. not *Beta vulgaris* L. var. *conditiva* Alef.

GN 2 (TG Template: Cover page) – Associated Documents

“Other associated UPOV documents” seeks information on other UPOV documents which should be read in conjunction with the Test Guidelines concerned. In particular, it seeks information on other Test Guidelines which might be relevant, e.g. a user of the Field Bean Test Guidelines might wish to know that Test Guidelines also exist for Broad Bean and that, previously, these two crops were combined in a single set of Test Guidelines. Thus, the associated documents for the Field Bean Test Guidelines might be:

TG/08/4 + Corr.	Broad Bean, Field Bean (Replaced)
TG/xx/1	Broad Bean

It is not necessary to make reference to the General Introduction or the TGP documents which are already referenced in the paragraph above.

GN 3 (TG Template: Section 1.1) – Subject of the Test Guidelines: More than one species

Separate Test Guidelines are usually drawn up for each species. It may however be considered necessary to include two or more species, a whole genus or even a larger unit in one Test Guidelines document.

GN 4 (TG Template: Section 1.1) – Subject of the Test Guidelines: Different types or groups within a species

The General Introduction states that “Different groups of varieties within a species can be dealt with in separate or subdivided Test Guidelines if the categories can be reliably separated on the basis of characteristics suitable for distinctness, or where an appropriate procedure has been developed to ensure that all varieties of common knowledge will be adequately considered for distinctness”.

This explanation is provided to ensure that groups or types of varieties are only created where it is possible to ensure that a variety will be clearly placed into the appropriate group, or if not, that other measures are taken to ensure that all varieties of common knowledge are considered for distinctness. Thus, if the Test Guidelines cover only a group, or type, within a species, this section should explain which characteristics, or what other basis, ensure distinctness of all the varieties covered by the Test Guidelines from all other varieties.

The Test Guidelines should also explain the characteristics, or other basis, which allow distinctness for types or groups of varieties covered by different sets of example varieties (e.g. Winter/Spring) or should explain what other basis ensures distinctness of all the varieties covered by one type or group, from all the varieties of another.

GN 5 (TG Template: Section 1.1) – Subject of the Test Guidelines: Family name

In some cases, it is also considered helpful to identify the family (not in italics).

GN 6 (TG Template: Section 1.1) – Guidance for new types and species

Document TGP/13, Guidance Notes for New Types and Species may provide useful information for drafters of Test Guidelines covering new types (e.g. multi- or interspecific hybrids) or species.

GN 7 (TG Template: Section 2.3) – Quantity of plant material required

The drafter of the Test Guidelines should consider the following factors when determining the quantity of material required:

- (a) Anticipated level of plant establishment from submitted plant material;
- (b) Quantity of submitted plant material to be used for reference samples;
- (c) Rate of deterioration in store.

GN 8 (TG Template: Section 3.1) – Explanation of the growing cycle

The “Duration of Tests” (Section 3.1) makes reference to the number of growing cycles. In some cases it may be necessary to clarify what is meant by a “growing cycle”. Thus, in the case of a fruit tree, it should be explained that a growing cycle refers to the fruiting cycle.

GN 9 (TG Template: Section 3.3) – Requirements for a satisfactory growing cycle

It may be necessary to specify in this section that there must be, for example, a satisfactory crop of fruit in each of the growing cycles and that the first fruiting cycle should not be considered to produce a satisfactory crop.

GN 10 (TG Template: Section 3.4) – Test design

Document TGP/8, Use of Statistical Procedures in DUS Testing contains guidance on experimental design.

GN 11 (TG Template: Section 4.2) – Uniformity assessment

In the case of Test Guidelines which cover different types of variety, combinations of the individual wordings in ASW 8 can be used.

Document TGP/10, Examining Uniformity, contains guidance on the development of appropriate uniformity standards.

GN 12 (TG Template: Section 5.3) – Grouping characteristics

The General Introduction explains that grouping characteristics are characteristics in which the documented states of expression, even where recorded at different locations, can be used either individually or in combination with other such characteristics: to select varieties of common knowledge that can be excluded from the growing trial used for examination of distinctness, and/or to organize the growing trial so that similar varieties are grouped together.

Thus, grouping characteristics:

1. Must be:
 - (a) qualitative characteristics or,
 - (b) quantitative or pseudo-qualitative characteristics which provide useful discrimination between the varieties of common knowledge from documented states of expression recorded at different locations.
2. Must be useful for:
 - (a) selecting varieties of common knowledge that can be excluded from the growing trial used for examination of distinctness and/or,
 - (b) organizing the growing trial so that similar varieties are grouped together.
3. Should be:

(a) an asterisked characteristic and/or, ^w f

(b) included in the Technical Questionnaire or application form.

The number of grouping characteristics is not fixed. If there are only a few characteristics which satisfy the criteria these are all likely to be selected as grouping characteristics. However, if there are many characteristics which fulfill the criteria these might not all be selected as grouping characteristics in the Test Guidelines. In the latter case, a selection of the most efficient characteristics for the uses set out in 2(a) and 2(b) might be made.

In the case of color characteristics, where the states of expression in the Table of Characteristics are represented by the RHS Colour Chart number, color groups should be created for use of these characteristics as grouping characteristics. If the characteristic is included in the Technical Questionnaire, the color groups created for the characteristic for grouping purposes and for presenting the characteristic in the Technical Questionnaire should be the same.^x

GN 13 (TG Template: Section 6.4) – Example varieties

(a) *Purpose of example varieties*

The General Introduction (Section 4.3) states that “example varieties are provided in the Test Guidelines to clarify the states of expression of a characteristic.” This clarification of the states of expression is required with respect to two aspects:

- (a) to illustrate the characteristic and/or
- (b) to provide the basis for ascribing the appropriate state of expression to each variety and, thereby, to develop internationally harmonized variety descriptions.

The requirement to illustrate a characteristic (aspect (a)) is self-explanatory. However, the role of example varieties in the international harmonization of variety descriptions is less obvious. The main reason^y why example varieties are used in place of, for example, actual measurements is that measurements can be influenced by the environment. The following hypothetical and simplistic example has been created to demonstrate why example varieties are superior to absolute measurements in this respect.^f

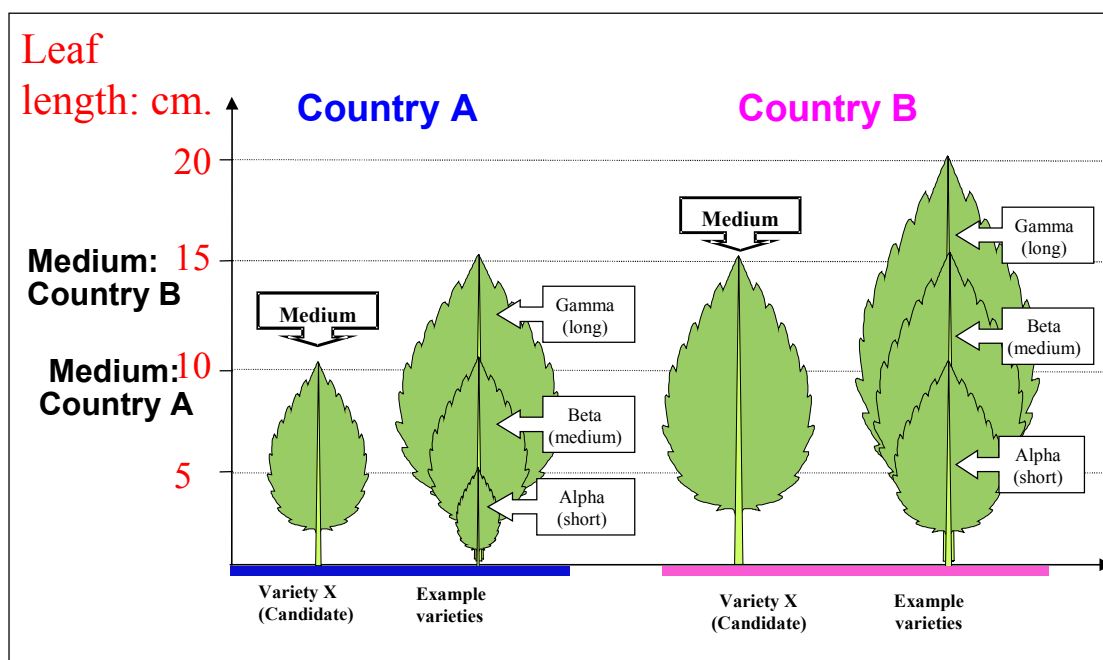
Example:

