



TWA/30/20

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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

adopted by the Technical Working Party for Agricultural Crops

Opening of the Session

1. The Technical Working Party for Agricultural Crops (hereinafter referred to as “the Working Party”) held its thirtieth session in Texcoco, Mexico, from September 3 to 7, 2001. The list of participants is reproduced in Annex I to this report.
2. The session was opened by Mrs. Françoise Blouet (France) who welcomed all participants and, in particular, the new participants to the Working Party.

Adoption of the Agenda

3. The Working Party adopted the agenda as reproduced in document TWA/30/1 Rev., after having agreed to change its order, as proposed by the Chairman.

Short Reports on Special Developments in Plant Variety Protection in Agricultural Crops
(Oral Reports by the Participants)

4. The Working Party received short reports on plant variety protection from a number of countries. The expert from the Community Plant Variety Office (CPVO) reported on applications for parental components of hybrid varieties of sugar beet. He explained that they were working with breeders and national experts and that they would like to submit draft test guidelines for that crop to the Working Party. The expert from Spain mentioned that the Spanish Plant Variety Office had been incorporated into the Ministry of Agriculture, as it had been in the past. The expert from Japan reported that the national test guidelines were being revised to harmonize them with the UPOV Test Guidelines. The expert from Kenya called that the office of his country was a new one and that their legislation was under revision, adding that 600 applications had been received to date, 50% of them being for ornamental crops. He explained that they were working with other UPOV members for cooperation in DUS. The expert from New Zealand reported that in some crops the technical examination was changing from a breeder testing system to an official testing system. The expert from the Republic of Korea reported that protection had been extended to a further 34 plant genera, that 177 applications had been presented the previous year and that 200 plant breeder's rights had been granted to date, most of which were national varieties. The expert from Australia advised that in his country they were very interested in the possible use of molecular markers in the DUS examination and in the assessment of essential derivation. An expert from Mexico reported that the revision of example varieties was at its final stage for some crops.

Important Decisions Taken During the Last Technical Committee and the Working Parties

5. The Working Party was informed about the implementation of the new structure of the Office of the Union. It noted that, since its last meeting, the following staff had joined the Office of the Union: Dr. Rolf Jördens as Vice Secretary-General; Mr. Peter Button as Technical Director; Mrs. Yolanda Huerta as Senior Legal Officer; Mr. Makoto Tabata as Senior Counsellor for Asia and the Pacific region and Mr. Paul Senghor as Senior Program Officer for Africa and the Arab region.

6. The Technical Director reported on the thirty-seventh Technical Committee meeting, which was held in Geneva from April 2 to 4, 2001, reporting, in particular, on the following subjects: the creation of a database of variety descriptions, the development of the UPOV Code, both of which were linked to the UPOV-ROM, and the development of the new revised General Introduction to the Examination of Distinctness, Uniformity and Stability and the Development of Harmonized Descriptions of New Varieties of Plants. The Working Party noted that the Technical Committee had given priority to the complementary documents TGP/7 Development of Test Guidelines, TGP/4 Management of Variety Collections, TGP/9 Examining Distinctness and TGP/10 Examining Uniformity. The Technical Committee had decided to issue a Revised Questionnaire on the Level of Involvement of the Applicant in the Growing Test and he advised that a report on the replies received prior to the session would be included in item 10 of the agenda. He finally added that the Technical Committee had proposed, to the Council of UPOV, Mr. Michael Camlin (United Kingdom) and Mrs. Julia Borys (Poland) as its Chairman and Vice-Chairman, respectively, and that the Council would consider the proposal during its thirty-fifth ordinary session of the Council in October 2001.

7. The Working Party was also informed about the meetings of *ad hoc* crops subgroups on molecular techniques. This subject would be discussed under item 5 of the agenda.

Report on the *AdHoc* Crop Subgroup on Molecular Techniques

8. The Technical Director provided a summary report (see CAJ/43/3 Add.) on the meetings of the *adhoc* crop subgroup on molecular techniques for maize, oilseed rape, rose, tomato and wheat, which had been established by the Technical Committee at its thirty-sixth session in April 2000. The five *adhoc* crop subgroup meetings had been held in February and March 2001:

(a) *Maize and Wheat* : NIAB, Cambridge, United Kingdom, February 26 to 28, 2001

(b) *Oilseed Rape, Rose and Tomato* : GEVES, Le Magneraud, France, March 19 to 21, 2001

9. The Technical Director explained that each subgroup had considered the potential for the use of molecular techniques on the basis of a work program developed by the Technical Committee. He added that, in particular, each subgroup had discussed the need for the development of molecular techniques in DUS testing and had considered various possible application models.

10. The Working Party had noted that, with regard to the need for molecular techniques in DUS testing, there had been consensus in the *adhoc* crop subgroups that the greatest need was in the management of reference collections. Microsatellite markers had been identified as the most suitable, currently available, technique. Single Nucleotide Polymorphism (SNP) was mentioned as an interesting new technique at an initial stage of development. The subgroups had agreed that further work should be focused on the harmonization of both markers and methodology.

11. Three approaches for the possible introduction of molecular techniques had been proposed at the *adhoc* crop subgroup meetings. Option 1: molecular techniques as predictors of traditional characteristics, either with a direct link (gene specific marker) or as an estimator of the traditional characteristic; option 2, calibration of molecular characteristics against traditional characteristics, and option 3, the development of a new system, followed by an impact analysis.

