



TWA/30/19

ORIGINAL: English

DATE: September 7, 2001

**INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS**  
GENEVA

**TECHNICAL WORKING PARTY  
FOR  
AGRICULTURAL CROPS**

**Thirtieth Session  
Texcoco, Mexico, September 3 to 7, 2001**

REPORT OF CONCLUSIONS OF THE SESSION

*prepared by the Office of the Union*

At its thirtieth session the Technical Working Party for Agricultural Crops (TWA) concluded as follows:

1. Ad Hoc Crop Sub-Groups on Molecular Techniques

The TWA considered it would be useful to introduce a sub-group for a vegetatively propagated agricultural crop and suggested either sugar cane or potatoes might be appropriate. It was noted that a European Union project on potatoes was due to commence shortly but would not produce any results for 2-3 years. As a first step, the Office of the Union (hereafter referred to as "the Office") requested that members encourage the submission of papers, covering work on molecular techniques for these crops, to the forthcoming Working Group on Biochemical and Molecular Techniques and DNA-profiling in Particular (BMT), to be held from November 21 to 23, 2001, in Hanover, Germany.

2. General Introduction

(a) *Draft TG/1/3 (General Introduction)*

The TWA considered the draft General Introduction as presented in document TC/37/9(a), together with the comments made by the Technical Working Party for

Automation and Computer Programs (TWC) and the Technical Working Party for Vegetables (TWV), and proposed the text be revised as shown in Annex 1.

It also proposed that the Technical Committee should request each Technical Working Party (TWP) to draft proposals on how to organize the Table of Characteristics to cope with the “long list” arising from the criteria for Test Guidelines characteristics as specified in the draft General Introduction.

*(b) Associated TGP Documents*

It was proposed that the “Notes for Drafting TGP Documents” (TWA/30/7) be updated as shown in Annex 2.

*(c) Draft TGP/7 “Development of Test Guidelines”*

The TWA proposed that the standard wording for Test Guidelines as presented in document TWA/30/6 Annex 1 be amended as shown in Annex 3.

It also proposed the text for guidance notes for drafters of Test Guidelines, as presented in TWA/30/6, be amended as shown in Annex 4. However, it was unable to consider all of this document and members will submit written comments to the Office, on the remainder, by the end of November 2001.

*(d) TGP/8 “Use of Statistical Procedures in DUS Testing”*

*Section 4: Types of Characteristics and their Scale Levels*

Members will submit written comments on document TWA/30/8, to the Office, by the end of November 2001.

*(e) TGP/9 “Examining Distinctness”*

*Section 3: Examining Distinctness in Different Types of Variety*

Members will submit written comments on document TWA/30/10, to the Office, by the end of November 2001.

*(f) TGP/10 “Examining Uniformity”*

*Section 2: Assessing Uniformity according to the Features of Propagation*

Members will submit written comments on document TWA/30/11, to the Office, by the end of November 2001.

3. Management of Reference Collections

The TWA reviewed the following papers:

*(a) Relationship between varieties of common knowledge and (reference) variety collections (TWA/30/17)*

It was agreed that this paper should be revised to clarify that the technical examination could not always produce a complete examination of distinctness and explain that other measures could be taken in these circumstances. It was also proposed that it should take into

account the use of variety descriptions produced using non-UPOV descriptors. Mr. Guiard (France) agreed to revise the document and, after consultation with Mr. Green (TWV) and the nominated representative for the Technical Working Party for Ornamental Plants and Forest Trees (TWO), present this document as a draft for TGP/4.1 “General Guidance for the Management of Variety Collections”. This would then be sent to the Office for circulation to the other TWP’s in 2002.

Mrs. Rücker (Germany) will draft a paper for TGP/3.2 “Developments and Explanations regarding Varieties of Common Knowledge” for consideration at the next TWA.

*(b) Plant variety description and environmental effects (Denmark and the United Kingdom to prepare documents on barley and wheat)*

It was considered that the paper on Barley (TWA/30/16), in particular, demonstrated the need to re-examine the procedure for selecting asterisked characteristics to achieve useful harmonized descriptions. It also raised the need to consider a wider range of example varieties and the need for more regular updating of example varieties. The presentation on Wheat suggested that the selection of grouping characteristics needed further consideration since many appeared to have variable states of expression for the same variety.

Mr. Deneken (Denmark) advised that he will be investigating whether it is possible to develop a statistical procedure to eliminate the variation in descriptions due to “country effects”. It was noted that one country effect is likely to be due to variation in recording the characteristics and there was recognition of the need to improve the illustration of characteristics in the Test Guidelines to minimize this. In particular, it was suggested that photographs or diagrams should be used to illustrate characteristics, rather than reliance on example varieties for this purpose. However, it was noted that the example varieties were important for standardization of descriptions.

It was proposed that further studies should be undertaken on other crops and that, furthermore, a recommendation should be made to the Technical Committee that such a study should always be undertaken as a part of the process of revising Test Guidelines. It was agreed that the Office, in consultation with Mr. Deneken (Denmark), should draft a model questionnaire for use in any further studies.

Germany agreed to undertake a study on Winter Oilseed Rape (building on a related study presented in TWA/30/12), Australia agreed to do the same for Spring Wheat and the United Kingdom will further develop its study on Winter Wheat. Reports will be presented at the TWA in 2002.

*(c) Software using phenotypic distance for distinctness (TWA/30/15)*

The “GAÏA” system of pre-screening varieties in the examination of distinctness, as developed by France, was presented. The meeting was advised that France will make this software available for UPOV members.

It was noted that the system would need to be adapted for each species or plant variety type and that it was important for an “impact analysis” to be undertaken, to study if different decisions would have been taken, in the past, using such a process.

It was agreed that the process should be explained and developed as a draft for TGP/9.3 “Consideration of All Varieties of Common Knowledge in the Examination of Distinctness”. The draft paper will be discussed with Mr. van Ettehoven (TWV), and the nominated person from the TWO, before circulation to all TWP’s in 2002.

#### 4. Process for Establishing Distinctness

It was agreed that, taking into account the comments made at the TWA, Mr. Guiard (France)/Mr. Bonhuis (Netherlands) and Mr. Hossain (Australia) would develop documents TWA/30/9 Corr. and TWA/30/9 Add.1, respectively, into drafts for TGP/9.1 “General Procedures for Determining Distinctness”. The former would be presented as an example procedure for an “official” testing system and the latter for a “breeder” testing system. These drafts would be circulated to Mr. Semon (TWV) and the nominee from the TWO before sending to all TWP’s in 2002.

It was also agreed that Mr. Guiard (France) would draft a paper for the use of the hybrid formula on the basis of written comments (by end November 2001) on TWA/30/13 (Use of Parental Formula for Examining Distinctness in Hybrids) and TWA/28/16 (“DUS Testing of Oilseed Rape Varieties).

#### 5. Example Varieties

It was agreed that Mr. Guiard would prepare guidelines for the development of Example Varieties for inclusion in TGP/7.

The TWA decided to set up a project for exchanging seed of selected varieties between interested countries, with descriptions to be produced by each or most participants in their countries. These descriptions would then be sent to a coordinator for a report to be produced.

Projects were proposed for Spring Oats (Coordinator: Sweden), Lupins (Coordinator: South Africa) and White Clover (Coordinator: New Zealand). A project for rice may be established if a coordinator can be identified.

The Office will prepare a circular to identify all possible participants for these crops and then prepare a protocol in conjunction with the coordinators.

#### 6. Interim Report on the Questionnaire on the Level of Involvement of the Applicant in the Growing Test (TC/37/7 Rev.)

The Office presented an interim report on the results of the questionnaire. The TWA had some concerns that the presentation of the results did not reflect the degree of involvement of the breeder in DUS Testing and, in particular, that breeder involvement in some countries was only for minor species. It was suggested that there should be a form of weighting based on the level of use in each country.

#### 7. Draft Test Guidelines to be Presented to the Technical Committee

Draft Test Guidelines on the following crops will be sent to the professional organizations and then submitted to the Technical Committee for approval in April 2002, on the basis of the amendments (subject to confirmation by sub-group rapporteurs) presented in Annex 5.

Cocksfoot (TG/31/7 (proj.))  
 Field Bean (TG/08/5(proj.))  
 Sugarcane (TG/186/1(proj.))  
 Turnip Rape (TG/185/2(proj.)) – amendments not available at present  
 Meadow Fescue, Tall Fescue (TG/39/7(proj.))  
 Tobacco (TWA/29/14; TG/195/1(proj.))  
 Rape Seed (TG/36/6; Revision of Chapter IV; TWA/30/18)

8. Draft Test Guidelines to be Discussed at the TWA in 2002

The following draft Test Guidelines require further revision and discussion at the TWA in 2002:

Rice (TWA/30/14)  
 Lotus (TG/193/1(proj.))  
 Potato (TG/23/5; (TWA/30/3)  
 White Clover (TG/38/6; TWA/30/4)  
 Lupins (TG/66/3; TWA/30/2)

First drafts of Test Guidelines of the following crops will be produced for discussion at the TWA in 2002:

Coffee	(Brazil, Kenya)
Grain Amaranth	(Mexico, South Africa)
Medicago (excl. sativa)	(Australia, France, South Africa, Spain)
Lucerne (Revision)	

9. Date and Place of Next Session

The thirty-first session of the TWA will be held in Russia or Brazil in June/July of 2002. Offers to host subsequent sessions of the TWA were received, dependent on the location of the session in 2002, as follows:

2002	Russia	or	Brazil
2003	Japan		
2004	Brazil	or	New Zealand
2005	New Zealand	or	South Africa
2006	South Africa		

10. Nomination of Chairman

The TWA agreed to nominate Mr. Carlos Gomez-Etchebarne, to the Technical Committee, as the next Chairman of the TWA

[Annex 1 follows]

**Proposed Amendments to TC/37/9(a)**

1. INTRODUCTION

1. According to Article 7 of the 1961/72 and 1978 Acts and Article 12 of the 1991 Act of the UPOV Convention, protection can only be granted in respect of a new plant variety after examination of the variety has shown that it complies with the requirements for protection laid down in those Acts and, in particular, that the variety is distinct (D) from any other commonly known variety and that it is sufficiently uniform (U) and stable (S), or “DUS” in short. The examination, or “DUS Test,” is based mainly on growing tests, carried out by the authority competent for granting plant breeders' rights or by separate institutions, such as public research institutes, acting on behalf of that authority or in some cases on the basis of growing tests carried out by the breeder<sup>1</sup>. The examination generates a description of the variety, using its relevant characteristics (e.g. plant height, leaf shape, time of flowering), by which it can be defined as a variety in terms of Article 1(vi) of the 1991 Act of the Convention.