Characteristic to be examined: Leaf length

(i) Example varieties in the Test Guidelines

	Example Varieties	Note
Leaf: length of blade		
short	Alpha	3
medium	Beta	5
long	Gamma	7

The following figure compares the results for a candidate variety “X” from DUS growing trials in country A and country B:



Example varieties are important to adjust for the variation of the expression of the characteristics due to the genotype / year interaction and to the genotype / environment interaction as far as possible. Thus, using the relative scale provided by the example varieties, it can be seen that the example variety Beta measured 10 cm in Country A and 15 cm in Country B, but in both locations, demonstrates the state of expression “medium”. On this basis, candidate variety X would be considered to have a medium length leaf in both Countries A and B.

(ii) Fixed measurements in the Test Guidelines

If absolute measurements were to be indicated in the Test Guidelines and the Test Guidelines were drafted in Country A on the basis of the data from (i), the Table of Characteristics would show the following:

	Length	Note
Leaf: length of blade		
short	5 cm	3
medium	10 cm	5
long	15 cm	7

Because there is no “relative scale” provided by the example varieties, the same data as for (i) would lead to the following descriptions:

	Country A	Country B
Variety X	10 cm (medium: note 5)	15 cm (long: note 7)

Thus, if absolute measurements were used in the Test Guidelines, variety X, when grown in Country A, would be described as “medium (note 5)”, but if grown in Country B, would be described as “long (note 7)”. This demonstrates that it could be very misleading to compare descriptions from different locations on the basis of absolute measurements, without the adjustment for year or environmental effects provided by example varieties.

Nevertheless, because of the possibility of particular interactions between the variety genotype and location (e.g. influence of photoperiod), it should not be assumed that descriptions developed in different countries or locations using the same set of example varieties will be comparable (see also section GN 13 (d)). Guidance on the scope for comparison of varieties on the basis of descriptions produced in different locations is provided in document TGP/9, Examining Distinctness.

(b) Deciding if example varieties are needed for a characteristic

As explained in (a), the drafter must decide if example varieties are required for each characteristic:

either to illustrate the characteristic
or, to provide the basis for ascribing the appropriate state of expression to each variety and, thereby, to develop internationally harmonized variety descriptions.

(i) Illustration of the characteristic

Although example varieties have the benefit of enabling examiners to see a characteristic in “real life”, in many cases, the illustration of a characteristic by photographs or drawings (to be provided in chapter 8 of the Test Guidelines) may provide a clearer illustration of the characteristic. Furthermore, the difficulty in selecting suitable example varieties, which satisfy all the requirements in paragraphs (c) to (g) below, means that photographs or drawings are an important alternative² to example varieties as a means of illustrating characteristics.^f

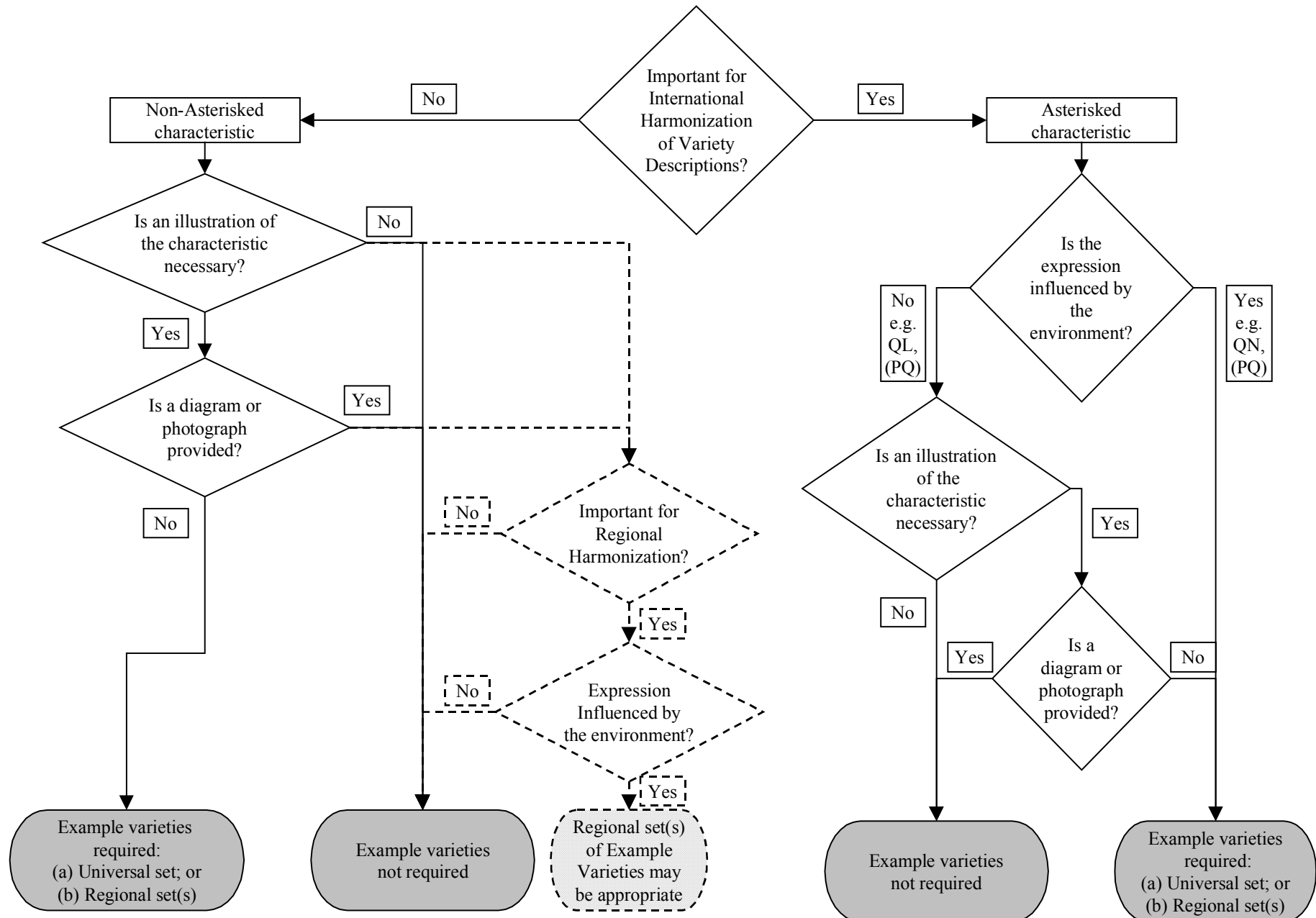
(ii) Harmonization of variety descriptions

The drafter should decide if the characteristic is useful for international harmonization of variety descriptions. In deciding this, the drafter should remember that UPOV has, in particular, identified “Asterisked Characteristics” as those which are important for the international harmonization of variety descriptions.

- If the characteristic is not important for the international harmonization of variety descriptions and example varieties are not necessary for illustration of the characteristic (see (i)), there is no requirement for example varieties to be provided.
- If the characteristic is important for the international harmonization of variety descriptions but is not influenced by the year or environment (e.g. qualitative characteristics) and example varieties are not necessary for illustration of the characteristic (see (i)) it may not be necessary to provide example varieties.
- If the characteristic is important for the international harmonization of variety descriptions (e.g. asterisked characteristics) and is influenced by the environment (e.g. most quantitative characteristics) or example varieties are necessary for illustration of the characteristic (see (i)) it is necessary to provide example varieties.