12. Further details for each of the *adhoc* crop subgroups linked to the Working Party were provided by the Chairman of each of the *adhoc* crop subgroups (maize, oilseed rape and wheat). Mrs. Beate Rucker (Germany), Chairperson of the subgroup for maize, added that this subgroup had identified the management of the large reference collections of maize and the assessment of traditional characteristics which were very expensive to assess, as areas where molecular techniques were in greatest need. From the methods, the Chairperson reported that microsatellites were currently considered as the most promising for maize. She reported that the subgroup identified areas for future development as: the assessment of essentially derived varieties, the measurement of genetic distances, the assessment of uniformity and the prediction of traditional characteristics. Mrs. Françoise Blouet (France), Chairperson of the subgroup for oilseed rape, explained that this subgroup had identified the management of the reference collections as the area of greatest need, good grouping characteristics, the lack of traditional characteristics and the strong influence of the environment in the description of the varieties. The Chairperson reported that microsatellites were considered to be the most promising technique and highlighted a study being undertaken by experts from the United Kingdom, which linked a morphological characteristic (leaf blade lobes) to molecular markers, which was an approach within option 1. With reference to the

other options for possible uses of molecular techniques, the Chairperson reported on a model linear function which incorporated molecular markers, QTLs related to traditional characteristics and a calibration of molecular characteristics and traditional ones, all being developed in France. She also reported on research showing a good correlation with field trials in the detection of off-types. She noted that further work was needed in the field of assessment of uniformity and stability. Mr. Michael Camlin, Chairman of the subgroup for wheat, reported that the subgroup had identified the management of reference collections and variety descriptions as the areas where molecular markers might be of most help. He noted that microsatellites were considered as the most appropriate technique and SNP as one that might be interesting in the future. The Chairman reported that the assessment of essential derivation and the management of reference collections using molecular techniques had been the focus of most of the work, and mentioned general discussions about the assessment of uniformity. He observed that the results on the use of STMS techniques, presented by Australia and the United Kingdom, showed a good level of repeatability and that a harmonized protocol would be developed.

13. Some experts from Mexico wondered why molecular markers should be treated in a different way from other characteristics and how the case of a DNA sequence included with the aim of improving a color would be considered by the UPOV system. The Technical Director noted that the current UPOV system worked well, and before moving to a new system, it was necessary to be confident that it would not undermine the value of protection. In relation to the second comment, he explained that the UPOV Convention required a variety to be clearly distinguishable from any other variety of common knowledge. He reported that an *ad hoc* group, formed by experts from the Technical Committee and the Administrative and Legal Committee (CAJ), had been proposed to discuss the possible use of molecular techniques in the DUS examination. An expert from Denmark asked about development in other Technical Working Parties in relation to the use of molecular markers in the DUS examination. An expert from Australia said that, in his country, some studies were being undertaken in sugarcane. He explained that the genetics of this crop were rather complicated but, nevertheless, they had been able to differentiate varieties with the existing markers. He also expressed the interest of his country in taking part in the Working Group on Biochemical and Molecular Techniques, and DNA Profiling in Particular (BMT) meeting in November 2001. Experts from New Zealand and from the Netherlands mentioned studies on potato in their countries. An expert from France noted that to date there had been no answer in relation to the possible use of molecular markers for the assessment of distinctness, and that the CAJ had stated that the Convention did not prohibit the use of these techniques, but the CAJ had also highlighted the importance of maintaining the quality of protection. He said that the concept of essentially derived varieties was a very good concept but he thought that it would not solve all the problems. The Chairperson of the Working Party stressed the need for having a well-defined methodology and proof of its reliability before accepting a molecular technique in the DUS examination.

14. The Working Party considered that it would be useful to introduce a subgroup for a vegetatively propagated agricultural crop and suggested that either sugarcane or potato might be appropriate. It was noted that a European Union project on potato was due to commence shortly, but would not produce any results for two to three years. As a first step, the Office of the Union (hereinafter referred to as "the Office") requested that members encourage the submission of papers, covering work on molecular techniques for these crops, to the forthcoming BMT meeting, to be held from November 21 to 23, 2001, in Hanover, Germany.

New General Introduction to the Examination of Distinctness, Uniformity and Stability and the Development of Harmonized Descriptions of New Varieties of Plants

15. The Technical Director introduced document TC/37/9(a). He explained that the previous document (TC/36/8), considered by the Working Party during its twenty-ninth session, had been amended according to the comments received by all the Technical Working Parties (TWPs) during year 2000 and had resulted in a further version, document TC/36/9, which had been presented to the CAJ at its forty-second session held in Geneva, in October 2000. In response to comments from the CAJ, a new draft (document TC/37/5, Annex I) had been produced by the Enlarged Editorial Committee and considered by the Technical Committee and the CAJ at their sessions in Geneva in April 2001. At the end of this drafting process, the Technical Committee agreed that a further version should be produced (document TC/37/9) and circulated among all the TWPs for a last round of comments.

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

16. The Working Party considered the draft General Introduction as presented in document TC/37/9(a), "Working Document for a New Revised 'General Introduction to the Examination of Distinctness, Uniformity and Stability and the Development of Harmonized Descriptions of New Varieties Of Plants'", together with the comments made by the Technical Working Party for Automation and Computer Programs (TWC) and the Technical Working Party for Vegetables (TWV), as presented in document TWA/30/5. The Working Party went through both documents and proposed the text to be revised as shown in Annex II of this document.

17. It also proposed that the Technical Committee should request each 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

18. The Working Party discussed document TWA/30/7 "Notes for Drafting TGP Documents". It was proposed that document TWA/30/7 be updated as shown in Annex III of this document.

(c) Draft TGP/7 "Development of Test Guidelines" (document TWA/30/6)

19. An expert from Spain proposed a discussion of the criteria for selection of the characteristics to be included in the Table of Characteristics of the UPOV Test Guidelines. He considered that if any characteristic used in any country was to be included, then the UPOV Test Guidelines would end up with a long list of characteristics. He proposed the inclusion of only those characteristics which were used in at least two or three countries and that were known to be useful. Another option he proposed was to have a limited set of characteristics in the table and to have an annex to the Test Guidelines with a list of characteristics used in the different countries. The Technical Director recalled that in document TC/37/9 it was proposed that a characteristic must have been used to establish DUS in at least one member, but did not specify the way in which characteristics should be

presented. An expert from France proposed to request the advice of the Technical Committee.

20. The expert from ASSINSEL expressed concern about the proposed Section 4 (Information on the Origin and Propagation of the Variety) of the Technical Questionnaire. He proposed that this section be optional and confidential. Several experts explained the situation in their countries, demonstrating different points of view in relation to the legal status of this information among countries. The Technical Director concluded that each member of the Union is free to decide on this matter but noted that this item would be discussed at the CAJ.

21. The Working Party proposed that the Technical Committee be invited to request the TWPs opinion on how to select and organize the characteristics to be included in the UPOV Test Guidelines.