2. The purpose of this document (the “General Introduction”) and the associated “TGP” series of documents is to set out the principles which are used in the examination of DUS. The identification of those principles ensures that examination of new plant varieties is conducted in a harmonized way throughout the Contracting Parties of UPOV. This harmonization is important because it facilitates cooperation in DUS testing and also helps to provide effective protection through the development of harmonized, internationally recognized descriptions of protected varieties.

8. In addition, the absence of Test Guidelines for the species or variety grouping concerned will obviously lead the DUS examiner to resort to this General Introduction, and there is a specific chapter (Chapter 9, “Conduct of DUS Testing in the Absence of Test Guidelines”) in this document for such an eventuality.

2. THE EXAMINATION OF DISTINCTNESS, UNIFORMITY AND STABILITY (“DUS TESTING”)

2.4 Characteristics as the Basis for Examination of DUS

16. For any variety to be capable of protection it must first be clearly defined. Only after a variety has been defined can it be finally examined for fulfilment of the DUS criteria required for protection. All Acts of the UPOV Convention have established that a variety is defined by its characteristics and that those characteristics are therefore the basis on which a variety can be examined for DUS.

---

<sup>1</sup> In this document the term “breeder” is as defined in Article 1(iv) of the 1991 Act of the UPOV Convention

### 3. COOPERATION IN DUS TESTING

#### 3.1 Cooperation Between Testing Authorities

27. The ultimate form of international cooperation is a “centralized” testing system where the entire examination is carried out by one authority on behalf of other Contracting Parties, regardless of the variety concerned or the ~~applicant~~ breeder. This could, for example, be for a specific region ~~for example~~, or, in the case of ~~glasshouse-tested~~ plants tested in a controlled environment (e.g. greenhouse or laboratory), for most if not all Contracting Parties.

#### 3.2 Cooperation with Breeders and Applicants

29. Close cooperation with breeders has always been promoted by UPOV, even in the case of Contracting Parties with a strict system of government-conducted testing. Some Contracting Parties have a system whereby breeders ~~or applicants~~ are asked to perform the whole test. They are required to conduct the DUS test and produce a test report in accordance with the principles contained in this document. The decision on DUS is based entirely on the test report supplied by the breeder ~~or applicant~~, although the Contracting Party may verify the results, for example, by independent examination and publication of the variety description.

30. UPOV has drawn up a list of conditions for the examination of a variety on the basis of DUS tests carried out by or on behalf of ~~applicants or~~ breeders. Details of the conditions are given in document TGP/6, “Arrangements for DUS testing.”

31. Document TGP/6, “~~DUS testing by the Applicant/Breeder~~, Arrangements for DUS Testing” also gives useful information on the different possibilities of ~~applicant~~ breeder involvement in the growing tests.

### 4. CHARACTERISTICS USED IN DUS TESTING

#### 4.1 Characteristics as the Basis for DUS Testing

#### 4.2 Selection of Characteristics

35. For inclusion in the Test Guidelines, further criteria are set out in Chapter 4.8, “Functional Categorization of Characteristics” and in document TGP/7, “Development of Test Guidelines.” ~~However, t~~The characteristics included in the individual Test Guidelines are not necessarily exhaustive and may be expanded with additional characteristics if that proves to be useful and the characteristics meet the conditions set out above.

#### 4.4 Types of Expression of Characteristics

##### 4.4.1 Qualitative Characteristics

38. “Qualitative characteristics” are those that are expressed in discontinuous states (e.g. sex of plant: dioecious female (1), dioecious male (2), monoecious unisexual (3), monoecious hermaphrodite (4)). These states are self-explanatory and independently meaningful. All states are necessary to describe the full range of the characteristic, and every form of

expression can be described by a single state. The ~~states do not necessarily have any logical order~~order of states is not important. ~~As a rule~~ In general, the characteristics are not influenced by environment.

#### 4.4.2 Quantitative Characteristics

39. “Quantitative characteristics” are those ~~whose expression can be recorded on a one-dimensional, linear scale and which show continuous variation from one extreme to the other~~that can show the full range of variation from one extreme to the other and whose expression can be recorded on a one-dimensional, continuous or discrete, linear scale. The range of expression is divided into a number of states of expression for the purpose of description (e.g. length of stem: very short (1), short (3), medium (5), long (7), very long (9)). The division seeks to provide, as far as is practical, an even distribution across the scale. The Test Guidelines do not specify the difference needed for distinctness. The states of expression should, however, be meaningful for DUS assessment.

#### 4.5 Observation of Characteristics

##### 4.5.2 Bulk Samples

42. If it is necessary to examine characteristics in the form of bulk samples specific guidance will be considered in document TGP/108, “Use of Statistical Procedures in DUS Testing~~Examining Uniformity.~~”

#### 4.6 Special Characteristics

##### 4.6.1 Characteristics Expressed in Response to External Factors

43. Characteristics based on the response to external factors, such as living organisms (e.g. disease resistance characteristics) or chemicals (e.g. herbicide resistance characteristics), may be used provided that they fulfil the criteria specified in chapter 4.2. In addition, because of the potential for variation in such factors, it is important for those characteristics to be well defined and an appropriate method established which will ensure consistency in the examination. More details can be found in document TGP/12, “Special Characteristics.”

##### 4.6.2 Chemical Constituents

44. Characteristics based on chemical constituents may be accepted provided that they fulfil the criteria specified in chapter 4.2. It is important for those characteristics to be well defined and an appropriate method established for examination. More details can be found in document TGP/12, “Special Characteristics.”

##### 4.6.3 Combined Characteristics

45. A combined characteristic is a simple combination of a small number of characteristics. Provided that the combination is biologically meaningful, characteristics that are assessed separately may subsequently be combined, for example the ratio of length to width, to produce such a combined characteristic. Combined characteristics must be examined for



distinctness, uniformity and stability to the same extent as other characteristics. In some cases these combined characteristics are examined by means of ~~sophisticated~~ techniques such as Image Analysis. In these cases the methods for appropriate examination of DUS are specified in document TGP/12, “Special Characteristics.”

#### 4.8 Functional Categorization of Characteristics

##### Functional Categories of Characteristics

Type	Function	Criteria
<p><del>Standard</del> Test Guidelines Characteristic</p>	<p><u>1.</u> Characteristics that are approved by UPOV for examination of DUS and from which Contracting Parties can select those suitable for their particular circumstances.</p>	<p>1. Must satisfy the criteria for use of any characteristic for DUS as set out in Chapter 4.2.</p> <p>2. Must have been used to develop a variety description by at least one Contracting Party.</p> <p>3. 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.</p>
<p>Asterisked Characteristic</p>	<p><u>1.</u> Characteristics that are important for the international harmonization of variety descriptions.</p>	<p><u>1. Must be a characteristic included in the Test Guidelines</u></p> <p><del>2.</del> Should always be examined for DUS and included in the variety description by all Contracting Parties except when the state of expression of a preceding characteristic or regional environmental conditions render this inappropriate.</p> <p><del>3.</del> Accepted as useful for function 1.</p> <p><del>4.</del> Particular care should be taken before selection of disease resistance characteristics.</p>

## 5. EXAMINING DISTINCTNESS

### 5.2 Varieties of Common Knowledge

#### 5.2.1 Criteria for a Variety

52. A variety whose existence is a matter of common knowledge must satisfy the definition of a variety set out in Article 1(vi) of the 1991 Act of the UPOV Convention, but this does not necessarily require fulfilment of the DUS criteria required for grant of a breeder's right under the UPOV Convention.

#### 5.2.3 Common Knowledge

54. Specific aspects which should be considered to establish common knowledge include, among others:

- (b) the filing of an application for the grant of a breeder's right or for the entering of a variety in an official register of varieties, in any country, ~~which~~ is deemed to render that variety a matter of common knowledge from the date of the application, provided that the application leads to the grant of a breeder's right or to the entering of the variety in the official register of varieties, as the case may be;

### 5.3 Clearly Distinguishing a New Variety

#### 5.3.1 Comparing Varieties

56. It is necessary to examine distinctness in relation to all varieties of common knowledge. However, a systematic individual comparison may not be required in relation to those varieties of common knowledge that are within a group known to have specific expressions of characteristics and reliably ensuring that such varieties will be distinct from the candidate variety. In addition, certain procedures (e.g. publication of variety descriptions or bilateral cooperation) may be developed to allow such an approach in some circumstances where there cannot be absolute certainty that all the varieties within such a group will be distinct from the candidate variety, but only where those supplementary procedures provide an effective examination of distinctness overall. Such procedures may also be developed to address varieties of common knowledge for which living plant material is known to exist (see chapter 5.2.2) but where, for practical reasons, material is not readily accessible for examination. Any such procedures will be set out in document TGP/9, "Examining Distinctness."

58. A Technical Questionnaire, completed by the ~~applicant~~breeder and submitted with the application, specifies characteristics of importance for identifying the varieties most similar to the candidate. Where necessary those varieties are grown and directly compared with the candidate.

#### 5.3.2 Clearly Distinguishing Varieties ~~by Their~~Using Characteristics

#### 5.3.3 The Criteria for Distinctness using Characteristics

63. The UPOV Convention does not elaborate the term “clearly distinguishable.” ~~h~~However, in order to provide some guidance on the interpretation of the term, the following basis has been developed for the use of characteristics to clearly distinguish varieties.

#### 5.3.3.1 Consistent Differences

64. One means of ensuring that a difference in a characteristic, observed in a growing trial, is sufficiently consistent is to examine the characteristic on at least two independent occasions. This can be achieved in both annual and perennial varieties by observations made on plantings in two different seasons, or in the case of other perennial varieties by observations made in two different seasons after a single planting. Guidance on the possible use of other approaches, such as two different ~~locations~~ environments in the same year, is explored in document TGP/9, “Examining Distinctness.”

65. However, in some circumstances the influence of the environment is not such that a second growing cycle is required to provide assurance that the differences observed between varieties are sufficiently consistent. If the growing ~~environment conditions~~ of the crop ~~is~~ are controlled ~~consistent~~, for example in a greenhouse with ~~controlled~~ regulated temperature and light, it may not be necessary to observe two growing cycles to be confident that any differences observed could be considered to be sufficiently consistent in that environment, although this will also be dependent on the features of propagation ~~allowing confidence in the consistency of the observation~~.

66. The individual Test Guidelines specify whether several independent growing cycles are required to show sufficient consistency ~~(e.g. several years or in certain cases several independent locations or different independent environments)~~, or whether for certain species the growing test could be made in one growing cycle.

#### 5.3.3.2 Clear Differences

##### 5.3.3.2.1 *Qualitative Characteristics*

68. In qualitative characteristics the difference between two varieties may be considered clear if ~~the one or more~~ characteristics ~~show~~ have expressions that fall into two different states in the Test Guidelines. Varieties should not be considered distinct for a qualitative characteristic if they have the same state of expression.