The process for deciding if example varieties need to be provided for a characteristic is illustrated^{aa} in the following diagram:^f

Deciding if Example Varieties are needed for a characteristic



(c) *Availability*

Authorities responsible for DUS testing and breeders need to be able to obtain plant material of example varieties and therefore, in general, example varieties should be widely and readily^b available for the coverage of the Test Guidelines (see also (h) “Multiple sets of example varieties”). If an example variety it is not widely available, it should only be recommended if there are specific reasons for this, for example, if it is the only variety with a particular state of expression for a given characteristic.

(d) *Fluctuation of expression*

The example variety should provide a clear example of the state of expression. Any fluctuation in the expression of the example variety for the given state for which it has been selected, in relation to other varieties in the collection, would lead to problems for harmonization of variety descriptions. If varieties are prone to such fluctuations, it is an indication of a specific variety genotype / location interaction which would make it difficult to harmonize variety descriptions on an international basis. In such cases, a single set of example varieties should not be provided in the Test Guidelines because it would be misleading and may even lead to an incorrect interpretation of the characteristic (see also section GN 13(h)(i)).

(e) *Illustration of the range of expression within the variety collection*

The set of example varieties for a given characteristic should provide information on the range of expression of the characteristic in the collection of varieties covered by the Test Guidelines. Thus, in general, it is necessary to provide example varieties for more than one state of expression and in the case of:

- Quantitative characteristics: to provide example varieties for: at least three states of expression (e.g. (3), (5) and (7)), in the case of the “1-9” scale; or at least two states (e.g. (1) and (2)) in the case of the “condensed”^{bb} scale.^f
- Pseudo-qualitative characteristics: to provide a set of example varieties to cover the different types of variation^{cc} within the range of expression of the characteristics.^f

(f) *Minimizing the number*

For practical reasons it is recommended to choose the overall set of example varieties for the Test Guidelines in a way that all the desired characteristics and states of expression are covered by the minimum total number of example varieties. This means that, if possible, each example variety should be used for as many characteristics as possible and example varieties should not be used only for one or very few characteristics.

(g) *Agreement of interested experts*

The set of example varieties proposed by the leading expert(s) in the preparation of the Test Guidelines should be prepared in cooperation with all the interested experts. If one or more expert(s) consider(s) that certain example varieties are not suitable for their conditions, a new example variety should, if possible, be found (see also Section (h) “Multiple sets of example varieties”).

It is important that the set of example varieties for a particular characteristic is developed by one expert in order to ensure that the set of example varieties for that characteristic represents

the same scale. Example varieties proposed by other experts, for the same characteristic, should be known to represent the same scale before they are accepted in Test Guidelines. In cases where it is necessary to develop a separate scale, for different types of variety or different regions, multiple sets of example varieties may need to be developed (see section GN12 (h)).

(h) *Multiple sets of example varieties*

(i) **Regional sets of example varieties^f**

UPOV Test Guidelines need to cover all the different countries, regions and environments where the DUS examinations are conducted.^b For some Test Guidelines, this means that a single universal set of example varieties cannot be found. It is accepted that, where unavoidable, different sets of example varieties may be developed. However, the establishment of different sets of example varieties means that harmonization of variety descriptions produced in these different regions will be lost and it is emphasized that different sets of example varieties should only be developed where unavoidable.

The General Introduction states that “Different groups of varieties within a species can be dealt with in separate or subdivided Test Guidelines if the categories can be reliably separated on the basis of characteristics suitable for distinctness, or where an appropriate procedure has been developed to ensure that all varieties of common knowledge will be adequately considered for distinctness.” In this respect, the creation of different sets of example varieties results in “subdivided Test Guidelines.”

Thus, if the sets of example varieties within the Test Guidelines cover only certain regions the Test Guidelines should explain which characteristics, or what other basis (e.g. defined agro-environment types) ensure distinctness of all the varieties covered by one set of example varieties in the Test Guidelines, from all other varieties.

The existence of multiple sets of example varieties means that, for some or all characteristics, no example varieties are presented in the Table of Characteristics and the multiple sets of example varieties are [presented in an annex]/[available on the UPOV Website]^{dd}. ~~For characteristics where universal example varieties are available, these will be presented in the Table of Characteristics and also, for the regional sets of example varieties, in the annex.~~

Even if the “example variety” column is empty (i.e. there are no universal example varieties for any characteristic), it is retained in the Table of Characteristics to allow users to complete this with the appropriate example varieties.^{ee}

[Option 1 (see illustration): Multiple sets of example varieties to be attached in an annex to the Test Guidelines – in the Table of Characteristics format^{ee}

The multiple sets of example varieties are presented in an annex with exactly the same format as the Table of Characteristics. This allows the appropriate set of example varieties to be “copied and pasted” into the Table of Characteristics by each individual user of the Test Guidelines. The “characteristic” column is presented only in the appropriate language for the version of the Test Guidelines concerned to allow the portrait format of the document to be kept.

Example:

			Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo		
Stage/ Stade/ Stadium/ Estado	English		Region A	Region B	Note/ Nota
5. 12-13 (+) M	First leaf: length of sheath				
	very short				1
	short		Variety A	Alpha	3
	medium		Variety B	Beta	5
	long		Variety C	Gamma	7
	very long				9
6. 12-13 (+) M	First leaf: length of blade				
	very short				1
	short		Variety X	Delta	3
	medium		Variety Y	Epsilon	5
	long		Variety Z	Zeta	7
	very long				9

Advantages: Easy for users of Test Guidelines to introduce appropriate set of example varieties

Disadvantages: Duplication of Table of Characteristics will increase the size of the Test Guidelines substantially – although this will be in the form of an annex which can be detached if required.]

Option 2 (see illustration): Multiple sets of example varieties to be attached in an annex to the Test Guidelines – in list format^{ee}

The multiple sets of example varieties are presented in an annex in a tabular format as follows:

	Region A					
Example varieties	Ch. 1	Ch. 2	Ch. 3	Ch. 4	Ch. 5	etc.
Variety A	3	1	3		3	
Variety B	5	2	7	1	1	
Variety C	7	3	5	9	2	
Variety D		4			4	
etc.						

	Region B					
Example varieties	Ch. 1	Ch. 2	Ch. 3	Ch. 4	Ch. 5	etc.
Variety I	3	4	5		1	
Variety II	5	2	3	1	2	
Variety III	7	1	7	9	3	
Variety IV		3			4	
etc.						

Advantages: The size of the annex is minimized.

The annex provides a convenient list of all the example varieties needed for the Test Guidelines*.

Disadvantages: Users of Test Guidelines have to introduce, “one by one”, the appropriate example varieties for each of the characteristics in the Table of Characteristics.]

* Comment: Perhaps this table should be produced for ALL Test Guidelines, regardless of the outcome of this option.

Option 3: Multiple sets of example varieties to be provided on the UPOV Website^{dd}

The regional sets of example varieties are not included in the Test Guidelines, but are presented on the UPOV Website. The presentation is [as Option 1]/ [as Option 2]. The TWPs are not required to review these example varieties. Any member of the Union can submit such a set of example varieties, and after the Office has checked the format and presentation of the submitted document, the set of example varieties will be posted on the UPOV Website. On the UPOV Website, the indices of Test Guidelines indicate where such regional sets of example varieties are available.

(ii) Different types of variety

If it is not possible, with a single set of example varieties, to describe all the types of varieties (e.g. winter-types and spring-types) covered by the same Test Guidelines, they may be subdivided to create different sets of example varieties. However, the establishment of different sets of example varieties means that harmonization of variety descriptions produced for these different types will be lost.

The General Introduction states that “Different groups of varieties within a species can be dealt with in separate or subdivided Test Guidelines if the categories can be reliably separated on the basis of characteristics suitable for distinctness, or where an appropriate procedure has been developed to ensure that all varieties of common knowledge will be adequately considered for distinctness.”