22. The Working Party also proposed that the standard wording for Test Guidelines, as presented in document TWA/30/6 Annex I, be amended as shown in Annex IV of this document and the text for guidance notes for drafters of Test Guidelines, as presented in document TWA/30/6, be amended as shown in Annex V of this document. However, the Working Party was unable to consider all of this document and invited members to submit further written comments to the Office by the end of November 2001.

(d) TGP/8 "Use of Statistical Procedures in DUST Testing"
Section 4: Types of Characteristics and their Scale Levels

23. Members were invited to 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

24. Members were invited to 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

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

3. Management of Reference Collections

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

26. An expert from France introduced document TWA/30/17. He clarified that the document represented a personal point of view. He explained that the criteria to consider a variety a matter of common knowledge, given in the draft TG/1/3, made it clear that this should be considered on a worldwide basis. This made the list of varieties to be considered very large and presented an onerous practical and financial burden for the examining

authority. Different interpretation among members of the Union and the permanent evolution of the lists would produce an even more complicated situation. The aim of the document was to define a set of criteria to be considered in a given country or region of the world in order to establish a list of varieties of common knowledge against which the examining authority would need to check distinctness of any candidate variety. He concluded that the risk of making a wrong decision should be minimized, and the criteria proposed in the document might help the examining office to limit the risk, which could never be zero.

27. The delegate from ASSIN SEL expressed concern about point (c) on page 2 of the document (TWA/30/17) and on the availability of plant material not being a requirement for a variety to be considered as part of common knowledge. He also asked for harmonization between the International Plant Genetic Resources Institute's (IPGRI) and UPOV descriptors, requested information about the database of variety description under development and wondered about the impact of the definition of variety of the International Treaty on Genetic Resources for Food and Agriculture. An expert from France clarified that the "availability" to which the document referred was when a national office could not obtain a sample of the variety, which did not mean that the variety did not exist. The expert from New Zealand advised that, according to the legal situation in his country, someone opposing an application should be in a position to prove that the candidate variety was not distinct. Several experts considered that the system should provide for possibilities of checking the result of the examination, such as publication of data. Other experts expressed their concerns regarding the practical difficulties in including accessions of plant genetic resource banks in the examination or on how to handle information provided by plant genetic resources centers, such as those from IRRI. The expert from France explained that the proposal of the discussion of the document was at the technical level, and the situation might be one where no decision would be possible due to lack of information, but this should be clearly stated. The expert from CPVO noted that, in their experience, varieties of different origins and environments tended to provide a safety margin which should not be underestimated.

28. It was agreed that document TWA/30/17 should be revised to clarify that the technical examination could not always produce a complete examination of distinctness and to 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. An expert from France agreed to revise the document and, after consultation with a representative of the 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 TWPs in 2002.

29. An expert from Germany will draft a paper for TGP/3.2 "Developments and Explanations regarding Varieties of Common Knowledge" for consideration at the next Working Party.

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

30. An expert from Denmark introduced document TWA/30/16 Questionnaire on Harmonization of Descriptions of Barley. He explained that the aim of the questionnaire was to analyze the interaction between the expressions of the characteristics of the variety and the environment and to form the basis for discussion on how to use the descriptions produced under different environmental conditions in the DUS examination. He concluded that all

grouping characteristics were recorded with the same state of expression in the different testing offices, but some data needed careful evaluation to eliminate possible mistakes in future. Both asterisk and non-asterisk characteristics showed variation in the states of expression between countries for the same variety. He classified the characteristics in three groups, namely those with harmonized expression, acceptable harmonized expression and non-harmonized expression. He proposed to use statistics to see if it would be possible to eliminate the variation in descriptions due to the “country effect” and to focus more on the example varieties.

31. An expert from the United Kingdom presented the results of a questionnaire on plant variety description and environmental effects for wheat. The aim was similar to the questionnaire for barley. From the data obtained, the expert concluded that continuous characteristics would vary according to local environment, that some grouping characteristics showed variation, that some characteristics recorded in the laboratory also showed variation, and that some characters that might be expected to show variation (lower glume: shoulder width) showed consistency. Although variation was inevitable, he proposed to discuss suitable minimum distances, to carry out similar exercises before the revision of each UPOV Test Guidelines and to consider the lack of consistency in some grouping characteristics when using them for pre-screening.

32. An expert from Spain expressed his concern about differences in qualitative characteristics for the same variety and proposed including photographs in the UPOV Test Guidelines. The expert from France considered that it would not be possible to eliminate the effect of the interaction between genotype and the environment. One expert also highlighted the effect of the observer, which could sometimes explain the differences between countries. Experts from Australia and Germany considered that the timing of assessment was also very important. The expert from CPVO considered that it was necessary to develop a way to renew the list of example varieties more often. Some experts considered the results would be helpful for work on the publication of variety descriptions.

(c) Discrimination power of characteristics in oilseed rape

33. An expert from Germany introduced document TWA/30/12. She explained that the growing number of varieties in oilseed rape made the management of the reference collections more difficult. She explained that, in oilseed rape, quantitative characteristics had a higher discriminative power than qualitative ones and that the discriminative power of a characteristic was influenced by the location and by the collection grown. She considered that, on the basis of information from different years and locations, it would be possible to identify the characteristics with the highest discriminative power. These could be included in the Technical Questionnaire of the UPOV Test Guidelines in order to use them in the management of the growing trial.

34. Some experts expressed their concerns about using quantitative characteristics, such as “Leaf blade: intensity of green color” or “time of maturity”, for grouping purposes, because they can be highly influenced by the environment.

Summary and Future Action

35. The Working Party considered that the paper on barley (document 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 wide 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.

36. An expert from 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.

37. It was proposed that further studies should be undertaken on other crops and that, furthermore, recommendations 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 the expert from Denmark, should draft a model questionnaire for use in any further studies.

38. Germany agreed to undertake a study on winter oilseed rape (building on a related study presented in document 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 Working Party in 2002.

(d) Software using phenotypic distance for distinctness (document TWA/30/15)

39. 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.

40. 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.

41. 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 the nominated expert from the TWV and the nominated expert from the TWObefore circulation to all Technical Working Parties in 2002.