#### 5.4 Interpretation of Observations for the Assessment of Distinctness Without the Application of Statistical Methods

73. As explained in Chapter 5.3.3.2.1, “Qualitative Characteristics,” for such characteristics the difference between two varieties may be considered clear if ~~the one or more~~ characteristics ~~show~~ have expressions that fall into two different states in the Test Guidelines.

#### 5.5 Interpretation of Observations for the Assessment of Distinctness with the Application of Statistical Methods

##### 5.5.1 General

77. Document TGP/8, “~~Good Statistical Practices for DUS Testing~~ Use of Statistical Procedures in DUS Testing,” provides guidance on good statistical practices for DUS

assessment and includes ~~keys~~ for the choice of methods in relation to the data structure. ~~are given in document TGP/9, “Examining Distinctness.”~~

## 5.5.2 Visually Assessed Characteristics

### 5.5.2.2 Quantitative Characteristics

82. A direct comparison between two similar varieties is always recommended, since direct pair-wise comparisons are the most reliable. In each comparison, a difference between two varieties is acceptable as soon as it can be assessed visually and could be measured, although such measurement might be impractical or require unreasonable effort.

83. A simple ~~criterion~~ statistical basis for establishing distinctness is that of consistent differences ~~where~~ differences of the same sign between varieties in pair-wise comparisons ~~are of the same sign~~ (e.g. variety A is consistently and sufficiently greater than B), provided that they can be expected to recur in subsequent trials. The number of comparisons must be sufficient to ensure that the varieties are clearly distinguishable.

## 5.5.3 Measured Characteristics

### 5.5.3.1 Self-Pollinated and Vegetatively Propagated Varieties

87. UPOV has endorsed several statistical methods for the handling of measured quantitative characteristics. One method established for ~~vegetatively propagated and self-pollinated~~ and vegetatively propagated species varieties is that varieties can be considered clearly distinguishable if the difference between two varieties equals or exceeds the Least Significant Difference (LSD) at a specified probability level with the same sign over an appropriate period, even if they are described by the same state of expression. This is a relatively simple method but is considered appropriate for ~~vegetatively propagated and self-pollinated~~ and vegetatively propagated species varieties because the level of variation within such varieties is relatively low, ~~i.e. they are quite uniform~~. Further details are provided in document TGP/9, “Examining Distinctness.”

### 5.5.3.2 Cross-Pollinated Varieties

88. UPOV has developed a method known as the Combined Over Years Distinctness (COYD) analysis, which takes into account variations between years and is particularly useful for cross-pollinated, including synthetic, varieties. This method requires the size of the differences to be consistent over the years and takes into account the variation between years. It is explained further in document TGP/9, “Examining Distinctness.” A refinement to the COYD analysis is also provided which should be used to adjust the COYD analysis when environmental conditions cause a significant change in the spacing between variety means in a year, such as when a late spring causes the convergence of heading dates. It is supplemented by a further LSD method for cases where few varieties in the growing tests lead to less than about 20 degrees of freedom for the estimation of standard error. Its main use is for measurement in cross-pollinated and synthetic varieties, but if desired it can also be used for measurement in self-pollinated and vegetatively propagated ~~or self-fertilized~~ varieties. Where COYD analysis cannot be used because the statistical criteria are not fulfilled, non-parametric procedures can be considered. For more details on the handling of measured quantitative characteristics see document TGP/9, “Examining Distinctness.”

## 5.6 General Guidelines for Determining Distinctness

89. Individual Contracting Parties may develop their own systematic way of determining distinctness, based on the principles laid down in this document. However, because the same general guidance on determining distinctness is applicable across many Test Guidelines ~~do not provide specific practical guidance on examining distinctness, general guidance on the practical application of the UPOV principles will be~~ this is developed in a separate document; TGP/9, “Examining Distinctness,” and not reproduced in the individual Test Guidelines.

## 6. EXAMINING UNIFORMITY

### 6.3 Particular Features of Propagation

92. The UPOV Convention links the uniformity requirement for a variety to the particular features of its propagation. This means that the absolute level of uniformity required for vegetatively propagated varieties, truly self-pollinated varieties, mainly self-pollinated varieties, inbred lines of hybrid varieties, cross-pollinated varieties, mainly cross-pollinated varieties, synthetic varieties and hybrid varieties will, in general, be different.

#### 6.3.1 Self-Pollinated and Vegetatively Propagated Varieties

##### 6.3.1.3 Statistical Basis for Setting Numbers of Off-Types

96. The acceptable number of off-types tolerated in samples of various sizes is often based on a fixed population standard and acceptance probability. The population standard can be expressed as the percentage of off-types to be accepted if all individuals of the variety could be examined. The probability of correctly accepting that a variety is uniform is called the acceptance probability. Based on statistical calculations for population standards and acceptance probabilities, the recommended population standard and acceptance probability ~~used is~~ are stated in the individual Test Guidelines. The Test Guidelines also state recommend the maximum number of off-types tolerated for a given sample size. More detailed information can be found in document TGP/10, “Examining Uniformity.”

##### 6.3.1.3.2 Mainly Self-Pollinated Varieties and Inbred Lines of Hybrid Varieties

98. For the purpose of DUS testing, mainly self-pollinated varieties are those that are not fully self-pollinated but are treated as self-pollinated for testing. For these, as well for as inbred lines of hybrid varieties, a higher tolerance of off-types is-can be accepted, compared to truly self-pollinated and vegetatively propagated varieties. This is explained further in document TGP/10, “Examining Uniformity”.

#### 6.3.2 Cross-Pollinated Varieties

99. Cross-pollinated varieties, including mainly cross-pollinated and synthetic varieties, generally exhibit wider variations within the variety than vegetatively propagated or self-pollinated varieties and inbred lines of hybrid varieties, and it is more difficult to determine off-types. Therefore, ~~R~~relative tolerance limits, for the range of variation, are set by comparison with comparable varieties or types already known. This means that the candidate variety should not be significantly less uniform than the comparable varieties. For more detailed information and guidance on setting standards for new types and species, see

documents TGP/10, “Examining Uniformity,” and TGP/13, “Guidance for New Types and Species.”

### 6.3.3 Assessment of Uniformity in Hybrid Varieties

#### 6.3.3.1 General

103. The assessment of uniformity in hybrid varieties depends on the type of hybrid, i.e. whether it is a single-cross hybrid or another type, and whether it is a hybrid resulting from inbred, or vegetatively propagated, parent lines or from cross-pollinated parents.

#### 6.3.3.4 Multiple-Cross Hybrid Varieties

107. For other than single-cross hybrids (e.g. three-way crosses or double crosses), a segregation of certain characteristics is acceptable if it is compatible with the method of propagation of the variety i.e. (a) If the heredity of a clear-cut segregating characteristic is known, it is required to behave in the predicted manner: ~~(b)~~ If the heredity of the characteristic is not known, it is treated in the same way as other cross-pollinated varieties, i.e. the tolerance is set by existing comparable varieties (see Chapter 6.3.25).

108. ~~(e)~~ For setting a tolerance for the occurrence of inbred parent plants, the same considerations apply as for a single-cross hybrid variety (see Chapter 6.3.3.2).

## 7. EXAMINING STABILITY

### 7.3 Method of Examination of Stability

#### 7.3.1 General

111. It is not usually possible to perform tests of stability that produce results as certain as those of the testing of distinctness and uniformity. However, experience has demonstrated that, in general, when a ~~submitted sample~~ variety has been shown to be uniform ~~the material~~ it can also be considered to be stable. Furthermore, if the variety is not stable, material produced will not conform to the characteristics of the variety, and where the breeder is unable to provide material conforming to the characteristics of the variety the breeder’s right may be cancelled.

TABLE  
ASSOCIATED DOCUMENTS

Planned document	Title
TGP/8	<u>Use of Statistical Procedures in DUS Testing</u> <del>Good Statistical Practices for DUS Testing</del>

[Annex 2 follows]

**Update of TWA/30/7**

Ref.		Title
TG/00	Office	<b><u>List of TGP Documents and Latest Issue Dates</u></b> (Coordinator: Office of the Union)
TGP/1	Office	<b><u>General Introduction With Explanations</u></b> (Coordinator: Office of the Union)
TGP/2	Office	<b><u>List of Test Guidelines Adopted by UPOV</u></b> (Coordinator: Office of the Union)

TGP/3		<b>VARIETIES OF COMMON KNOWLEDGE</b> (Coordinator: Office of the Union)
3.1	Office (Draft: CAJ/43/2)	The Notion of Breeder
3.2	(Mrs. Scott, <b>(GB)</b> <b>TWA</b>	Developments and Explanations Regarding Varieties of Common Knowledge <b><u>Mrs. Rucker (DE) to draft paper for consideration at the TWA in 2002.</u></b>

TGP/4		<b>MANAGEMENT OF VARIETY COLLECTIONS</b> (Coordinator: Mr. Guiard, FR) <b><i>TWA COMMENT: May be necessary, in future, to merge with TGP/9 "Examining Distinctness"</i></b>
4.1	TWA  TWO TWO	<b>General Guidance for the Management of Variety Collections</b> <b>Mr. Guiard, (FR) (<del>Draft: TC/36/7-4A&amp;B</del>) to <del>draft</del> to produce draft for circulation to TWPs in 2002, based on TWA comments on TWA/30/17 (<u>Relationship between varieties of common knowledge and [reference] variety collections</u>) and discussions with Mr. Green (GB) and TWO representative.</b> <b>Mr. Green (GB) to participate in development</b> <b>TWO to participate in development</b>
4.2	TWF	<b>Guidance for variety collections which are planted at different times to candidate varieties (e.g. trees)</b>

TGP/5		EXPERIENCE AND COOPERATION IN DUS TESTING (Coordinator: Office of the Union)
5.1	C/27/15, Annex III	Model Administrative Agreement for International Cooperation in the Testing of Varieties
5.2	C/XVIII/9 Add. Annexes II and IV, Part I  TWV  <u>TWA</u>	UPOV Model Form for the Application for Plant Breeders' Rights  The TWV proposed that the application form should contain a declaration from the breeder regarding freedom from factors which may affect the expression of characteristics (see TC/37/9(a): 2.5.3) and advising of any use of e.g. propagation methods which might also affect the expression of characteristics.  <u>1. Comment: The need to move the declaration regarding freedom from such factors will depend on the CAJ advice on the legal status of information supplied in the TQ.</u>  <u>2. Comment: The TQ information on authorization for release (section 8) may also need to be moved to the application form depending on the status of the information provided in the TQ.</u>
5.3	TC/26/6, Annex II, pages 1-3  <u>TWA</u>	Technical Questionnaire to be Completed in Connection with an Application for Plant Breeders' Rights  <u>Comment: This may need to be modified according to advice from the CAJ on the status of the information provided in the TQ.</u>
5.4	TC/XXV/12 Annex, page 6	UPOV Request for Examination Results
5.5	TC/XXV/12 Annex, page 7	UPOV Answer to the Request for Examination Results
5.6	TC/XXV/12 Annex, page 1	UPOV Report on Technical Examination
5.7	TC/26/6, Annex I, pages 1-3	UPOV Variety Description
5.8	TC/XXV/12 Annex, page 5  <u>TWV/ TWA</u>	UPOV Interim Report on Technical Examination  <u>Propose the drafting of guidelines for the use of, and arrangements for, interim reports.</u>
5.9	C/(34)/5	Cooperation in Examination