This explanation is provided to ensure that groups or types of varieties are only created where it is possible to ensure that a variety will be clearly placed into the appropriate group or, if not, that other measures are taken to ensure that all varieties of common knowledge are considered for distinctness. Thus, if the example varieties in the Test Guidelines cover only a group, or type, within a species, the Test Guidelines should explain which characteristics, or what other basis, ensure distinctness of all the varieties of one type of variety from all the varieties of the other types.

Where different sets of example varieties are provided for different types of varieties covered by the same Test Guidelines, they are placed in the Table of Characteristics in the same column as normal. The two sets of example varieties (e.g. winter and spring) are separated by a semicolon, with a key provided for each set and an explanation included in the legend of chapter 6 of the Test Guidelines.

Example: For certain characteristics, different example varieties are indicated for winter type and spring type varieties. These types are separated by a semicolon, with the winter types placed before the semicolon and prefixed by “(w)” and the spring types placed after the semicolon and prefixed by “(s)”.

Stage/ Stade/ Stadium/ Estado	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
7. 25-29 (* M (+)	Plant: growth habit	Plante: port	Pflanze: Wuchsform	Planta: porte		
	erect	dressé	aufrecht	erecto		1
	semi-erect	demi-dressé	halbaufrecht	semierecto	(w) Variety A, Variety C; (s) Alpha	3
	intermediate	demi-dressé à demi-étalé	mittel	intermedio	(w) Variety B; (s) Beta	5
	semi-prostrate	demi-étalé	halbliiegend	semipostrado	; (s) Gamma	7
prostrate	étalé	liegend	postrado		9	

GN 14 (TG Template: Section 7) – Selecting a characteristic for inclusion in the Table of Characteristics

The characteristics included in the Table of Characteristics are called “Standard Test Guidelines Characteristics.” The General Introduction (Chapter 4, Section 4.8 Table) explains that such characteristics are those “characteristics that are accepted by UPOV for examination of DUS and from which members of the Union can select those suitable for their particular circumstances.”

To be included in the Table of Characteristics, the characteristic must satisfy the criteria for a Standard Test Guidelines Characteristic, namely:

(a) it must satisfy the criteria for use of any characteristic for DUS as set out in the General Introduction (Chapter 4, Section 4.2) which are that it:

- (i) results from a given genotype or combination of genotypes;
- (ii) is sufficiently consistent and repeatable in a particular environment;
- (iii) exhibits sufficient variation between varieties to be able to establish distinctness;
- (iv) is capable of precise definition and recognition;
- (v) allows uniformity requirements to be fulfilled;
- (vi) allows stability requirements to be fulfilled, meaning that it produces consistent and repeatable results after repeated propagation or, where appropriate, at the end of each cycle of propagation;

(b) it must have been used to develop a variety description by at least one member of the Union and

(c) where there is a long list of such characteristics and, where considered appropriate, there may be an indication of the extent of use of each characteristic.

One of the most important functions of the TWPs, with respect to the development of Test Guidelines, is to ensure that these criteria are fulfilled before acceptance of a characteristic in the Test Guidelines.

GN 15 (TG Template: Section 7) – Characteristics examined by patented methods

(a) In the case of a characteristic which can be examined by a patented method, the leading expert(s) should disclose any known information on the patent, or patent applications pending, that may relate to the assessment of the expression of the characteristic concerned. The information on known patents should include the name and contact details of the patent holder, patent registration number, and countries where the patent has been granted (or patent applications pending, if applicable).

(b) The leading expert(s) should assess the importance of the patented method concerning the assessment of the expression of a characteristic and the suitability of alternative, non-patented methods, if available. The leading expert(s) and relevant TWP should then decide whether it would be better to revisit the issue at a later stage or if it would be appropriate to contact the patent holder to find a suitable arrangement for utilization of the patented method. The TWP may decide to seek the advice of the Technical Committee and, if appropriate, the Technical Committee may also seek the advice of the Administrative and Legal Committee.

(c) If a decision to contact the patent holder is taken, three situations may arise:

(i) the patent holder waives his/her rights for the particular use of the patented method concerning the assessment of the expression of a characteristic for DUS testing and development of variety descriptions;

(ii) the patent holder is willing to negotiate licenses with other parties on a non-discriminatory basis and on reasonable terms and conditions;

(iii) the patent holder is not willing to cooperate with the solutions in (i) or (ii).

(d) If (c) (i) is applicable, a footnote in the corresponding characteristic(s) of the Test Guidelines should indicate that the method for assessing the expression of this characteristic is protected by patent, but that the patent holder has waived his/her rights for the purpose of DUS testing and development of variety descriptions. The members of the TWP may decide, considering the importance of the characteristic, if it will be appropriate to select it as an asterisked characteristic.

(e) If (c) (ii) is applicable, it is recommended that the characteristic(s) concerned will not be selected as an asterisked characteristic as it will not satisfy the requirement for accessibility that enables harmonization of variety description using asterisked characteristics. The members of the TWP may decide whether interested parties would like to retain the characteristic related to the method protected by patent as a standard Test Guidelines characteristic. Interested parties may decide to start negotiations with the patent holder for licenses on a non-discriminatory basis and on reasonable terms and

conditions. Such negotiations are left to the interested parties and would take place outside UPOV. An appropriate note indicating that the method concerning the assessment of the expression of the characteristic is protected by patent and that the patent holder provides for licenses on a non-discriminatory basis and on reasonable terms and conditions should be provided.

(f) If (c) (iii) is applicable, it is recommended that the characteristic(s) concerned with the method protected by patent will not be selected as an asterisked characteristic. The experts of the relevant TWP may decide, in light of the information available, e.g. experience of a member of the Union that has used the characteristic to develop a variety description, whether the characteristic should or should not be selected as a standard Test Guidelines characteristic. An appropriate note indicating that the method concerning the assessment of the expression of the characteristic is protected by patent should be provided.

GN 16 (TG Template: Section 7) – Special characteristics

Document TGP/12, Special Characteristics, provides guidance on the use of special characteristics, e.g. resistance to diseases, insects and chemicals and chemical constituents examined by protein electrophoresis.

GN 17 (TG Template: Section 7) – New types of characteristics

Document TGP/15, New Types of Characteristics, provides guidance on the possible use of new types of characteristics.

GN 18 (TG Template: Section 7) – Table of Characteristics: Handling a long list of characteristics^{ff}

The General Introduction (Chapter 4, Section 4.8, Functional Categorization of Characteristics) clarifies that the function of characteristics included in the Test Guidelines is to provide a list of UPOV accepted characteristics from which users can select those suitable for their particular circumstances. The criteria for inclusion in the Test Guidelines are that they must satisfy the basic requirements for a characteristic set out in the General Introduction (Chapter 4, Section 4.2, Selection of Characteristics) and must have been used to develop a variety description by at least one member of the Union. Through the work of its TWPs, UPOV provides a system of “quality control” by ensuring that any characteristics included in the Test Guidelines meet these criteria.

The purpose and criteria set out above demonstrate the intention that the Test Guidelines should contain all characteristics which are suitable for examination of DUS and that there should be no restriction, on the inclusion of characteristics in Test Guidelines, on the basis of the degree of use. This intention is confirmed by recognition that, in the case of a long list of characteristics, an indication of the extent of use of each characteristic might be considered.

In cases where certain characteristics are most useful in certain environments (e.g. cooler climates), the TWP may decide to indicate this in the Table of Characteristics to help users to select the most suitable characteristics for their circumstances. Furthermore, in some circumstances the TWP may consider that it is unhelpful to include all those characteristics which fulfill the criteria for inclusion and, if there is a full consensus amongst all interested experts, may agree to omit certain characteristics. Such omitted characteristics would then be

included in document TGP/5, Experience and Cooperation in DUS Testing, in the section on “Notification of Additional Characteristics” (currently Section 5.11).^{gg}

GN 19 (TG Template: Section 7: column 1) – Order of characteristics in the Table of Characteristics^{hh}

The order of characteristics should be as follows:

(a) Botanical order

(i) The characteristics in the Table of Characteristics should follow the botanical order as follows:

- seed (for characteristics examined on seed submitted)
- seedling
- plant (e.g. growth habit)
- root
- root system or other subterranean organs,
- stem
- leaf (blade, petiole, stipule)
- inflorescence
- flower (calyx, sepal, corolla, petal, stamen, pistil)
- fruit
- seed (for characteristics examined on seed harvested from the growing trial).