Process for Establishing Distinctness

42. The expert from the Netherlands introduced the document TWA/30/9 Corr., which included a theoretical process for establishing distinctness. The expert from ASSINSEL expressed his concern about the disclosure of the origin. The Office noted that the UPOV Convention required the breeder to provide all the information considered necessary for the examination of the variety.

43. The expert from Australia introduced document TWA/30/9 Add., which explained the Australian system for PBR. One expert sought clarification about who could be a qualified person in the Australian system. The expert from Australia replied that qualified experts can be of various backgrounds, such as scientists or even breeders, but he clarified that around 80% of the qualified persons were not breeders. He reported that the percentage of objections was 1-2%.

44. It was agreed that an expert from Australia, France and the Netherlands would develop document TWA/30/9 Corr. and document TWA/30/9 Add.1, respectively, into drafts for TGP/9.1 "General Procedures for Determining Distinctness," taking into account the comments made at the Working Party. 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 the nominee from the CPVO and the nominee from the TWO before sending to all TWPs in 2002. e

45. It was also agreed that an expert from France would draft a paper for the use of the hybrid formula on the basis of document TWA/30/13 (Use of Parental Formula for Examining Distinctness in Hybrids) and any written comments received by the end of November 2001 and document TWA/28/16 (DUSTesting of Oilseed Rape Varieties).

Example Varieties

46. The Working Party noted that the expert from France had received no comments on document TWA/29/20. The expert from Germany considered that it would be useful to explain the notion of "available" as used in the document. Some experts considered it would be useful to explore the possibility of developing different sets of example varieties for different agro-ecological regions. Other experts at the meeting wondered about the need for example varieties for qualitative characteristics, and one expert from the United Kingdom considered that it was necessary to improve the diagrams. The expert from France proposed to have each chapter explaining the choice of example varieties and how they should be used.

47. It was agreed that an expert from France would prepare guidelines for the development of example varieties for inclusion in TGP/7.

48. Following the proposal from the expert from Sweden, the Working Party 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.

49. 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.

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

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

51. The Office presented an interim report on the results of the questionnaire. The Working Party had some concern 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.

Draft Test Guidelines to be Presented to the Technical Committee

52. 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 presented in Annex VI of this document. 1

Cocksfoot (TG/31/7 (proj.))
 Field Bean (TG/08/5 (proj.))
 Sugarcane (TG/186/1 (proj.))
 Turnip Rape (TG/185/2 (proj.))
 Meadow Fescue, Tall Fescue (TG/39/7 (proj.))
 Tobacco (document TWA/29/14; TG/195/1 (proj.))
 Oilseed rape (TG/36/6; Revision of Chapter IV; document TWA/30/18)

The list of leading and interested experts is provided in Annex VII.

Date and Place of Next Session

53. The thirty-first session of the Working Party will be held in Brazil in September 2002. Offers to host subsequent sessions of the Working Party were received as follows:

2003	Japan
2004	New Zealand
2005	South Africa

Nomination of Chairman

54. The Working Party agreed to nominate Mr. Carlos Gomez - Etchebarneto to the Technical Committee, for proposal to the Council in October 2002, as the next Chairman of the Working Party.

Report on the Conclusions and Future Program

55. The Working Party took note of the Report of the Conclusions (document TWA/30/19) given by the officials from the Office jointly with the Chairperson, which included the following agenda:

1. Short reports on special developments in plant variety protection in agricultural crops (oral reports by the participants)

2. Important decisions taken during the last sessions of the Technical Committee and the Technical Working Parties

3. Report on the *Adhoc* Crop Subgroup on Molecular Techniques

4. New General Introduction to the Examination of Distinctness, Uniformity and Stability and the Development of Harmonized Descriptions of New Varieties of Plants and the associated TGP series of documents

TGP –3 VARIETIES OF COMMON KNOWLEDGE

3.2 Developments and Explanations Regarding Varieties of Common Knowledge (Germany to prepare a paper)

TGP –4 MANAGEMENT OF REFERENCE COLLECTIONS

4.1 Relationship between varieties of common knowledge and reference collections (document TWA/30/7 and France to prepare a new document)

TGP –6 ARRANGEMENTS FOR DUST TESTING

6.1 Summary of options for arranging DUS testing (Australia to prepare a document)

6.2 Arrangements for DUS testing (TC/38/13.)

TGP –7 DEVELOPMENT OF TEST GUIDELINES

7.1 Guidelines for the development of example varieties (document TWA/29/20 and France to prepare a new document)

TGP –9 EXAMINING DISTINCTNESS

9.1 General procedure for determining distinctness (document TWA/30/9 Corr.; document TWA/30/9 Add.1 and Australia, France and the Netherlands to prepare new documents)

9.3 Software using phenotypic distance for distinctness (document TWA/30/15 and France to prepare a new paper)

9.5 The use of hybrid formula in DUS assessment (document TWA/30/13 and France to prepare a new document)

TGP –12 SPECIAL CHARACTERISTICS

12.1 Characteristics expressed in response to external factors. Herbicide resistance (Australia to prepare a document); insect resistance (France to prepare a document)

12.2 Chemical constituents (TC/37/7 12E and the United Kingdom to prepare a new document)

TGP –13 GUIDANCE FOR NEW TYPES AND VARIETIES OF WHEAT AND BARLEY

- 13.1 General guidance for new types (TC/36/7: 13A & B and the United Kingdom to prepare a new document)
 - 13.2 Guidance for new types of variety (TC/36/7: 13A & B and the United Kingdom to prepare a new document)
5. Plant variety description and environmental effects (Australia, Germany, United Kingdom to prepare documents on spring wheat, oilseed rape and wheat)
 6. Project for exchanging seed of selected varieties between interested countries (report on the development of the project)
 7. Final discussions on draft Test Guidelines for
 - Rice (document TWA/30/14)
 - Lotus (TG/193/1(proj.))
 - White Clover (TG/38/6; document TWA/30/4)
 8. Discussion on working paper on Test Guidelines for:
 - Potato (TG/23/5; document TWA/30/3)
 - Lupins (TG/66/3; document TWA/30/2)
 - Coffee
 - Grain Amaranth
 - Medicago (excl. sativa)
 - Lucerne (Revision)
 9. Report of the conclusions of the session and future program
 10. Date and place of next session
 11. Closing of the session.