TGP/5		<b>EXPERIENCE AND COOPERATION IN DUS TESTING</b> (Coordinator: Office of the Union)
5.10	TC/(36)/4	List of Species in Which Practical Technical Knowledge Has Been Acquired or For Which National Guidelines Have Been Established
5.11	Office (Draft: GB paper)	Notification of Additional Characteristics

TGP/6		<b>ARRANGEMENTS FOR DUS TESTING</b> (Coordinator: Office of the Union)
6.1	TWO	Summary of Options for Arranging DUS Testing TWO to draft proposal
6.2	C/27/15, Annex III	Model Administrative Agreement for International Cooperation in the Testing of Varieties
6.3	<u>TWA</u>	<del>Consideration of Applicant</del> <u>Guidelines for the Involvement of Breeders</u> in the Growing Test <u>Mr Hossain (AU) to produce revised draft of TC/36/7 6B, based on comments from TWA in 2000 and responses to TC/37/7 as reported by the Office of the Union.</u>
6.4	C/27/15, Annex II	Declaration on the Conditions for the Examination of a Variety Based on Trials Carried Out by or on Behalf of Breeders
6.5	<u>Office</u>	<del>Survey Information</del> on the Level of Involvement of the <del>Applicant Breeder</del> in the Growing Test <u>Office to produce report based on responses to TC/37/7 Rev.</u>

TGP/7	(Draft: TC/37/10)	<b>DEVELOPMENT OF TEST GUIDELINES</b> (Coordinator: Mrs. Buitendag, ZA)
-------	-------------------	--

TGP/8		<b>USE OF STATISTICAL PROCEDURES IN DUS TESTING</b> (Coordinator: UPOV Office)
8.1	TWC TWO	Introduction (S. Gregoire <u>(FR)</u> , L. Keizer <u>(NL)</u> to draft for TWC meeting in 2002) TWO to participate in development
8.2	TWC	Validation of Data and Assumptions (K. Kristensen <u>(DK)</u> , J. Thissen <u>(NL)</u> to draft for TWC meeting in 2002)

TGP/8		<b>USE OF STATISTICAL PROCEDURES IN DUS TESTING</b> (Coordinator: UPOV Office)
8.3	TWC	<p>Experimental Design Practices (to cover TGP/7)</p> <p>8.3.1 Selection of trial site</p> <p>8.3.2 Size and elements of the trial: plot size and shape, no. of replications, design etc...</p> <p>8.3.3 Sampling from the trial</p> <p>8.3.4 Type I and Type II errors</p> <p>(J. Thissen <a href="#">(NL)</a>, U. Meyer <a href="#">(DE)</a> to draft by end July 2001)</p> <p><u>Office of the Union to circulate, to other TWPs, for comment during 2001.</u></p>
8.4	TWC	<p>Type of Characteristics and their Scale Levels</p> <p>8.4.1 Ratio scale data</p> <p>8.4.2 Interval scale data</p> <p>8.4.3 Ordinal scale data</p> <p>8.4.4 Nominal scale data</p> <p>8.4.5 Combined scale data</p> <p>(U. Meyer to draft by 15<sup>th</sup> June 2001)</p>
8.5	TWC	<p>Statistical Methods for DUS Examination</p> <p>(S. Watson, A. Roberts <a href="#">(GB)</a> to prepare list of methods, including multivariate analysis, for TWC meeting in 2002)</p>
8.6	TWC	<p>Examining DUS in Bulk Samples</p> <p>(K. Kristensen <a href="#">(DK)</a> to draft for TWC meeting in 2002)</p>

TGP/9		<b>EXAMINING DISTINCTNESS</b> (Coordinator: UPOV Office)
<u>9.81</u>	<p>TWV TWA</p> <p>TWO</p>	<p><u>Model systems General Procedures</u> for Determining Distinctness</p> <p>Mr. Semon (CPVO) to draft paper for presentation to TWV and other TWP's in 2002.</p> <p><u>Mr. Guiard (FR) and Mr. Hossain (AU) to draft revised paper based on TWA comments on TWA/30/9 Corr and TWA/30/9 Add.1, for "official" and "breeder" testing system respectively. Revised papers to be sent to Mr. Semon (CPVO) and the TWO representative prior to circulation to all TWP's in 2002. TWA wish to participate in development of proposal</u></p> <p>TWO wish to participate in development of proposal</p>
<u>9.12</u>	<u>TWA</u>	<p>Consideration of the Application of Statistical Methods (Make reference to TGP/8)</p> <p><u>TWA to draft this section only after the development of TGP/8.1 and the completion of all other sections of TGP/9, in order to provide a comprehensive summary.</u></p>

TGP/9		<b>EXAMINING DISTINCTNESS</b> <i>(Coordinator: UPOV Office)</i>
<p><b>9.23</b></p> <p>TWV</p> <p><b>TWA</b></p> <p>TWO</p>		<p><b>Consideration of All Varieties of Common Knowledge in the Examination of Distinctness:</b></p> <p>9.2.1 Categorization of Varieties (Test Guidelines)</p> <p>9.2.2 Pre-screening using variety descriptions (Descriptions from the same or different locations)</p> <p>9.2.3 Organizing the growing trial (Grouping; Randomization)</p> <p>Mr. van Ettehoven (NL) to draft paper for presentation to TWV and other TWP's in 2002.</p> <p><b><u>1. Mr. Guiard (FR) to develop document on the basis of the GAIA system as explained in TWA/30/15. This paper to be discussed with Mr. van Ettehoven (NL) and the TWO nominee, followed by circulation to the TWP's in 2002.</u></b></p> <p><b><u>2. TWA propose a link between this section and TGP/4 " Management of Variety Collections".</u></b></p> <p>TWO wish to participate in development of proposal</p>
<p><b>9.34</b></p> <p>TWC</p> <p>TWA</p> <p>TWO</p> <p>TWF</p>		<p><b>Examining Distinctness in Different Types of Variety</b></p> <p>(B. Rücker <b>(DE)</b> to draft by end July 2001)</p> <p>TWA to participate in development <b><u>by commenting on TWA/30/10 (Draft Section for TGP/9 Examining Distinctness).</u></b></p> <p>TWO to participate in development</p> <p>TWF to participate in development of section on Rootstocks</p>
<p><b>9.45</b></p> <p>TWA</p>		<p><b>Use of the Parental Formula for Examining Distinctness in Hybrids</b></p> <p><b><u>TWA to draft Mr Guiard (FR) to produce revised draft on basis of comments on TWA/30/13 (Use of Parental Formula for Examining Distinctness in hybrids) and TWA/28/16 (DUS Testing of Oilseed Rape Varieties).</u></b></p>
<p><b>9.56</b></p> <p>TWC</p> <p>(TWC/ 17/10 and 18/2)</p>		<p><b>Use of Multiple Locations in the Examination of Distinctness</b></p> <p>(S. Gregoire <b>(FR)</b> to draft for TWC meeting in 2002)</p>
<p><b>9.67</b></p> <p>TWC</p> <p>(TC/33/7)</p> <p>(TWC/ 14/6)</p>		<p><b>Recommended Statistical Methods</b></p> <p>9.6.1 COYD</p> <p>9.6.2 LSD</p> <p>Annex Probability levels</p> <p>(S. Watson, A. Roberts <b>(GB)</b> to draft for TWC meeting in 2002)</p>
<p><b>9.7</b></p> <p>TWV</p> <p>TWA</p> <p>TWO</p>		<p><b><u>Model systems for Determining Distinctness</u></b></p> <p><b><u>Mr. Semon (CPVO) to draft paper for presentation to TWV and other TWP's in 2002.</u></b></p> <p><b><u>TWA wish to participate in development of proposal</u></b></p> <p><b><u>TWO wish to participate in development of proposal</u></b></p>

TGP/10		<b>EXAMINING UNIFORMITY</b> (Coordinator: UPOV Office)
10.1	UPOV Office  TWO	Considering the Application of Statistical Methods (Make reference to TGP/8)  TWO wish to participate in development
10.2	TWC	Assessing Uniformity according to the Features of Propagation (to include explanation of relative tolerance) 10.2.1 Uniformity using Off-Types 10.2.2 Uniformity assessment on the basis of Variances  <b>(B. Rücker (DE) to draft by end of July 2001 for circulation to TWA, TWO and TWF for comment in 2001). Revised version to be prepared and circulated to all TWPs in 202.</b>
10.3	TWC (TC/33/7) (TWC/ 14/6)	Recommended Statistical Methods 10.3.1 COYU Annex: Probability levels 10.3.2 Off-types absolute relative – method to be developed 10.3.3 Segregation ratios (10.3.1/2 S. Watson, A. Roberts (GB) to draft for TWC meeting in 2002) (10.3.3 J. Law (GB) to draft for TWC meeting in 2002)
TGP/11		<b>EXAMINING STABILITY</b>  CPVO to draft paper for presentation to TWV and other TWP's in 2002. (To include explanation of difference between "verification" and examination of stability)
TGP/12		<b>SPECIAL CHARACTERISTICS</b> (Coordinator: Office of the Union)
12.1	(Draft: TC/36/7 12D)  TWV  <u>TWA</u>  <u>TWA</u>	Characteristics Expressed in Response to External Factors  12.1.1 Disease Resistance Mr. van Ettehoven (NL) to draft paper for presentation to TWV and other TWP's in 2002.  12.1.2 Chemical Response (e.g. Herbicide tolerance) <u>Mr. Hossain (AU) to draft paper for TWA in 2002.</u>  <u>12.1.3 Insect Resistance</u> <u>Mr. Guiard (FR) to draft paper for TWA in 2002. (Mr. Hossain (AU) to contribute)</u>

TGP/12		<b>SPECIAL CHARACTERISTICS</b> (Coordinator: Office of the Union)
12.2	<u>TWA</u>	<b>Chemical constituents</b>  12.2.1 <b>Protein Electrophoresis</b> <u>Mr. Camlin (GB) and Mr. Guiard (FR) to draft paper for TWA in 2002, with reference to TC/36/7 12E.</u>
12.3	(Draft: TC/36/7 12B)	<b>Examination of combined characteristics using Image Analysis</b>
12.4	TWV	<b>Examination of scent and flavor characteristics</b>  TWV to draft