(ii) The order normally starts with:

- larger organs followed by smaller organs or sub-organs (inflorescence, flower, stamen, anther, pollen),
- outer/lower parts followed by the inner/higher parts (e.g. inflorescence, calyx, corolla).

However, this order may be applied with some flexibility. For example, it may be more appropriate to follow the:

- chronological order of recording.

(b) Order of parts of an organ

The order normally starts with:

- characteristics of the whole organ followed by those of its parts e.g. base, apex, margin.

(c) Exceptions

In cases where the characteristics of a sub-organ are units of the higher organ (e.g.: Flower: arrangement of petals; flower: number of styles), these would normally be placed

with the characteristics of the higher organ. However, where more practical, these can be kept together with the characteristics of the sub-organ concerned (e.g.: “Flower: arrangement of petals” could remain together with the other characteristics on the petal and “Flower: number of styles” could remain together with the other characteristics on the styles).

(d) Order of type of observation

Within the order above, the following subdivision has been adopted for the characteristics of the plant as a whole or the various organs, or sub-organs, of the plant:

- attitude
- height
- length
- width
- size
- shape
- color
- other details (such as surface, etc., and individual parts of the organ such as base, apex and margin).

In general, the shape of base and apex are grouped together with the shape of the whole organ since, for practical reasons, these shapes are recorded at the same time.

GN 20 (TG Template: Section 7: column 1) – Asterisked characteristics

The General Introduction states that asterisked characteristics are “characteristics that are important for the international harmonization of variety descriptions.” The criteria for selecting a characteristic as an asterisked characteristic are that:

- (a) it must be a characteristic included in the Test Guidelines;
- (b) it should always be examined for DUS and included in the variety description by all members of the Union except when the state of expression of a preceding characteristic or regional environmental conditions render this inappropriate;
- (c) it must be useful for the international harmonization of variety descriptions;
- (d) particular care should be taken before selection of disease resistance characteristics.

It should be clarified that criterion (b) is worded to ensure that members of the Union which are not able to examine the characteristic do not use this as a reason to object to the characteristic being agreed as an asterisked characteristic. Thus, any characteristic which satisfies the criteria and, in particular, is useful for the international harmonization of variety descriptions should be selected as an asterisked characteristic, even if it cannot be examined for all varieties or by all members of the Union. The upper limit on the number of asterisked characteristics should, therefore, be determined by the number which are required to provide useful internationally harmonized variety descriptions.

GN 21 (TG Template: Section 7: column 1) – Explanation of the characteristic

A plus “(+)” is indicated in the Table of Characteristics where an explanation concerning the characteristic is provided in Chapter 8, Explanations on the Table of Characteristics. In particular, such explanations include, where necessary, an illustration of the characteristic and/or its states of expression.^b

GN 22 (TG Template: Section 7: column 1) – Type of expression of the characteristic

Section 4, Presentation of Characteristics According to Their Type of Expression, provides guidance on categorizing characteristics into the appropriate type of expression i.e. qualitative, quantitative and pseudo-qualitative. It also provides examples of states of expression for some commonly used characteristics.

GN 23 (TG Template: Section 7: column 2 – box 1) – Recommendationsⁱⁱ for conducting the examination

This box provides the key for guidance which is to be provided in TG Template, Section 3.3, Conditions for Conducting the Examination. For example, guidance may be provided on: the timing of the examination; the part of the plant on which the observation should be made; the type of plot on which to make the observation, etc.

GN 24 (TG Template: Section 7: column 2 – box 2) – Growth stage

In some Test Guidelines, the growth stage at which the examination of the characteristic should be done is provided here. In such cases, the stages of development denoted by each number are described at the end of Chapter 8.

GN 25 (TG Template: Section 7: column 3) – Heading of a characteristic

(a) *General*

A characteristic normally starts by identifying the:

- plant or, alternatively, the plant part (organ) concerned,

followed, after a colon, by the

- organ or, alternatively, the sub-organ or the specialty to be observed

e.g. “Plant: number of flowers” or “Flower: width of petal” or “Petal: color of margin”.

The heading of a characteristic should be worded precisely and, if possible, be self-contained to be understood and clear without the knowledge of the states. The states should also be easily understood without the full text of the characteristic, irrespective of whether the overall text of the characteristic may appear repetitive. For example, the word “presence of” or “intensity of” could be added, even if the first state would read “absent” or “absent or very weak.” This applies particularly to cases where not only the absence/presence is to be listed

as a characteristic but where a number of criteria are of importance with regard to a single organ, such as number, size, length, width, density, color, etc..

(b) Clarifying similar characteristics

In the case of two or more characteristics where there is only one difference (e.g. lower or upper side of blade) to be observed, the part that differs should be underlined e.g.

- “lower side”, or “upper side”^{jj}

(c) Characteristics which only apply to certain varieties

In some cases, the state of expression of a preceding characteristic determines that a subsequent characteristic is not applicable e.g. it would not be possible to describe the shape of leaf lobes for a variety which did not have leaf lobes. In this situation, the heading of the subsequent characteristic is preceded by an underlined reference to the types of varieties to which it applies, on the basis of the preceding characteristic, e.g.:

“Varieties with leaf lobes only: Leaf: shape of lobes”^{kk}

(d) Recognizing independent characteristics

Independent characteristics should be presented as separate characteristics where this improves clarity and always, because of the clarity^b of the guidelines on distinctness, where it is possible to identify a separate qualitative characteristic. It is important that independent characteristics are split to avoid confusion. For example, in Pea, marbling and anthocyanin spotting of the testa should be separated.^{ll}

GN 26 (TG Template: Section 7: column 3) – States of expression of a characteristic

(a) Harmonized states of expression – approved characteristics

Section 4, Presentation of Characteristics According to Their Type of Expression, seeks to ensure that the states of expression used for the same or similar characteristics used in the Test Guidelines are harmonized as far as possible. It aims to achieve this by presenting a database of characteristics, with their corresponding states of expression, which have already been approved for inclusion in existing Test Guidelines. Drafters are invited to search this database for the characteristic which they wish to use. If the appropriate characteristic, and its corresponding states of expression, are found this can be copied directly into the new Test Guidelines.

(b) Harmonized states of expression – new characteristics or states of expression

In cases where the required characteristic is not present in the database, or its states of expression are not appropriate, drafters are invited to refer to Section 4, Presentation of Characteristics According to Their Type of Expression, which provides guidance on categorizing characteristics into the appropriate type of expression, i.e. qualitative, quantitative and pseudo-qualitative, and also provides examples of states of expression for some commonly used characteristics. In addition, drafters should refer to document TGP/14.2, Botanical Terms, which contains information on the presentation of certain characteristics, such as plant shapes.

(c) *Order of states of expression*

(i) **General**

Insofar as it is possible to impose an order on the expressions inside a characteristic, the smaller, lesser or lower expressions should be assigned the lower Note. The order of states should as far as possible be:

- from weak to strong,
- from light to dark ,
- from low to high,
- from narrow to broad.

(ii) **Color**

In the case of colors, the chronological appearance of the color (e.g. as the fruit ripens) may also be used. The same sequence should be used for organs with similar states within a single document (e.g. color of leaf and color of stem).

(iii) **Shape**

In the case of shape characteristics, the order should, in general, be from the lesser expression to the greater expression. Shapes of apex should go from pointed to rounded or from raised to depressed (see also document TGP/14.2, Glossary of Botanical, Statistical and Terms Used in UPOV Documents: Botanical Terms).