Technical Visit

56. On September 5, the Working Party visited the *Valle de Mexico* research center of the *Instituto Nacional de Investigaciones Forestales, Agrícolas y Pecuarias* (INIFAP). The Working Party was welcomed by Mr. Jesús Moncada de la Fuente, Chief Director of INIFAP, who explained the objectives and research policy of the institute. Researchers demonstrated the varieties of barley, grain amaranth, bean, oat and maize developed at the research center as well as the activity at INIFAP in relation to the conservation of plant genetic resources. Field trials showing the variability in maize were on display.

57. *This report has been adopted by correspondence.*

[Annex I follows]

LIST OF PARTICIPANTS

I. MEMBERS

AUSTRALIA

Michael COX, Program Leader, Plant Improvement, Bureau of Sugar Experiment Stations (BSES), Private Bag 4, Ashfield Road, Bundaberg Q4670 (tel.: +61 7 41325231, fax: +61 7 41325253, e-mail: m.cox@bese.org.au)

Tanvir Z. HOSSAIN, Plant Breeder's Rights Office, Department of Agriculture, Fisheries and Forestry, GPO Box 858, Canberra, ACT 2601 (tel. +61 2 6271 6451, fax: +61 2 6272 3650, e-mail: tanvir.hossain@affa.gov.au)

BRAZIL

Marcos LANDELL, Cordenador/Director, Instituto Agronomico, C.P. 271, Ribeirão Preto, 14001-970 São Paulo (tel. +55 16 621 1110, fax +55 16 637 2650, e-mail: mlandell@highnet.com.br)

Oscar PONTES, Research Manager, Souza Cruz / BAT, POB 133 Ríó Negro – PR Z IP 83880-000 Av. Gal Plínio Túsinho 3200 (e-mail: oscar.pontes@scruc.com.br)

Alvaro VIANA National Plant Varieties Protection Service, Espalanada Dos Ministérios, Blaco "D" Anexo A, Salas 001 a 012 (tel. +55 61 218 2163; +55 61 218 2557; e-mail: snpc@agricultura.gov.br).

Ernani Aloísio WEISS, Profigendo Brasil Ltda. (Tel. 51 3715 3309, fax 51 3713 3866, e-mail: profigen@profigen.com.br)

CANADA

Valerie SISSON (Ms.), Plant Breeders' Rights Office, Canadian Food Inspection Agency (CFIA), 59 Camelot Drive, Nepean, Ontario, K1A 0Y9 (tel.: +613 -225-2342, fax: +613 -2286629, e-mail: vsisson@em.agr.ca)

COLOMBIA

Jaime LUGO, Instituto Colombiano Agropecuario (ICA), Predios Universidad del Tolima, Iloague, Tolima, Colombia. (tel. +57 8 264 3066, fax +57 8 288 9826, e-mail: semillas@ica.gov.co)

CZECHREPUBLIC

Jirí SOUCEK, Head of Department, Central Institute for Supervising and Testing in Agriculture, Department of Plant Variety Rights and DUS Tests, Za opravnou 4, 150 06 Praha 5 - Motol (Tel. +420 -2- 57211755, fax +420 -2-57211752, e-mail: jiri.soucek@ooz.zeus.cz)

DENMARK

Gerhard DENEKEN, Director, Department of Variety Testing, Postbox 7, Teglvaerksvej 10, 4230 Skaelskoer (tel.: +45 5816 06 01, fax: +45 5816 06 06, e-mail: gerhard.deneken@agrsci.dk)

Erik LAWAETZ, Department of Variety Testing, Postbox 7, Teglvaerksvej 10, 4230 Skaelskoer (tel.: +45 5816 06 03, fax: +45 5816 06 06, e-mail: erik.lawaetz@agrsci.dk)

ESTONIA

Pille ARDEL (Mrs.), Head, Variety Control Department, Plant Production Inspectorate, 71024 Viljandi (tel.: +3724334650, fax: 3724334650, e-mail: pille.ardel@plant.agri.ee)

FINLAND

Leena PIETILÄ (Mrs.), Plant Production Inspection Centre, Seed Testing Department, P.O. Box 111, 32201 Loimaa (tel.: +358-2-760 56 216, fax: +358-2-760 56 222, e-mail: leena.pietila@kttk.fi)

FRANCE

Françoise BLOUET (Mme.), Groupe d'étude et de contrôle des variétés et des semences (GEVES), La Minière, F-78285 Guyancourt Cedex (tel.: +33 -130833582, fax: +33 -130833678, e-mail: francoise.blouet@geves.fr)

Joël GUIARD, Deputy Director, GEVES, La Minière, 78285 Guyancourt Cedex (tel.: +33130833580, fax: +33130833629, e-mail: joel.guiard@geves.fr)

GERMANY

Beate RÜCKER (Mrs.), Bundessortenamt, Osterfelddamm 80, 30627 Hannover, (tel.: +49-511-9566650, fax: +49 -511-563362, e-mail: beate.ruecker@bundessortenamt.de)

HUNGARY

László LÁZÁR, Deputy of Division, National Institute for Agricultural Quality Control, H-1024 Budapest, Keleti Károly u. 24 (tel.: +36 1 212 3127, fax: +36 1 212 5800, e-mail: lazarl@omni.hu)

Károly NESZMÉLYI, Director -General, National Institute for Agricultural Quality Control, H-1024 Budapest, Keleti Károly u. 24 (tel.: +36 1 212 4711, fax: +36 1 212 2673, e-mail: ommiszam@mail.datanet.hu)

JAPAN

Chukichi KANEDA, Expert of Rice, Association for International Cooperation of Agriculture and Forestry, 19 Ichiban-cho, Chiyoda-ku, Tokyo 102-0082 (tel.: +81 3 3263 7377, fax: +81 3 3234 5137, e-mail: c.kaneda@aicaf.or.jp)

Toshiharu SHIMAZAKI, Examiner for Agricultural Crops, Plant Variety Examination Office, Seeds and Seedlings Division, Ministry of Agriculture, Forestry and Fisheries, 1-2-1, Kasumigaseki, Chiyoda-ku, 100-8950, Tokyo (tel.: +81-33580518, fax: +81-335026572, e-mail: toshiharu.shimazaki@nm.maff.go.jp)