TGP/13		<b>GUIDANCE FOR NEW TYPES AND SPECIES</b> (Coordinator: Ms. Scott, GB)
13.1	TWA  TWO	<b>General Guidance for New <del>Types and</del> Species</b>  <u>Mr. Camlin (GB) to produce paper for TWA and TWO in 2002, based on TC/36/7 13A&amp;B, in consultation with TWO representative.</u>  TWO wish to participate in development
<u>13.2</u>	<u>TWA</u>	<b>Guidance for New Types of Variety</b>  <u>Mr. Camlin (GB) to produce paper for TWA and TWO in 2002, based on TC/36/7 13A&amp;B, in consultation with TWO representative.</u>
<u>13.3</u>	TWF	<b>Guidance for New Multi- and Inter-specific Hybrids</b>  TWF to draft

TGP/14		<b>GLOSSARY OF TECHNICAL, BOTANICAL AND STATISTICAL TERMS USED IN UPOV DOCUMENTS</b> (Coordinators: Office of the Union, Ms. Scott, GB + Mrs. Buitendag, ZA, Mr. Law, GB + Mr. Pilarczyk, PL + Mr. Harsanyi, HU)
14.1	UPOV Office  (Draft: TC/36/7 18A)	<b>Technical Terms</b>

<b>TGP/14</b>		<b>GLOSSARY OF TECHNICAL, BOTANICAL AND STATISTICAL TERMS USED IN UPOV DOCUMENTS</b> <i>(Coordinators: Office of the Union, Ms. Scott, GB + Mrs. Buitendag, ZA, Mr. Law, GB + Mr. Pilarczyk, PL + Mr. Harsanyi, HU)</i>
<b>14.2</b>	??? <b>(Draft: TC/36/5)</b>	<b>Botanical Terms</b>
<b>14.3</b>	<b>Mr. Hossain, <u>(AU)</u> (Draft: TWA/29/9)</b>	<b>Statistical Terms</b>

<b>Ref.</b>		<b>Title</b>
<b>TGP/15</b>		<b>NEW TYPES OF CHARACTERISTICS</b> <i>(Coordinator: Office of the Union)</i>
<b>15.1</b>	<b>TC, BMT, all TWP's</b>	<b>Molecular characteristics</b>

[Annex 3 follows]



**TWA/30/19 Annex 3**  
**DRAFT TG/TEMPLATE**  
**ORIGINAL: English**  
**DATE :**

**INTERNATIONAL UNION  
 FOR THE PROTECTION  
 OF NEW VARIETIES OF  
 PLANTS**

**UNION INTERNATIONALE  
 POUR LA PROTECTION  
 DES OBTENTIONS  
 VÉGÉTALES**

**INTERNATIONALER  
 VERBAND ZUM SCHUTZ  
 VON PFLANZEN-  
 ZÜCHTUNGEN**

**UNIÓN INTERNACIONAL  
 PARA LA PROTECCIÓN  
 DE LAS OBTENCIONES  
 VEGETALES**

<p>Main Common Name (E, F, G &amp; S)</p> <p>[types of ] Latin name</p> <p>UPOV Code</p>
--

see TGP/7 Title Page

### **GUIDELINES**

### **FOR THE CONDUCT OF TESTS**

### **FOR DISTINCTNESS, UNIFORMITY AND STABILITY**

Alternative Latin Names<sup>1</sup>:

Alternative Common Names<sup>1</sup>

English	French	German	Spanish

<sup>1</sup> 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 (to be found on the UPOV Web site ?) for the latest information. (see TGP/7 Title Page)

### **ASSOCIATED DOCUMENTS**

These guidelines should be read in conjunction with document TG/1/3 “Revised General Introduction to the Examination of Distinctness, Uniformity and Stability and the Development of Harmonized Descriptions of New Varieties of Plants.”

<u>TABLE OF CONTENTS</u>	<u>PAGE</u>
<del>TWV Comment: Move Uniformity section in front of Distinctness to reflect practical sequence in examination.</del>	
<b>1. SUBJECT OF THESE GUIDELINES.....</b>	<b>3</b>
<b>2. MATERIAL REQUIRED .....</b>	<b>3</b>
<b>3. CONDUCT OF TESTS.....</b>	<b>3</b>
<b>4. METHODS AND OBSERVATIONS.....</b>	<b>3</b>
4.1 NUMBER OF PLANTS / PARTS OF PLANTS TO BE EXAMINED BY MEASURING, WEIGHING OR COUNTING .....	3
4.3 DISTINCTNESS.....	4
4.2 UNIFORMITY .....	4
4.4 STABILITY.....	4
[4.5 TIMING OF OBSERVATION OF CLUSTERED CHARACTERISTICS – IF APPLICABLE] .....	5
[4.6 OBSERVATION OF COLOR - IF APPLICABLE] .....	5
<b>5. GROUPING OF VARIETIES AND ORGANIZATION OF THE GROWING TRIAL.....</b>	<b>5</b>
<b>6. INTRODUCTION TO THE TABLE OF CHARACTERISTICS .....</b>	<b>5</b>
6.1 CATEGORIES OF CHARACTERISTICS WITHIN THE TEST GUIDELINES .....	5
6.1.1 <i>Standard Test Guidelines Characteristics</i> .....	5
6.1.2 <i>Asterisked Characteristics</i> .....	5
6.1.3 <i>Grouping Characteristics</i> .....	5
6.2 STATES OF EXPRESSION AND CORRESPONDING NOTES .....	6
6.3 TYPES OF EXPRESSION .....	6
6.4 EXAMPLE VARIETIES .....	6
6.5 LEGEND: .....	6
<b>7. TABLE OF CHARACTERISTICS.....</b>	<b>6</b>
<b>8. EXPLANATIONS ON THE TABLE OF CHARACTERISTICS .....</b>	<b>7</b>
<b>9. LITERATURE .....</b>	<b>7</b>
<b>10. TECHNICAL QUESTIONNAIRE .....</b>	<b>8</b>



**NOTE PROPOSAL FOR TC TO REQUEST TWP'S TO DRAFT SCHEME FOR HANDLING LONG LIST OF VARIETIES**

1. SUBJECT OF THESE GUIDELINES

These Test Guidelines apply to all varieties of [see TGP/7 1.1]

[see TGP/7 1]

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. **Applicant****Breeders** 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 [see TGP/7 2.2]

2.3 The minimum quantity of plant material to be supplied by the **applicant breeder** in one or several samples should be:

[xxxxx]

based on the standard UPOV formula specified in TGP/7 “Development of Test Guidelines”

2.4 The plant material supplied should be visibly healthy, not lacking in vigor or affected by any important pest or disease [see TGP/7 2.4].

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

3. CONDUCT OF TESTS

3.1 The minimum duration of tests should normally be [see TGP/7 3.1].

3.2 The tests should normally be conducted at one place. If any characteristics of the variety, which are appropriate for the examination of DUS, cannot be seen at that place, the variety may be tested at an additional place.

3.3 The tests should be carried out under conditions ensuring satisfactory growth for the conduct of the examination. The size of the plots should be such that plants or parts of plants may be removed for measurement and counting without prejudice to the observations which must be made up to the end of the growing cycle. Each test should include a total of [see TGP/7 3.3] plants which should be divided between [see TGP/7 3.3] replicates

3.4 Additional tests for examining relevant characteristics may be established.

4. METHODS AND OBSERVATIONS

4.1 Number of Plants / Parts of Plants to be Examined by Measuring, Weighing or Counting

4.1.1 Unless otherwise indicated, all observations determined by measuring, weighing or counting should be made on [see TGP/7 4.1] plants or [see TGP/7 4.1] parts taken from each of [see TGP/7 4.1] plants.

#### 4.23 Distinctness

It is of particular importance for users of these Test Guidelines to consult [TG/1/3 ref – currently Chapter 5 of TC/37/9] prior to making decisions regarding distinctness. However, the following points are provided for elaboration or emphasis in these Test Guidelines.

##### 4.23.1 *Consistency*

It is generally recommended that the growing trials are conducted over at least [x] growing cycle(s) to ensure that any differences in a characteristic are sufficiently consistent.

[see TGP/7 4.2.1]

##### 4.23.2 *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 [quote from TC/37/9 5.3.3.2]. Therefore, it is important that users of these Test Guidelines are familiar with the recommendations provided by [TG/1/3 ref – currently Chapter 5 of TC/37/9] prior to making decisions regarding distinctness

#### 4.32 Uniformity

4.3.1 It is of particular importance for users of these Test Guidelines to consult [TG/1/3 ref – currently Chapter 6 of TC/37/9] prior to making decisions regarding uniformity. However, the following points are provided for elaboration or emphasis in these Test Guidelines.

[see TGP/7 4.3]

##### 4.32.2 *Unrelated and Very Atypical Plants*

The test material may contain plants that are very atypical or unrelated to those of the variety. These are not necessarily treated as off-types, or part of the variety, and may be disregarded, and the test may be continued, as long as the removal of these very atypical or unrelated plants does not result in an insufficient number of suitable plants for the examination, or make the examination impractical. [from TG/1/3: currently TC/37/9 paragraph 108]

#### 4.4 Stability

It is not usually possible to perform tests of stability that produce results as certain as those of the testing of distinctness and uniformity. However, experience has demonstrated that, in general, when a submitted variety has been shown to be uniform it can also be considered to be stable. ~~However, experience has demonstrated that, in general, when a submitted sample has been shown to be uniform the material can also be considered stable.~~ [from TG/1/3: currently TC/37/9 paragraph 111]

[see TGP/7 4.4]

[4.5 Timing of Observation of Clustered Characteristics – if applicable]

[see TGP/7 4.5]

[4.6 Observation of Color - if applicable]

[see TGP/7 4.6]

5. GROUPING OF VARIETIES AND ORGANIZATION OF THE GROWING TRIAL

5.1 The collection of varieties to be grown in the trial and the way in which they 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 to select, either individually or in combination with other such characteristics, varieties of common knowledge that should be included in the growing trial for examination of distinctness. In addition, they are characteristics 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, to organize the growing trial so that similar varieties are grouped together. [from TG/1/3: currently TC/37/9 chapter 4.8]

5.3 The following characteristics have been selected as grouping characteristics:  
[see TGP/7 5.3]

5.4 Grouping characteristics and characteristics included in the Technical Questionnaire are those considered to be particularly useful when arranging for similar varieties to be placed together in the trial.