Comment: IPGRI presents shape in the opposite way – going from round to pointed, on the basis that it is increasing degrees of pointedness.^{mm}

(iv) **Attitude / Growth Habit**

When presenting attitude / growth habit using, for example, the erect to horizontal / upright to prostrate, or the erect to reflexed / upright to pendulous, weeping, etc. range, the state “erect / upright” is always presented as state 1. This is because “erect / upright” is the only fixed state for all versions of this characteristic since the other end of the scale might end with “prostrate”, “reflexed,” etc. according to the individual circumstances.^{mm}

(d) ***Absence / presence***

In characteristics with the states “absent” and “present”, “absent” means total absence on all plants, e.g. of asymmetric leaves, “present” means some leaves on a plant are affected (see also Section 4, Presentation of Characteristics According to Their Type of Expression, for presentation of absent/present characteristics.^{mm}

Comment: former heading “(e) Repetitions of words inside states” deleted

(e) ***Hyphen (-)***

In the English wording, there should be no hyphen for the connection of the words (narrow acute, yellow green, green yellow, etc.). In English, yellow - green with a space before and after the hyphen would mean yellow to green while yellow-green without spaces would mean yellowish green. This differentiation cannot be made in other languages and, to avoid confusion for translation into other languages, hyphens should not be used.

(f) *Numbers*

Numbers lower than 10 should be written. Higher numbers should be indicated numerically.

GN 27 (TG Template: Section 7: column 3) – Notes

The format of notes (numbers) for the states of expression of a characteristic is, in general, related to the type of expression of the characteristic, i.e. whether it is a qualitative, quantitative or pseudo-qualitative characteristic. Guidance is provided in Section 4, Presentation of Characteristics According to Their Type of Expression.

Comment: remainder of section deleted

GN 28 (TG Template: Section 10: TQ 4.2) – Information on method of propagating the variety^{nm}

The examples below indicate how this section can be formatted and some appropriate terms which can be used:

Example 1

“4.2.1 Seed-propagated varieties

“(a) Self-pollination []

“(b) Cross-pollination

(i) population []

(ii) synthetic variety []

“(c) Hybrid []

{...see GN 29 for example...}

“(d) Other []

(please provide details)

“4.2.2 Vegetatively propagated varieties

{...see Example 2...} [... ..]

“4.2.3 Other []”

(please provide details)

Example 2

“4.2.1 Vegetative propagation

“(a) cuttings []

“(b) *in vitro* propagation []

“(c) other (state method) []

“4.2.2 Seed []

“4.2.3 Other []”
(please provide details)

GN 29 (TG Template: Section 10: TQ 4.2) – Information on method of propagation of hybrid varieties^{nm}

“In the case of hybrid varieties the production scheme for the hybrid should be provided on a separate sheet. This should provide details of all the parent lines required for propagating the hybrid e.g.

“*Single Hybrid (SH)*

“(… female parent …) x (… male parent …)

“*Three-Way Hybrid (3WH)*

“(… female line …) x (… male line …)

“=> single hybrid used as female parent x (… male parent …)

“and should identify in particular:

“(a) any male sterile lines

“(b) maintenance system of male sterile lines.”^{oo}

GN 30 (TG Template: Section 10: TQ 5) – Selection of TQ characteristics

The model Technical Questionnaire included in the Test Guidelines seeks information on specific characteristics of importance for distinguishing varieties.

Characteristics to be included in the Technical Questionnaire should comprise:

- (a) the grouping characteristics and
- (b) the most discriminating characteristics,

unless it is considered unrealistic to expect breeders to describe these characteristics.

Where necessary, characteristics in the Test Guidelines can be simplified (e.g. color groups can be created rather than requesting an RHS Colour Chart reference) for inclusion in the Technical Questionnaire (TQ), if this would be of assistance for the breeder completing the TQ. Furthermore, the characteristics contained in the Test Guidelines can be combined or formulated in a way which is more easily recognizable to breeders when presented in the TQ. For example, the TQ for peach may request information on whether the variety is a “melting” or “non-melting” type, which although not a characteristic in the Table of Characteristics would provide information on the states of expression of certain characteristics included in the Table of Characteristics.^{pp}

GN 31 (TG Template: Section 10: TQ 6) – Similar varieties

Drafters of Test Guidelines should provide a suitable example for the individual Test Guidelines concerned e.g.^{qq}

Denomination(s) of variety(ies) similar to your candidate variety	Characteristic(s) in which your candidate variety differs from the similar variety(ies)	Describe the expression of the characteristic(s) for the similar variety(ies)	Describe the expression of the characteristic(s) for your candidate variety
<i>Example</i>	<i>Flower color</i>	<i>orange</i>	<i>orange red</i>

[Annex 4 follows]

ANNEX 4:
COLLECTION OF
APPROVED CHARACTERISTICS

1. The following database contains a collection of characteristics, with their corresponding states of expression, which have already been approved for inclusion in existing Test Guidelines. Drafters are invited to search this database for the characteristic which they wish to use. If the appropriate characteristic, and its corresponding states of expression, are found this can be copied directly into the new Test Guidelines. However, it should be remembered that what may appear to be very similar characteristics in different types of plant, or different organs of the same plant, may in fact be under different types of genetic control. Thus, for example, in one type of plant, or one organ, the characteristic “shape” might be a qualitative characteristic e.g. straight (1), curved (2) but in another type of plant, or organ, it might be a quantitative characteristic e.g. straight or slightly curved (1), moderately curved (2), strongly curved (3).

2. The collection¹ presents the characteristic as it is included in the relevant Test Guidelines. In addition, it provides information on the Test Guidelines from which it has been taken. This information is placed in the blank “header” space in the column for example varieties since this entire column is likely to be “cleared” by the drafter after pasting into his new draft because the example varieties will not be relevant.

¹ The table presented here is not complete. It is intended to illustrate how the final table or database would look.

	English	français	deutsch	español	Test Guidelines Ref. Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
1. C	Ploidy	Ploïdie	Ploidie	Ploidía	TG/31/8 Cocksfoot/Dactyle/Knaulgras/Dactilo	
	diploid	diploïde	diploid	diploide	Konrad	2
	tetraploid	tétraploïde	tetraploid	tetraploide	Athos	4
2. B VG	Foliage: fineness (at vegetative growth stage without vernalization)	Feuillage: finesse (au stade de la croissance végétative sans vernalisation)	Laub: Feinheit (im vegetativen Wachstumsstadium ohne Vernalisation)	Follaje: finura (en estado de crecimiento vegetativo sin vernalización)	TG/31/8 Cocksfoot/Dactyle/Knaulgras/Dactilo	
	fine	fin	fein	fino	Medly	3
	medium	moyen	mittel	medio	Athos	5
	coarse	grossier	grob	grueso	Saborto	7
3. A MS B VG (+)	Plant: tendency to form inflorescences (without vernalization)	Plante: tendance à former des inflorescences (sans vernalisation)	Pflanze: Neigung zur Bildung von Blütenständen (ohne Vernalisation)	Planta: tendencia a formar inflorescencias (sin vernalización)	TG/31/8 Cocksfoot/Dactyle/Knaulgras/Dactilo	
	absent or very weak	nulle ou très faible	fehlend oder sehr gering	ausente o muy débil		1
	weak	faible	gering	débil	Kid, Oberweihst	3
	medium	moyenne	mittel	media	Porthos	5
	strong	forte	stark	fuerte		7
	very strong	très forte	sehr stark	muy fuerte		9