KENYA

Evans O. SIKINYI, Registrar, Plant Breeders' Rights Office, Kenya Plant Health Inspectorate Service, Headquarters - Waiyaki Way, P.O. Box 49592, Nairobi (tel.: +254 244 0087 fax: +254 244 8940 e-mail: kephis@nbnet.co.ke)

MEXICO

J. de Jesús ALCÁZAR ANDRADE, Semillas y Agroproductos Monsanto, Av. Cuauhtémoc 421 Cd. del Sol, Zapopan, Jalisco (tel.: +52 3 679 7979, fax: +52 3 679 7900, e-mail: jesus.m.alcazar@monsanto.com)

Beatriz ÁLVAREZ DE LUCIO (Ms.), Álvarez De Lucio Asociados, Av. Insurgentes Sur 1337-602 Col. Insurgentes Mixcoac, 03920, México, D.F. (tel.: +52 561 541 12, fax: +52 561 53491, e-mail: alvarezdelucio@prodigy.net.mx)

José Sergio BARRALES, Professor- Investigator, Departamento de Fitotecnia, Universidad Autónoma Chapingo (UACH), Km. 38.5 Carretera México- Texcoco, 56230 Chapingo, Estado de México (tel.: +52 595 21642, e-mail: jbarralesd@correoweb.com.mx)

Eduardo BENÍTEZ PAULÍN, Director, Servicio Nacional de Inspección y Certificación de Semillas (SNICS), Lope de Vega 125-2, Chapultepec Morales, 11570 México D.F. (tel.: +52 52039427, fax: +52 52506483, e-mail: eduardo.benitez@sagar.gob.mx)

Aquiles CARBALLO CARBALLO, Professor- Investigator, Colegio de Postgraduados (CP), Km. 35.5 Carretera México- Texcoco, 56230 Montecillo, Estado de México (tel.: +52 595 20257, e-mail: carballo@colpos.colpos.mx and acc1@prodigy.net.mx)

Héctor CHAGOYA, Becerril, Coca & Becerril, S.C., Thiers 251 Pisos 12 y 14, 11590 México, D.F. (tel. +52 5 254 0400, fax +52 5 255 0302, e-mail: becerril@inetcorp.net.mx)

Alejandro ESPINOSA CALDERÓN, Instituto Nacional de Investigaciones Forestales, Agrícolas y Pecuarias (INIFAP), Serapio Rendón 83, 2º piso, Colonia San Rafael, Delegación Cuauhtémoc, 06470, México D.F. (tel.: +52 3140 1661, fax: +52 5246 9021, e-mail: espinoal@inifap2.inifap.conacyt.mx)

Norma Isabel GARCÍA (Ms.), Becerril, Coca & Becerril, S.C., Thiers 251 Pisos 12 y 14, 11590 México, D.F. (tel. +52 5 254 0400, fax +52 5 255 0302, e-mail: becerril@inetcorp.net.mx)

Enriqueta MOLINA (Ms.), Subdirectora, Servicio Nacional de Inspección y Certificación de Semillas (SNICS), Lope de Vega 125 -2, Chapultepec Morales, 11570 México D.F. (tel.: +52 52039667, fax: +52 52506483, e-mail: enriqueta.molina@sagar.gob.mx)

Rafael PADILLA RAMÍREZ, Productora Nacional de Semillas (PRONASE), Dr. José Ma. Vértiz Núm. 363, Col. Doctores, 06720 México, D.F. (tel.: +52 5519 2737, fax: +52 5519 1453, e-mail: spp.pronase@sagar.gob.mx)

Martín PEREYRA, Área de Variedades Vegetales, Clarke Modet, San Francisco 310 Col. del Valle 03100, México, D.F. (tel. +52 5 340 2300, fax +52 5 523 6418, e-mail: info@clarkemodet.com.mx)

Guillermo PÉREZ JERÓNIMO, Professor–Investigator, Universidad Autónoma Metropolitana Unidad Xochimilco (UAM -X), Calzada del Hueso 1100, Col. Villa Quietud, 04960 Coyoacán, D.F. (tel.: +52 5483 7230, e-mail: gjeron@servidor.unam.mx)

Ma. Teresa RIVERA (Ms.), Consultor Técnico de Patentes y Variedades Vegetales, Clarke Modet, San Francisco 310 Col. del Valle 03100, México, D.F. (tel. +52 5340 2309, fax +52 523 6418, e-mail: trivera@clarkemodet.com.mx)

Salvador TAFOLLA, Basham, Ringey Correa, S.C., Paseo de los Tamarindos 400 -A 9º Piso, Bosques de Las Lomas, 05120 México, D.F. (tel. +52 5 261 0401, fax +52 5 261 0496, e-mail: basham@basham.com.mx)

NETHERLANDS

Henk BONTHUIS, Plant Research International, P.O. Box 16, 6700 AA Wageningen en (tel.: +31 31 747 6823, fax: +31 31 741 8094, e-mail: h.bonthuis@plant.wag -ur.nl)

NEW ZEALAND

Philip RHODES, Plant Variety Rights Office, P.O. Box 130, Lincoln (tel.: +64 3 325 6356, fax: +64 3 783 3946, e-mail: phil.rhodes@pvr.govt.nz)

NORWAY

Haakon SØNJU, P.O. Box 3, N -1431 Ås (tel.: +4764972513, fax: +4764944410, e -mail: haakon.sonju@slt.dep.no; haakon.sonju@landbrukstilsynet.dep.no)

SOUTHAFRICA

Joan SADIE (Mrs.), Directorate, Genetic Resources, Private Bag X5044, Stellenbosch 7599 (tel.: +27 21 809 1648, fax: +27 21 887 2264, e -mail: JoanS@nda.agric.za, joan@pgb4.agric.za)

SPAIN

Cecilio PRIETO, Director Técnico de Evaluación de Variedades y Laboratorios, Subdirección General de Investigación y Tecnología, Instituto Nacional de Investigación y Tecnología Agraria y Alimentaria (INIA), Crta. de la Coruña, Km. 7.5, 28040 Madrid (tel.: +34-91-347 6963, fax: +34-91-3474168, e -mail: prieto@inia.es)