6. INTRODUCTION TO THE TABLE OF CHARACTERISTICS

6.1 Categories of Characteristics Within the Test Guidelines

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 Contracting Parties can select those suitable for their particular circumstances. [from TG/1/3: currently TC/37/9 chapter 4.8]  
[see TGP/7 6.1.1]

6.1.2 *Asterisked Characteristics*

Asterisked characteristics (denoted by \*) are those 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 Contracting Parties except when the state of expression of a preceding characteristic or regional environmental conditions render this inappropriate. [from TG/1/3: currently TC/37/9 chapter 4.8]  
[see TGP/7 6.1.2]

6.1.3 *Grouping Characteristics*

see section 5

## 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 the description.

## 6.3 Types of Expression

An explanation of the types of expression of characteristics (Qualitative, Quantitative and Pseudo-Qualitative) is provided in TG/1/3 [ref] [currently chapter 4.4 of TC/37/9]

[see Section 4.2.2.1]

## 6.4 Example Varieties

Example varieties are usually provided and in particular where it is not possible, or practical, to illustrate the states of expression (in Chapter 8) in a way which applies to all environments in which the DUS examination may be conducted

**The example varieties provided in these Test Guidelines apply to the following regions:**

[xxxx]

[see TGP/7 6.4]

## 6.5 Legend:

- (\*) Asterisked characteristic – see 6.1.2
- (QL) Qualitative characteristic – see 6.3
- (QN) Quantitative characteristic – see 6.3
- (PQ) Pseudo-Qualitative characteristic – see 6.3

[see TGP/7 6.5]

- (MS) Measurement of a number of individual plants or parts of plants
- (MG) Measurement of a group of plants or parts of plants
- (VS) Visual assessment of a number of individual plants or parts of plants
- (VG) Visual assessment of a group of plants or parts of plants
- (<sup>Footnote</sup>) Footnote explaining reason why method of observation not provided

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

## 7. TABLE OF CHARACTERISTICS

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

[see TGP/7, Chapter 7]

	Stage <sup>1)</sup> Stade <sup>1)</sup> Stadium <sup>1)</sup> Estadio <sup>1)</sup>	English	français	deutsch	español	Example Exemples Beispielssorten Variedades ejemplo	Varieties Note/ Nota
Box 1	Box 2	Box 3	Box 3	Box 3	Box 3	Box 4	Box 5

<sup>(1)</sup> Where appropriate, the optimum stage of development for the assessment of the characteristic is indicated according to the scale described in chapter 8.

## 8. EXPLANATIONS ON THE TABLE OF CHARACTERISTICS

Ad. [char. no.]: [Heading of Characteristic]

## 9. LITERATURE

[see TGP/7, Section 9]

10. TECHNICAL QUESTIONNAIRE

Reference Number  
(not to be filled in by the  
applicant breeder)

TECHNICAL QUESTIONNAIRE  
to be completed in connection with an application for plant breeders' rights

1. Subject of the Technical Questionnaire

- 1.1 *Latin Name* [see TGP/7 1.1]  
1.2 Common Name [see TGP/7 1.1]

2. Applicant

Name  
Address  
Tel. No.  
Fax No.  
E-mail address

3. Proposed denomination or breeder's reference

~~\*\*\* CONFIDENTIAL SECTION \*\*\*~~

4. Information on the origin and propagation of the variety

4.1 Origin

~~(a) Product of a deliberate cross between different varieties undertaken by the applicant~~

~~— (please provide details)~~

~~(b) Selection of mutant or variant plant from a variety of common knowledge~~

~~— (please provide details):~~

~~(c) Discovery~~

~~— (please provide details):~~

~~(d) Other~~

~~— (please provide details):~~

OPTIONS

4.2 Method of Propagating the variety

~~(a) Seed:~~

~~—~~

~~— (i) Self pollinated~~

~~—~~

~~— (ii) Cross pollinated~~

~~— controlled population~~

~~— synthetic variety~~

~~— (iii) Hybrid [see TGP/7 TQ 4]~~

~~(b) Vegetative Propagation:~~

~~— (please provide details):~~

OPTIONS

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

[see TGP/7 TQ5]

Characteristics	Example Varieties	Note

6. Similar varieties and differences from these varieties

Denomination of similar variety	Characteristic in which the similar variety is different <sup>o)</sup>	State of expression of <b>candidate variety</b>	State of expression of <b>similar variety</b>
---------------------------------	--	---	---

<sup>o)</sup> In the case of identical states of expressions of both varieties, please indicate the basis for considering that the varieties can be clearly distinguished.

7. Additional information

7.1 Additional characteristics which may help to distinguish the variety

~~7.1.1 Resistance to pests and diseases~~

~~7.1.2 Other~~

OPTIONS

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

[see TGP/7 TQ7.3]





TWA/30/19

ANNEX 4

Reference to document TC/37/10,  
Rev. 2 (TWC, TWV)



TWA/30/19 **Annex 4**

ORIGINAL: English

DATE September 7, 2001

**E**

**INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS**  
GENEVA

**TECHNICAL WORKING PARTY  
FOR  
AGRICULTURAL CROPS**

**Thirtieth Session  
Texcoco, Mexico, September 3 to 7, 2001**

Proposed Revisions to:

DOCUMENT TC/37/10: DRAFT TPG/7: "DEVELOPMENT OF TEST GUIDELINES"

Resulting from:

THE TECHNICAL WORKING PARTY FOR AGRICULTURE

*Document prepared by the Office of the Union*

1. Circular U30932 provided document TC/37/10 (plus annex) as the draft for TGP/7 "Development of Test Guidelines".
2. Document TC/37/10 has been reviewed by both The Technical Working Party on Automation and Computer Programs (TWC) and The Technical Working Party for Vegetables (TWV). This document is an amended version of TC/37/10 and Annex showing their proposed changes.
3. The purpose of showing these proposals is to highlight the discussions which have already taken place for the benefit of the TWA. However, during discussion on this item, participants will be invited to direct any comments either to the original TC/37/10 or to this revised version, whichever is most convenient.

## INTRODUCTION

1. The purpose of this document is to provide guidance on the development of standardized UPOV Test Guidelines and it is aimed at the drafters of UPOV and National Test Guidelines. UPOV has prepared, as Annex I, a standard template “TG/Template” as the starting point for the development of Test Guidelines.

2. The TG/Template contains the minimum standard wording, which is appropriate for all Test Guidelines. Drafters of Test Guidelines should start with the TG/Template (Annex I) and refer to the detailed guidance (Prefixed with “*Guidance:*”) set out below where this is indicated in TG/Template. In this way, the template can be completed or further elaborated, according to the circumstances of the varieties to be covered by the particular Test Guidelines. Additional standard wording (Prefixed with “*Standard wording...*”) in this document is marked between “...” and can be copied directly into the Test Guidelines where it is appropriate. The section numbering in this document coincides with the numbering in the template document “TG/Template” for ease of reference. It should be noted that the TG/Template standard wording is not reproduced in the sections below.

3. The standard wording is preferred, wherever possible, because this greatly reduces the editorial work in considering Test Guidelines. For example, certain terms have already been translated into all the UPOV languages in an agreed way and the original reference texts are more likely to be available to UPOV users. If standard wording is not used in Test Guidelines it will be highlighted by a # symbol to alert the Technical Working Party, Editorial Committee and Technical Committee accordingly and perhaps lead to the extension or modification of this document. **[Note: this will only come into operation with the electronic version of TG/Template]**

4. In cases where specific standard wording is not provided, drafters should refer to Annex II which provides some other recognized UPOV terms. It should be noted that, in general, the use of abbreviations should be avoided in drafting Test Guidelines.

5. The individual Test Guidelines are prepared in a number of Technical Working Parties specialized in different types of plants (Agricultural Crops, Fruit Crops, Ornamental Plants and Forest Trees, Vegetables). Once completed, the draft is sent for comments to the international professional organizations and to important 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. Details of the process for introducing or revising Test Guidelines are set out in Annex III. Document TGP/2 contains a list of all Test Guidelines adopted by UPOV.

6. This document is, hereafter, set out in the order of the title page and ten chapters corresponding to those found in TG/Template (Annex I). **At this point readers should go to TG/Template as the starting point and refer to the following text where advised in the TG/Template.**

## TITLE PAGE

- Main Common Name: *Guidance:* To be presented in all UPOV languages  
(bold capital letters)
- [Types of] Latin Name: *Guidance:* [types of] section to be completed where the  
coverage of the Latin name is wider than the coverage of the  
Test Guidelines  
(Latin name in italics)
- UPOV Code: *Guidance:* (To be developed)
- Alternative Latin Names: *Guidance:* All known alternative Latin names to be  
presented (using UPOV code when established)
- Alternative Common Names: *Guidance:* All well-known alternative common names, in  
UPOV languages, to be presented (using UPOV code when  
established)

## 1. SUBJECT OF THESE GUIDELINES

### *Standard wording:*

“*These Test Guidelines apply to all varieties of .....* [insert “UPOV Code; [types of] [Latin name]”” – as specified on the title page.

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

*Guidance:* 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. Alternatively, different groups inside a species can be dealt with in different Test Guidelines if they can be clearly separated, either botanically or by other clear grouping characteristics.

### *Standard wording where appropriate:*

“Basis for Differentiating Varieties of the Same Species Not Covered by These Test Guidelines”

*Guidance:* The Test Guidelines should state the basis for differentiating varieties of the same species not covered by these Test Guidelines.

**[Standard wording for different options may be developed.]**

*Standard wording where appropriate:*

“Basis for Differentiating Varieties Covered by Different Sets of Example Varieties”

*Guidance:* The Test Guidelines should explain characteristics which allow distinctness for varieties covered by the different sets of example varieties (e.g. Winter/Spring) or should state if there is a possibility of overlap i.e. some varieties which need to be considered for distinctness against varieties covered by different sets of example varieties.

**[Standard wording for different options may be developed.]**

2. MATERIAL REQUIRED

2.1

2.2 *Guidance:* This should specify in what form the material should be provided e.g. seed, cuttings etc...

**[List of standard possibilities to be developed]**

2.3 *Guidance:* Number of Propagules/Seeds (N) =  $X(p \cdot 1/a) + Y_n(r_n \cdot 1/b_n) + Z(1/s \cdot p \cdot 1/a)$

Formula	Input
X = Total number of growing trials	
p = Number of plants per growing trial <b>[guidance to be developed]</b>	
a = Level of plant establishment in growing trial from initial submitted seed / propagule	
Y <sub>(n)</sub> = Number of special tests <sub>(n)</sub>	
r <sub>(n)</sub> = Number of plants per test <sub>(n)</sub> <b>[guidance to be developed]</b>	
b <sub>(n)</sub> = Level of plant establishment in special test <sub>(n)</sub> from initial submitted seed / propagule	
Z = Number of years of stock required for growing trials for reference sample	
s = rate of deterioration in store	

**Comment: Introduce extra Z factor to allow for the provision of samples to other DUS examiners**

>> Number of Propagules/Seeds Required =

OR

Quantity of Seed (Q) = N/1000 \* TSW

TSW= Thousand Seed Weight [see TGP/7 2.2]	
---	--

>> Quantity of Seed Required =

*Guidance:* The thousand seed weight should be that provided by ISTA, where possible, and the maximum thousand seed weight should be used where a range is given.