	English	français	deutsch	español	Test Guidelines Ref. Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
1. (*)	Plant: height	Plante: hauteur	Pflanze: Höhe	Planta: altura	TG/197/1 Eustoma/Eustoma/Eustoma/Eustoma	
	short	courte	niedrig	baja	White Coronet	3
	medium	moyenne	mittel	media	Deep Purple, Momo Sen	5
	tall	haute	hoch	alta	Yuki no Mine	7
2.	Stem: thickness	Tige: épaisseur	Stiel: Dicke	Tallo: grosor	TG/197/1 Eustoma/Eustoma/Eustoma/Eustoma	
	thin	fine	dünn	delgado	White Coronet	3
	medium	moyenne	mittel	medio	Momo Sen	5
	thick	épaisse	dick	grueso	Yuki no Mine	7
3.	Stem: number of nodes	Tige: nombre de nœuds	Stiel: Anzahl Knoten	Tallo: número de nudos	TG/197/1 Eustoma/Eustoma/Eustoma/Eustoma	
	few	petit	gering	bajo	White Coronet	3
	medium	moyen	mittel	medio	Momo Sen	5
	many	grand	groß	elevado	Purple Robin	7

	English	français	deutsch	español	Test Guidelines Ref. Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
1.	Tree: vigor	Arbre: vigueur	Baum: Wuchsstärke	Árbol: vigor	TG/41/5 European Plum/Prunier européen/Pflaume/ Ciruelo europeo	
(+)	weak	faible	gering	débil	Ruth Gerstetter	3
	medium	moyenne	mittel	medio	Felsina, Victoria	5
	strong	forte	stark	fuerte	Valor	7
2.	Tree: density of crown	Arbre: densité de la couronne	Baum: Kronendichte	Árbol: densidad de la copa	TG/41/5 European Plum/Prunier européen/Pflaume/ Ciruelo europeo	
	sparse	faible	locker	laxa	Čáčanska najbolja, Reine Claude verte	3
	medium	moyenne	mittel	media	Anna Späth, d'Ente	5
	dense	dense	dicht	densa	Mirabelle de Nancy	7
3.	One-year-old shoot: attitude	Pousse d'un an: port	Einjähriger Trieb: Stellung	Rama de un año: porte	TG/41/5 European Plum/Prunier européen/Pflaume/ Ciruelo europeo	
	erect	dressé	aufrecht	erecto	Čáčanska Julia, Empress, Reine Claude de Bavay	1
	semi-erect	demi-dressé	halbaufrecht	semierecto	d'Ente, Hanita	3
	horizontal	horizontal	waagerecht	horizontal	Graf Brühl, Gräfin Cosel, Reine Claude verte	5
	drooping	retombant	hängend	colgante	Primacotes	7

English	français	deutsch	español	Test Guidelines Ref. Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
1. (*)	Plant: height	Plante: hauteur	Pflanze: Höhe	Planta: altura	TG/82/4 Celery/Céli-branch/Bleich-, Stielsellerie/Apio
very short	très basse	sehr niedrig	muy baja	Afina	1
short	basse	niedrig	baja	Claudius	3
medium	moyenne	mittel	media	Green Sleeves	5
tall	haute	hoch	alta	Martine	7
very tall	très haute	sehr hoch	muy alta	Giant Red	9
2.	Plant: number of lateral shoots	Plante: nombre de tiges latérales	Pflanze: Anzahl Seitentriebe	Planta: número de tallos laterales	TG/82/4 Celery/Céli-branch/Bleich-, Stielsellerie/Apio
absent of very few	nul ou très petit	fehlend oder sehr gering	ausente o muy bajo	Ideal	1
few	petit	gering	bajo	Summit	3
medium	moyen	mittel	medio	Groene Pascal	5
many	grand	groß	alto	Del Valdarno	7
3. (*)	Foliage: attitude	Feuillage: port	Laub: Haltung	Follaje: porte	TG/82/4 Celery/Céli-branch/Bleich-, Stielsellerie/Apio
erect	dressé	aufrecht	erecto	Autumn Gold	1
erect to semi-erect	dressé à demi-dressé	aufrecht bis halbaufrecht	erecto a semierecto	Green Sleeves	2
semi-erect	demi-dressé	halbaufrecht	semierecto	Shamrock	3
semi-erect to horizontal	demi-dressé à horizontal	halbaufrecht bis waagrecht	semierecto a horizontal	Amsterdam Donkergroene	4
horizontal	horizontal	waagrecht	horizontal	Martine	5

[Notes on New Text follow]

NOTES ON NEW TEXT

The comments presented in these notes were made on the drafts of document TGP/7, Development of Test Guidelines, as specified below:

Comments from the TWA (31st Session); TWF (33rd Session); TWO (35th Session); TWV (36th Session) were based on:

TGP/7.1 Draft 1 Guidance for Drafters of Test Guidelines
TGP/7.2 Draft 1 TG Template
TGP/7.4 Draft 1 Procedure for the Introduction and Revision of Test Guidelines

Comments from the TWF (33rd Session), TWO (35th Session) were also based on:

TGP/7.3.1 Draft 1 Standardized UPOV Terms and Explanations: Types of Expression of Characteristics
TGP/7.3.2 Draft 1 Standardized UPOV Terms and Explanations: Harmonized States of Expression of Characteristics

Comments from the Enlarged Editorial Committee of the Technical Committee (TC-EDC), arising at its meeting in January 2003, were based on:

TGP/7 Draft 1 Development of Test Guidelines

Comments from the Technical Committee (39th Session), were based on:

TGP/7 Draft 2 Development of Test Guidelines

Notes

^a Amendment agreed by TC.

^b Drafting change proposed by Australia.

^c The TC agreed that a new section – section 5 – should, in the future, be developed to provide guidance on the development of individual authority Test Guidelines from UPOV Test Guidelines. This would include, in particular, guidance on the selection of suitable characteristics and the development of a set of example varieties.

^d The TC agreed that reference should be made to the role of the Office in preparing Test Guidelines for the TWP meetings.

^e The TC agreed that this section should be redrafted to differentiate between those Test Guidelines at the final draft stage, which the TWP may decide to present to the TC, and other drafts to be considered further at meetings of the TWPs. A deadline of four weeks prior to the TWP meeting would be set for dispatch of the “final draft” Test Guidelines, to the TWP members, by the Office. The deadline for receipt of the documents by the Office, in order to meet this deadline would be set by the Office in conjunction with the Chairperson of the TWP concerned.

^f The TC decided that this is one of the sections of TGP/7 draft 2 which should be considered as a matter which required further discussion before agreement could be reached. It agreed that such sections should be highlighted in the TGP/7 draft 3, to be considered by the TWPs during their sessions in 2003, to ensure it was understood that this text had not been agreed by the TC.

^g The TC agreed that variation of the deadline by the Chairperson of the TWP concerned should be introduced.

Notes (continued)

^h The TC agreed that a deadline for the dispatch of draft Test Guidelines, by the Office, to the members of the TC should be introduced.

ⁱ The TC agreed that an explanation of the role of the TC-EDC, based on document TC/38/9, should be provided in this section.

^j “Latin” name to be replaced by appropriate term e.g “scientific name”, “botanical names in Latin”, “botanical name”, “taxonomic name”. Guidance for presentation of such names in italics to be developed and applied throughout TGP/7.

^k The TWO, supported by the TWF, proposed that the condensed range should be limited to those characteristics which are visually observed. In the case of characteristics which are measured or counted the normal scale should be used.

^l The TWO proposed that state 2 should be termed “medium”. The TWF proposed that state 2 should be termed “medium” or “moderate”.

^m Aspects which might be covered could include, for example: selection of most suitable characteristics; development of a set of example varieties.

ⁿ The TC agreed to consider the possibility of introducing reference to the development of harmonized descriptions of new varieties of plants in the title of the document and the usefulness of a paragraph explaining the purpose of the Test Guidelines.

^o The TC agreed that section 4.1.2 should be redrafted to reflect more closely the text of the General Introduction. Australia maintains that including the “Consistent Differences” heading at the same level as the “Clear Differences” heading implies equal weight under the Convention, which it considers is not the case and therefore suggests that duration issues be compiled in section 3.1. This suggestion had been reflected in section 3.1 (see highlighted first sentence of section 3.1).

^p The TC agreed to consider if the text should be revised to recommend that authorities use an additional place to examine varieties where it is necessary to observe characteristics of the variety, which are relevant for the examination of DUS, but which cannot be observed at the initial location.