Luis SALAICES, Jefe de Área del Registro de Variedades, Oficina Española de Variedades Vegetales (OEVV), Ministerio de Agricultura, Pesca y Alimentación, Av. de Ciudad de Barcelona 6, 28007 Madrid (tel.: +34-91-347 69 21, fax: +34-91-347 69 32, e -mail: lsalaice@mapya.es)

SWEDEN

Ulf KJELLSTRÖM, Swedish Seed Testing and Cert. Institute, Onsjövägen, 26881 Svalöv (tel.: +46 -418667420, fax: +46 -418667408, e -mail: ulf.kjellstrom@su -kontroll.se)

UNITED KINGDOM

Eoin D. BUTLER, National Institute of Agricultural Botany (NIAB), Huntingdon Road, Cambridge CB3 0LE (tel.: +44 1223 342 288, fax: +44 1223 342 287, eoin.butler@niab.com)

Michael CAMLIN, Department of Agriculture for Northern Ireland, Plant Testing Station, 50 Houston Road, Crossnacreevy, Belfast BT6 9SH (tel.: +44 -2890-548 000, fax: +44 -02890-548001, e -mail: michael.camlin@dardni.gov.uk).

II. OBSERVERS

GREECE

Dimitrios BATZIOS, Variety Research Institute of Cultivated Plants, 57400 Sindos, Thessaloniki (tel.: +3031799684, fax: +3031796343, e-mail: varinst@spark.net.gr)

Apostolina LIOUSSA (Mrs.) Variety Research Institute of Cultivated Plants, 57400 Sindos, Thessaloniki (tel.: +3031796264, fax: +3031796342, e-mail: varinst@spark.net.gr)

REPUBLIC OF KOREA

Keun-Jin CHOI, Examination Officer, National Seed Management Office, 433 Anyang 6-dong, Anyang -si, Kyonggi -do (tel.: +823434670190, fax: +823434481216, e-mail: kjchoi@seed.go.kr)

Yong-Woo LEE, National Seed Management Office, 433 Anyang 6 -dong, Anyang -si, Kyonggi-do (tel.: +823434670190, fax: +823434481216, e-mail: yongwoo@seed.go.kr)

III. OBSERVER ORGANIZATIONS

EUROPEAN COMMISSION

Dirk THEOBALD, Community Plant Variety Office, B.P. 2141, F -49021 Angers, France (tel. +33-241256442, fax +33 -241256410, e-mail: theobald@cpvo.eu.int)

Marcantonio VALVASSORI, rue de la Loi 861/07, B -1040 Brussels (tel.: +3222956971, fax: +3222969399, marcantonio.valvassori@cec.eu.int)

Anne WEITZ (Mme.), Community Plant Variety Office, B.P. 2141, F -49021 Angers, France (tel. +33 -241256437, fax +33 -241256410, e-mail: weitz@cpvo.eu.int)

ASSINSEL

Patrick HEFFER, ASSINSEL (International Association of Plant Breeders), Chemin du Reposoir, 7, CH -1260 Nyon, Switzerland (tel.: +41 22 365 4420, fax: +41 22 365 4421, e-mail: isf@worldseed.org)

IV. OFFICER

Françoise BLOUET, (Mrs.), Chairperson

V. OFFICE OF UPOV

Peter BUTTON, Technical Director, 34, chemin des Colombettes, 1211 Geneva 20, Switzerland (tel. +41 -22-338 8672, fax +41 -22-733 03 36, e -mail: peter.button@upov.int, Website:<http://www.upov.int>)

Raimundo LAVIGNOLLE, Senior Counsellor, 34, chemin des Colombettes, 1211 Geneva 20, Switzerland (tel. +41 -22-338 9565, fax +41 -22-733 0336, e -mail: raimundo.lavignolle@upov.int)

[AnnexII follows]

ANNEXII

PROPOSED AMENDMENTS TO DOCUMENT 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 breeder¹. 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 fulfillment 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.

3. COOPERATION IN DUS TESTING

3.1 Cooperation Between Testing Authorities

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

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 reports 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, 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 l 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 l 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
Standard Test Guidelines Characteristic	<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>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>
Asterisked Characteristic	<u>1.</u> Characteristics that are important for the international harmonization of variety descriptions.	<p><u>1. Must be a characteristic included in the Test Guidelines</u></p> <p><u>42.</u> 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><u>23.</u> Accepted as useful for function 1.</p> <p><u>34.</u> Particular care should be taken before selection of disease resistance characteristics.</p>

5. EXAMINING DISTINCTNESSES

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 expression 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 expression 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 ~~key~~ 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 variety 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	Use of Statistical Procedures in DUSTe sting Good Statistical Practices for DUSTesting

[Annex III follows]

UPDATE OF DOCUMENT TWA/30/7, NOTES FOR DRAFTING TGP DOCUMENTS

Ref.		Title
TG/0	Office	<u>List of TGP Documents and Latest Issue Dates</u> (Coordinator: Office of the Union)
TGP/1	Office	<u>General Introduction With Explanations</u> (Coordinator: Office of the Union)
TGP/2	Office	<u>List of Test Guidelines Adopted by UPOV</u> (Coordinator: Office of the Union)
TGP/3		VARIETIES OF COMMON KNOWLEDGE (Coordinator: Office of the Union)
3.1	Office (Draft: CAJ/43/2)	The Notion of Breeder
3.2	(Mrs. Scott, <u>(GB)</u> <u>TWA</u>)	Developments and Explanations Regarding Varieties of Common Knowledge <u>Mrs Rucker (DE) to draft paper for consideration at the TWA in 2002.</u>
TGP/4		MANAGEMENT OF VARIETY COLLECTIONS (Coordinator: Mr. Guiard, FR) <i>TWACOMMENT: Maybe necessary, in future, to merge with TGP/9 "Examining Distinctness"</i>
4.1	TWA TWO	General Guidance for the Management of Variety Collections Mr. Guiard, (FR) (Draft: TC/36/74A&B) to draft <u>to produce draft for circulation to TWPs in 2002, based on TWA comments on document TWA/30/17 (Relationship between varieties of common knowledge and [reference] variety collections) and discussions with Mr Green (GB) and TWO representative.</u> Mr. Green (GB) to participate in development TWO to participate in development
4.2	TWF	Guidance for variety collections which are planted at different times to candidate varieties (e.g. trees)