2.4 *Standard wording* ~~where appropriate~~ for seed:

(a) Germination capacity of seed

“The **minimum** germination capacity of the seed should be as high as possible and will be determined by the competent authority to be at a level to be sufficient for the conduct of a satisfactory examination of the variety and for satisfactory storage of a reference sample.”

(b) Health of submitted material

“In particular, the submitted plant material must be free from [insert as appropriate]”.

2.5

3. CONDUCT OF TESTS

- 3.1 *Guidance:* Refer to TG/1/3 [ref.] (currently document TC/37/9, Chapter 5.3.3.1) for general guidance and to Test Guidelines covering similar types of varieties.  
**[Further, more detailed guidelines may be developed.]**

*Standard wording where appropriate:*

The minimum duration of tests should normally be [x] independent growing cycles. ~~Where these independent growing cycles represent a different growing environment (e.g. different seasons) –~~ **I** It should be ensured that all relevant characteristics can be examined in all cycles.

- 3.2 *Guidance:* A relevant example should be provided for the species concerned (e.g. examination of vernalization requirement in wheat)

3.3 *Standard wording:*

“Each test should include a total of [x] plants which should be divided between [y] replicates.”

**[Guidelines to be developed]**

3.4

4. METHODS AND OBSERVATIONS

4.1 Number of Plants / Parts of Plants to be Examined by Measuring, Weighing or Counting

4.1.1 *Standard wording:*

“Unless otherwise indicated, all observations determined by measurement, weighing or counting should be made on [x] plants or [y] parts taken from each of [x] plants.”  
**[Guidelines to be developed]**

*Standard wording where appropriate:*

“In the case of .....

**[Guidelines to be developed for specific tests e.g. laboratory tests, bulk samples etc...]**

4.1.2

4.2 Distinctness

4.2.1 Consistency:

*Standard wording:*

“It is generally recommended that the growing trials are conducted over [x] growing cycle(s) **[as specified in 3.1]** to ensure that any differences in a characteristic are sufficiently consistent.”

*Standard wording where appropriate:*

“In the case of [~~e.g. disease resistance test~~ specify any tests other than the growing trials] it is recommended that the characteristic(s) should be examined.....”  
**[Standard wording options to be developed]**

4.2.2 Clear differences:

4.2.2.1 *Standard wording where appropriate:* for Test Guidelines covering hybrid varieties:

“TG/1/3 [ref] [currently document TC/37/9, Chapter 5.3.3.2] sets out guidance for the possible use of parental formulae in the examination of DUS of hybrid varieties.”

4.2.2.2 ~~*Standard wording where appropriate:*~~ ~~The following wording (a)/(b) should be used as appropriate for the Test Guidelines concerned:~~ *Standard wording where appropriate:* The following wording (a)/(b)/(c) should be used as appropriate for the Test Guidelines concerned – more than one option can be provided with a recommendation for specific characteristics

(a) ~~[In cases where there is very little variation within varieties]~~

“Guidance on the interpretation of the observations for the assessment of distinctness without the application of statistical methods is provided in TG/1/3 [ref] [currently document TC/37/9, Chapter 5.4]”

(b) “Guidance on the interpretation of the observations for the assessment of distinctness with the application of statistical methods is provided in TG/1/3 Chapter [ref.. – currently Chapter 5.5 of document TC/37/9].”

*Standard wording where appropriate:* where measured characteristics are included in the Test Guidelines:

~~(i) “Self Pollinated and Vegetatively Propagated Varieties~~

(TWA Comment: There is no difference of wording when used for different types of variety)

Varieties can be considered clearly distinguishable if:

*Standard wording where appropriate (option 1):*

the difference between them equals or exceeds the Least Significant Difference (LSD) at a probability level of [x] with the same sign in at least two independent cycles over a period of [y]

*Standard wording where appropriate (option 2):*

**[COYD option – Guidelines to be produced in TGP/9 “Examining Distinctness]**

even if they are described by the same state of expression.”

**[Guidelines to be produced in TGP/9 “Examining Distinctness]**

~~(ii) “Cross Pollinated Varieties~~

~~[Standard wording to be developed and guidelines to be produced in TGP/9 “Examining Distinctness”]~~

(c) “Guidance on the assessment of Distinctness is provided in TGP/9 “Examining Distinctness”

#### 4.3 Uniformity

*Standard wording where appropriate:*

(a) Self-Pollinated and Vegetatively Propagated Varieties

“The acceptable number of off-types tolerated in a sample size of **[number specified in section 4.1 of Test Guidelines]** is [x] on the basis of a population standard of [y] and an acceptance probability of [z].” **[Guidance to be developed in TGP/10]**

*Standard wording where appropriate:*

“When uniformity is assessed by COYU the acceptance probability should be [P1] after 2 independent cycles, [P2] after 3 independent cycles, or [P3] after 4 independent cycles .” The rejection criterion is [P4] after 2 independent cycles, [P5] after 3 independent cycles, or [P6] after 4 independent cycles **[Guidance to be developed in TGP/10]**

b) Cross-Pollinated Varieties



*Standard wording:*

The variability within the variety should not significantly exceed the variability of comparable varieties already known.

*Standard wording where appropriate:*

“When uniformity is assessed by COYU the acceptance probability should be [P]”.  
[Guidance to be developed in TGP/10]

*Standard wording where appropriate:*

[Guidance on alternative to COYU, e.g, where insufficient degrees of freedom, to be developed in TGP/10]

*Standard wording where appropriate:*

“In the case of uniformity assessed on the basis of off-types the variability within varieties should be based on the variability of comparable varieties already known. The accepted number of off-types in a sample size of [number specified in section 4.1] should be calculated using [method to be developed] with an acceptance probability of [P]”. [Guidance to be developed in TGP/10]

**COMMENT: alternative options to be sent to the Office for inclusion.**

\*\*\*\*\*

**COMMENT: THE TWA HAD NO FURTHER TIME TO DISCUSS THE DOCUMENT IN DETAIL BEYOND THIS POINT BUT WILL SEND WRITTEN COMMENTS ON THE REMAINDER OF THE DOCUMENT TO THE OFFICE BY END NOVEMBER.**

**(Separate discussions related to specific sections are reported below:**

#### 6.4 Example Varieties

*Guidance:*

There is a particular need for the Test Guidelines to provide up to date example varieties for characteristics included in the Technical Questionnaire. National Authorities and breeders' organizations are invited to notify UPOV when these are in need of updating.

~~*Standard wording where appropriate:*~~

~~“Where the example varieties are not universally available an alternative set of example varieties have, where possible, been provided.”~~



TG/31/7(proj.)  
Cocksfoot,

II. Material Required

To keep the following sentence

1. ....

The minimum requirements for germination capacity, moisture content and purity should not be less than the marketing standard ~~for certified seed~~ accepted in the country. Especially for storage, which requires a higher standard, the applicant should state the actual germination capacity which should be as high as possible.

III. Conduct of Tests

Paragraph 1 to read:

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

IV. Methods and Observations

3. Where observations in both spaced plants and row plots, it is likely that the expression of the characteristic and its method of recording be different from the single spaced plants, as plants cannot be examined as discrete units.

VI. Characteristics and Symbols

Paragraph 1 to read:

1. To assess distinctness, homogeneity and stability, the characteristics and their states as given in the three UPOV working languages in the Table of Characteristics should be used. For each characteristic it is indicated whether ‘spaced plants’ (A) and/or ‘row plots’ (B) or ‘special tests’ (C) should be used.

Paragraph 3 to add:

- MG: actual measurement of a group of plants or parts of plants
- MS: actual 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 observations of a number of individual plants or parts of plants

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

Ch. 1, No explanation required. To add MS

Ch. 2, new wording and to add MS as follows

2. **B Foliage: fineness  
(at vegetative  
growth stage)**

MS

Ch. 3, new wording and to add VS in front of A and VG in front of B:

3. **A VS Tendency to  
B VG form  
(+) inflorescences  
without  
vernalization  
period**

Ch. 4, new wording, new states and to add VG:

4. **B Leaf: green  
color (after  
vernalization  
period)**  
VG  
light (3)  
medium (5)  
dark (7)
- 

Ch. 5, new wording and to add MS in front of A and MG in front of B:

5. **A MS Plant: time of  
(\* B MG inflorescence  
(+) emergence (after  
vernalization  
period)**

Ch. 6, New wording for states (1) and (3) and to add VS:

~~erect~~      upright  
(1)

~~semi-erect~~    semi-upright  
(3)

Ch. 7, becomes Ch. 10, to Add MS

~~7~~ **10. A      Flag leaf: length**  
(\*            (as for 7)  
    **MS**

Ch. 8, becomes Ch. 11, to Add MS

~~8~~ **11. A      Flag leaf: width**  
(\*            (same flag leaf as  
    **MS      that used for 7)**

Ch. 9, becomes Ch. 7, to Add MS

~~9~~ **7. A      Stem: length of**  
(\*            longest stem  
    **MS      (inflorescence**  
             **included; when**  
             **fully expanded)**

Ch. 10, becomes Ch. 8, stage of observation (as for 7), to Add MS

~~10~~ **8. A      Stem: length of**  
~~8.~~            **upper internode**  
    **MS      (as for 7)**  
(+)

Ch. 11, becomes Ch. 9, stage of observation (as for 7), to Add MS

~~11~~ **9. A      Inflorescence:**  
~~9.~~            **length (as for 7)**  
    **MS**

To delete the example varieties Lidacta and Horvat in every characteristic where present.

VIII. Explanations on the Table of Characteristics

Add. 3 and 5 to modify according to the new wording of the characteristics

X. Technical Questionnaire

To modify according to the changes in the Table of Characteristics.

TG/139/7 (proj.)