^q Amendments proposed by the TC-EDC and agreed by the TC.

^r International Seed Federation (ISF) to provide the Office with examples of how confidential information might be handled in the TQ of the UPOV Test Guidelines. The Office to prepare proposals for further consideration in future drafts to be considered by the TWPs and TC.

^s The TC agreed that consideration should be given to the possible inclusion of this text as standard wording in the TG Template – as opposed to its inclusion as an additional standard wording option.

^t The TC agreed that further consideration should be given to the possible inclusion of this text as additional standard wording. If included, the first sentence should be prefixed with “Where the COYD method is used ...” and “years of test” should be replaced by “growing cycles.” Also, if included, consideration would need to be given to the reference to three years of test.

^u The TC agreed that further consideration should be given to the possible inclusion of this text as additional standard wording. If included, the first sentence should be prefixed with “Where the COYU method is used ...” and “years of test” should be replaced by “growing cycles.”

^v The TC agreed that further consideration should be given to the use of this additional standard wording in the Technical Questionnaire of Test Guidelines. The Chairman of the TWO offered to inform ISF of the purpose of including this requirement. ISF will provide information on their concerns regarding the supply of a color photograph.

^w The TC agreed that consideration to be given to whether the “/or” should be deleted in 3(a).

^x The TC agreed that guidance should be provided concerning the development of color groups for those grouping characteristics where the states of expression in the Table of Characteristics is presented as an RHS Colour Chart number.

^y Second paragraph to be revised to explain that measurements can be influenced by the environment. Third paragraph, second sentence of (ii): “would” to be replaced by “could.”

^z The TC agreed that this section should be revised to clarify the importance of illustrations as an alternative to example varieties.

^{aa} The TC agreed to consider the use of a flow chart presentation of the choices concerning the use of example varieties.

Notes (continued)

^{bb} The TC agreed that this should be revised to cater for quantitative characteristics presented in a condensed scale (e.g. 1, 2, 3).

^{cc} The TC agreed that this should be revised with a better term than “components.”

^{dd} The TC agreed that a new option should be developed based on the development of lists of example varieties to be provided to UPOV. These lists would not be incorporated within the UPOV Test Guidelines, nor as an annex, but would be made available on the UPOV Website.

^{ee} The TWA proposed that the example varieties should be presented in an Annex to the Test Guidelines and presented in a tabulated format as shown in the table presented as Option 2. It considered that a column for example varieties should be retained in the table of characteristics, but this would be left blank for each Testing Authority to complete as appropriate. This blank column would be of a reduced width to reduce the size of the Test Guidelines as far as possible. The TWO welcomed the new proposal developed by the TWA and supported this solution. It also proposed that this approach be adopted for all Test Guidelines and not just those where there was more than a single set of example varieties. The TWF did not agree with the proposal from the TWO to remove the list of example varieties to an annex in all Test Guidelines since it considered that it was important to have the example varieties in the place where most convenient for users. It also emphasized that the use of different sets of example varieties should be minimized. Thus, it did not consider that factors such as phytosanitary requirements were necessarily a basis for developing different sets of example varieties since these could be overcome with reasonable effort. The TWF proposed that, for a situation where multiple sets of example varieties were unavoidable, the different sets of example varieties should be presented in an annex in the same structure as the Table of Characteristics, such that the appropriate set could be easily copied and pasted into the Table of Characteristics. Furthermore, it proposed that this only needs to be done for selected characteristics if the universally accepted varieties could be accepted for the other characteristics.

^{ff} The TWA noted that it was important for all the criteria set out here to be checked before including a characteristic in the Test Guidelines. It noted that, at present, there were no problems with the size of the Table of Characteristics in the Test Guidelines developed by the TWA and proposed that it would be more appropriate to consider any schemes for indicating the extent of use of a characteristic if this became a real issue.

^{gg} The TWV proposed that a consensus should be required for the inclusion of characteristics fulfilling the criteria in order to avoid automatic adoption of such characteristics. The TWV further proposed that a list of characteristics longer than necessary should be avoided and that characteristics proposed but not adopted as standard Test Guidelines characteristics could be placed on a list, which would be then placed on the UPOV Website for further consideration and/or eventual adoption in future as standard Test Guidelines characteristics. The TWA noted that, at present, there were no problems with the size of the Table of Characteristics in the Test Guidelines developed by the TWA and proposed that it would be more appropriate to consider any schemes for indicating the extent of use of a characteristic if this became a real issue. The TWO proposed that the letter coding developed in ASW 3(a) (TGP/7.1 Draft 1) could be used to indicate if a characteristic was suitable only for certain situations e.g. cooler climates. The TWF proposed that further measures were not necessary since the asterisked characteristics clearly identified those characteristics which should be examined in all countries. However, it noted that it may not always be necessary to include all those characteristics fulfilling the requirements for inclusion in the Table of Characteristics if there was a clear consensus within all interested parties to omit certain of these characteristics.

^{hh} The TWO, supported by the TWF, welcomed the clarification provided by this section and recommended that it be presented in a table to make it easier to follow.

ⁱⁱ The TWO, supported by the TWF, proposed that the title of this should be “*Recommendations* for conducting the examination”.

^{jj} Proposal from Mrs. Elise Buitendag (South Africa, Coordinator of TGP/7).

^{kk} The TWO, supported by the TWF, proposed that guidance was needed for the use of the underlined wording to indicate where a characteristic only applied to certain types of varieties.

^{ll} The TWA proposed that the title of part (b) should be deleted and the text should refer to the recognition of independent characteristics.

^{mmm} The expert from IPGRI explained that IPGRI had a different approach to the order of states of expression for growth habit and shapes of the apex. The Technical Director of UPOV agreed that, in the interests of harmonization of describing characteristics, UPOV could consider changing its approach if there was a technical reason for doing so. Indeed, the process of developing TGP/7 “Development of Test Guidelines” was intended to offer an opportunity for all interested parties to comment in this way and welcomed such comments. The expert from IPGRI also agreed that, in the interests of harmonization of describing characteristics, IPGRI could consider changing its approach if there was a technical reason for doing so. With regard to the growth habit

Notes (continued)

characteristic, it was agreed that the only fixed state for all versions of this characteristic was “erect”, since the other end of the scale might end with “prostrate”, “reflexed”, etc. according to the individual circumstances. It was for this reason that “erect” was attributed state 1 since it would always be state 1 in all characteristics. With regard to the shape of the apex, it was agreed that, at first sight, there did not appear to be any clear reason for the order going from “pointed” to “rounded” and it was agreed to check if there was a particular reason

^{mm} The TC-EDC noted that parts of this section had many possibilities and it would not be possible to develop ASW for every case. Therefore, it considered that it would be better to provide a guidance note (GN) for this section.

^{oo} The TWV proposed that this should read: “(b) *maintenance system* of male sterile lines.

^{pp} The TWA proposed that the text following (b) should read “unless it is considered unrealistic to expect breeders to describe these characteristics”. The TWO noted that there was nothing in this guidance note to prevent the introduction of characteristics in the Technical Questionnaire which were not included in the table of characteristics, although it was understood that this was not being encouraged. The TWF agreed that the second sentence should be re-worded as proposed by the TWA. It further proposed that the final sentence should read as follows: “Where necessary, characteristics in the Test Guidelines can be simplified (e.g. color groups can be created rather than requesting an RHS Colour Chart reference) for inclusion in the Technical Questionnaire (TQ), if this would be of assistance for the breeder completing the TQ. Furthermore, the characteristics contained in the Test Guidelines can be combined or formulated in a way which is more easily recognizable to breeders when presented in the TQ. For example, the TQ for peach may request information on whether the variety is a “melting” or “non-melting” type, which although not a characteristic in the Table of Characteristics, would provide information on the states of expression of certain characteristics included in the Table of Characteristics.

^{qq} The TWA, supported by the TWO and TWF, proposed that the examples given should be omitted and suitable examples could be provided for individual Test Guidelines.

[End of document]