MEADOW FESCUE  
TALL FESCUE

IV. Methods and Observations

3. Where observations can be made also in both spaced plants or row plots,

V. Grouping of Varieties

To add Ch. 5

VI. Characteristics and Symbols

1. To assess distinctness, ~~homogeneity~~ uniformity and stability, the characteristics and their states.....

3. Legend:

To add

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

MS: actual 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 observations of a number of individual plants or parts of plants

VII. Table of Characteristics

Ch.1 to add (+), MS and move footnote to Chapter VIII

Ch. 2, to add VG/VS, and “period of” after “vernalization”

2. **A VS Plant: tendency to**  
**B VG form inflorescences**  
(+) **without**  
**vernalization period**

Ch. 3, to add (+), MS, replace “vegetation” by “growing period”, and to add “period” after “vernalization”

3. A Plant: length at the  
end of the growing  
(+) MS period before  
vernalization period  
only for F.p.

Ch. 4, to add (\*), VS, to read as follows:

4. A Plant: growth habit  
(\* ) (as for 3) only for  
VS F.p.

Ch. 5, to add (\*), VG, to read as follows,

5. B Leaf: intensity of  
(\* ) green color in  
VG vegetative growth

Ch. 6, to add VG and to read as follows

6. B Foliage: fineness (as  
for 2) only for F.a.  
VG

Ch. 7, to add MG and to read as follows

7. B Plant: natural  
height after  
MG vernalization period  
(about 4 weeks after  
beginning of  
growth)

Ch. 8, to add MS/MG and to read as follows :

8. A MS Plant: time of  
(\* ) B MV inflorescence  
(+) emergence after  
vernalization period

Ch. 9, to add VS

Ch. 10, to add MS

Ch. 11, becomes Ch 13 and to add MS

Ch. 12, becomes Ch 14 and to add MS

Ch. 13, becomes Ch. 11 and to add MS

Ch. 14, become Ch.12 and to add MS

VIII. Explanations on the Table of Characteristics

Ad. 1 to move from footnote.

Ad. 2: Plant: tendency to form inflorescences without vernalization

The number of plants showing at least three inflorescences should be recorded for each variety. To be assessed on one occasion, on the whole, ~~that~~ when the varieties are judged to have reached ~~their~~ full expression of this characteristic.

Ad. 3: a diagram to be provided

Ad. 12: the explanation from the previous draft to be kept.

The length should be measured, when the internode is fully expanded. The longest upper internode of each plant should be measured as the distance between the upper node and the basis of the inflorescence.

X. Technical Questionnaire

To add Ch. 5.

TG/195/7 (proj.)

TOBACCO

IV. Methods and Observations

1. All observations for the assessment of distinctness and stability should be made on the plot as a whole. In the case of measured characteristics, observations should be made ~~on total~~ at least on 20 plants or parts taken from each of 20 plants.

4. All observations on ~~leaves~~ the leaf,.....

VII. Table of Characteristics

New Ch. After Ch.2 (proposed by BR to be checked in a short time by DE. FR and GR)



**3. Plant: color of  
main stem**

(\*)

whitish (1)

white green (2)

green (3)

dark green (4)

---

Ch. 9, to add (\*) and to read as follows:

**9. Leaf blade: ratio  
length/width**

(\*) (without auricles)

very small

small

medium

large

very large

---

After Ch. 10 add new Ch. (proposed by BR to be checked in a short time by DE. FR and GR, drawings to be provided by BR)

**11. Leaf: shape of  
bottom leaves (the  
two first harvestable  
leaves)**

(+)

rounded 1

elliptical 2

conical 3

reverse conical 4

---

Ch. 13, to delete the brackets and the content of state 1

Ch. 14, Example variety “Klio” instead of “klio”

Ch. 19, to delete the state of expression “very broad(9)”

After Ch. 20 t add new Ch. (proposed by BR to be checked in a short time by DE. FR and GR, drawings to be provided by BR)

**21. Leaf: midribs angle of insertion positioning (across the main vein)**

very acute	1
moderately acute	2
right angle	3

---

Ch. 22, to replace the (\*) by (+).

Ch. 24, to add (+) and arrow to the drawing showing the swallow of the tube.

Ch. 30, 31 and 32, to delete “at full flowering time”

Ch. 31, to read example variety “Ptolemaida 63” instead of “Prolemaida 63”.

After Ch. 32 to add new Ch. (proposed by BR to be checked in a short time by DE. FR and GR, drawings to be provided by BR, position of the observation still to be determined)

**33. Shape of fruit**

(+)

rounded	1
elongated	2
elliptical	3

---

**VIII. Explanations on the Table of Characteristics**

Ad. 6, to delete the figures < 45; 45 and >90

Ad. 26, to add new drawings proposed by BR (the actual ones provided a the meeting have to be checked by DE, FR and GR)

**X. Technical Questionnaire**

4.1 to read “inbred line” instead of “Inbred line”

5.1, to delete this characteristic and to added in Chapter 7 of the TQ.

7.1 to add the following:

Classification of tobacco varieties	Note
flue cured	1[ ]
light air cured	2[ ]
dark air cured	3[ ]
sun cured	4[ ]
fire cured	5[ ]
other (please specify)	6[ ]

7.2, to add “Resistance to pests and diseases”

7.3, to add “Special conditions for the evaluation of the variety.”

7.4 “Other information”

Items still to be considered:

Example varieties, BR will provide example varieties for the types of tobacco and agro-climatic conditions in South America, at least for the quantitative characteristics more affected by the environment.

TG/08/5 (proj.)

FIELD BEAN

IV. Methods and Observations

2. ~~For the assessment of uniformity relative uniformity standards should be applied.~~ The variability within the variety should not exceed the variability of comparable varieties already known, if not otherwise indicated.

V. Grouping of Varieties

To add:

(c) Plant: growth type (characteristic 13)

VII. Table of Characteristics

Ch. 1, to be deleted

Ch.3, 5, 6, 8, 14, 15, 16, 17 and 19, to add MS

Ch, 12 and 13, to add VG.

### VIII. Explanations on the Table of Characteristics

First explanation to read:

#### Ad. 9. Wing: melanin spot:

Melanin spot on the flower wing correlates with melanin content of testa. Therefore, this characteristic can also be assessed by using the following method. ~~Tannin content of testa correlates with melanin spot on the flower wing. Maintaining both characteristics is necessary, as observations are made at very different stages and different times.~~ The content of tannin should be tested by removing a piece of the testa from the seed and placing 1 or 2 drops of the test reagent upon its inner surface. A bright pink color will develop within 1 or 2 minutes in the presence of tannins (Reagent: A 50% ethanol; B 1% vanillin in conc. HCl; A and B mixed 1:1 for use).

~~Seeds that are yellowish grey immediately after harvest will turn brown after ageing if they contain tannin.~~

#### **Ad 12: Standard: extent of anthocyanin coloration**

To add “The observation has to be done in the inner side of the standard.”

#### Ad. 20: Dry seed: color of testa.

Seeds that are “yellowish grey” (color to be checked by DE) immediately after harvest will show brown after aging if contain tannin.

### UNIFORMITY TOLERANCES IN THE TEST GUIDELINES FOR RAPE SEED (Revision of Chapter IV of TG/36/6)

During the TWA meeting held in Sweden in 2000, it was decided to revise the paragraph 4 of Chapter IV of the Test Guidelines which concerns the uniformity tolerances.

The above-mentioned chapter reads:

“... ”

3. *For the assessment of uniformity of characteristics on the plot as a whole (visual assessment by a single observation of a group of plants or parts of plants), the number of aberrant plants or parts of plants should be counted on the total of 200 plants.*

4. *For the assessment of uniformity of inbred lines a population standard of ~~0.5%~~ 2% with an acceptance probability of at least 95% should be applied. In the case of hybrids, the population standard should be ~~5%~~ 10% with the same acceptance probability of at least 95%. ~~For those countries which foresee difficulties with too large a change to adjust their system to the newly adopted rules, a possible interim period of five years from the adoption of the Test Guidelines would be acceptable~~*

~~before they change to the new rules. During that period a population standard of 2% for inbred lines and 10% for hybrids would be acceptable.~~ For other types of varieties, the general rules for the testing of uniformity apply as stated in the General Introduction to the Test Guidelines.

5. In case progenies of unthreshed plants are observed, the tolerance for uniformity in the progeny rows should be four off-type rows in 40. ...”

## TG/186/1 (proj.)

### SUGARCANE

#### II. Material Required

1. The competent authorities decide when, where and in what quantity and quality the plant material required for testing the variety is to be delivered. Applicants submitting material from States other than that in which the testing takes place must ensure that all customs and phytosanitary formalities are complied with. As a minimum, the following quantity of plant material is recommended:

#### III. Conduct of Tests

1. The tests should normally be conducted over one growing cycle. If ~~distinctness and/or uniformity cannot be sufficiently established~~ the examination cannot be completed in one growing period, the test should be extended for a second growing period.

Paragraph 3, to refers to “stools” instead of “plants” and to “a minimum of 6 stalks” instead of “total of”, and idem for Chapter IV.

#### IV. Methods and Observations

6. All observations on the leaf blade and leaf sheath should be made on ~~fully extended leaves, on the upper part of stalks of vegetative stage~~ the TVD leaf (TVD= top visible dewlap)

#### V. Grouping of Varieties

- ~~(a) Plant: adherence of leaf sheath (characteristic 2)~~
- ~~(b) Internode: shape (characteristic 10)~~
- ~~(c) Internode: color where exposed to the sun (characteristic 12)~~
- (d) Internode: color where not exposed to sun (characteristic 13)
- ~~(e) Internode: zigzag alignment (characteristic 15)~~
- (f) Node: shape of bud (characteristic 21)
- ~~(g) Leaf sheath: color of dewlap (characteristic 42)~~
- ~~(h) Leaf blade: width in the middle of the length (characteristic 44)~~

VII. Table of Characteristics

AU and BR to exchange information to agree in example varieties to be provided to UPOV.

Ch. 7, to add MS

Ch. 8 to add MS and to delete “at mid height” read as follows

<b>8. Internode: length on the bud side</b>
---

Ch. 9, to add (\*), (+) (explanation and drawing to be added) and read as follows,

<b>9..... Internode: diameter</b> .* (as for 8) (+)
---

Ch. 14> to have notes 1, 3 and 7 instead of 1,2 and 3.

Ch.15, to add “expression” and the wording of the ch. And to be deleted from the states of expression as follows:

<b>15. Internode: expression of zigzag alignment</b> (*)
absent or very weak
weak
moderate
strong

After Ch. 24, to add:

---

<b>25. Node: length of the bud groove</b> (+)
short (3)
medium (5)
long (7)

---

Ch. 28, to have states “wide (7)” and “very wide (9)” instead of “broad(7)” and “very broad(9)”.

Ch. 31, to have MS

Ch. 36, to move the ranges of value to Chapter VIII.

Ch. 37, to delete states “very short(1)” and “very long (9)”.

New Ch. After Ch. 37

<b>38.</b>	<b>Leaf sheath:</b>		
(+)	<b>density of ligule</b>		
	<b>hairs (group 61)</b>		
	absent or very sparse	1	
	sparse	3	
	medium	5	
	dense	7	
	very dense	9	

Ch. 44, to add MS and to read as follows:

<b>44.</b>	<b>Leaf blade: width at</b>
(*)	<b>the longitudinal mid</b>
MS	<b>point</b>
	narrow
	medium
	broad

Ch. 45 and 47, to add MS

### VIII. Explanations on the Table of Characteristics

Ad. 7: Stem **Leaf**: culm height (base to TVD leaf)

Ad. 12: Internode: color where exposed to sun

With wax, after three days of exposure to the sun with wax removed.

Ad. 40, AU to provide better drawings.