TGP/5		EXPERIENCE AND COOPERATION IN INDUSTRIAL 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 forms 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

5.10	TC/(36)/4	ListofSpeciesinWhichPracticalTechnicalKnowledgeHasBeenAcquiredorFor WhichNational GuidelinesHaveBeenEstablished
5.11	Office (Draft:GB paper)	NotificationofAdditionalCharacteristics

TGP/6		ARRANGEMENTSFORDUS TESTING (Coordinator:OfficeoftheUnion)
6.1	TWO	SummaryofOptionsforArrangingDUSTesting TWOtodraftpropos al
6.2	C/27/15, AnnexIII	Model Administrative Agreement for International Cooperation in the Testing of Varieties
6.3	<u>TWA</u>	ConsiderationofApplicant <u>Guidelinesforthe</u> Involvement <u>ofBreeders</u> inthe GrowingTest <u>MrHossain(AU)toproducereviseddraftofTC/36/76B,basedoncommentsfrom TWAin2000andresponsestoTC/37/7asreportedbytheOfficeoftheUnion.</u>
6.4	C/27/15, AnnexII	Declaration on the Conditions for the Examination of a Variety Based on Trials CarriedOutbyoronBehalfofBreeders
6.5	<u>Office</u>	<u>Survey Information</u> ontheLevelofInvolvementofthe Applicant <u>Breeder</u> inthe GrowingTest <u>OfficetoproducereportbasedonresponsestoTC/37/7Rev.</u>

TGP/7	(Draft: TC/37/10)	DEVELOPMENTOFTEST GUIDELINES (Coordinator:Mrs.Buite ndag,ZA)
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TGP/8		USE OF STATISTICAL PROCEDURES IN INDUSTRIES (Coordinator: UPOV Office)
8.1	TWC TWO	Introduction (S. Gregoire (FR), L. Keizer (NL) to draft for TWC meeting in 2002) TWO to participate in development
8.2	TWC	Validation of Data and Assumptions (K. Kristensen (DK), J. Thissen (NL) to draft for TWC meeting in 2002)
8.3	TWC	Experimental Design Practices (to cover TGP/7) 8.3.1 Selection of trial site 8.3.2 Size and elements of the trial: plot size and shape, no. of replications, design etc... 8.3.3 Sampling from the trial 8.3.4 Type I and Type II errors (J. Thissen (NL), U. Meyer (DE) to draft by end July 2001) <u>Office of the Union to circulate, to other TWPs, for comment during 2001.</u>
8.4	TWC	Type of Characteristics and their Scale Levels 8.4.1 Ratio scaled data 8.4.2 Interval scaled data 8.4.3 Ordinal scaled data 8.4.4 Nominal scaled data 8.4.5 Combined scaled data (U. Meyer to draft by 15 th June 2001)
8.5	TWC	Statistical Methods for DUS Examination (S. Watson, A. Roberts (GB) to prepare list of methods, including multivariate analysis, for TWC meeting in 2002)
8.6	TWC	Examining DUS in Bulk Samples (K. Kristensen (DK) to draft for TWC meeting in 2002)

TGP/9		EXAMINING DISTINCTNESS (Coordinator: UPOV Office)
9.81	TWV TWA TWO	Model systems <u>General Procedures</u> for Determining Distinctness Mr Semon (CPVO) to draft paper for presentation to TWV and other TWP's in 2002. <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 A Add.1, for "official" and "breeder" testing system respectively. Revised paper 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> TWO wish to participate in development of proposal

9.42	TWA	<p>ConsiderationoftheApplicationofStatisticalMethods (MakereferencetoTGP/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>
9.23	<p>TWV</p> <p>TWA</p> <p>TWO</p>	<p>Consideration of All Varieties of Common Knowledge in the Examination of Distinctness:</p> <p>9.2.1 CategorizationofVarieties(TestGuidelines)</p> <p>9.2.2 Pre-screening using variety descriptions (Descriptions from the sameordifferentlocations)</p> <p>9.2.3 Organizingthegrowingtrial(Grouping;Randomization)</p> <p>Mr van Ettekoven (NL) to draft paper for presentation to TWV and other TWP's in 2002.</p> <p><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 Ettekoven (NL) and the TWOnominee, followed by circulation to the TWP's in 2002.</u></p> <p><u>2. TWA propose a link between this section and TGP/4 "Management of Variety Collections".</u></p> <p>TWO is to participate in development of proposal</p>
9.34	<p>TWC</p> <p>TWA</p> <p>TWO</p> <p>TWF</p>	<p>ExaminingDistinctnessinDifferentTypesofVariety</p> <p>(B.Ruecker (DE) to draft by end July 2001)</p> <p>TWA to participate in development <u>by commenting on TWA/30/10 (Draft Section for TGP/9 Examining Distinctness).</u></p> <p>TWO to participate in development</p> <p>TWF to participate in development of section on Rootstocks</p>
9.45	TWA	<p>UseoftheParentalFormulaforExaminingDistinctnessinHybrids</p> <p>TWA to draft <u>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 (DUSTestingofOilseedRapeVarieties).</u></p>
9.56	TWC (TWC/ 17/10and 18/2)	<p>UseofMultipleLocationsintheExaminationofDistinctness (S.Gregoire (FR) to draft for TWC meeting in 2002)</p>
9.67	TWC (TC/33/7) (TWC/ 14/6)	<p>RecommendedStatisticalMethods</p> <p>9.6.1 COYD</p> <p>9.6.2 LSD</p> <p>Annex Probabilitylevels</p> <p>(S.Watson,A.Roberts (GB) to draft for TWC meeting in 2002)</p>

9.7	TWV TWA TWO	Model systems for Determining Distinctness Mr Semon (CPVO) to draft paper for presentation to TWV and other TWP' sin 2002. TWA wishtoparticipateindevelopmentofproposal TWO wishtoparticipateindevelopmentofproposal
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TGP/10		EXAMINING UNIFORMITY (Coordinator: UPOV Office)
10.1	UPOV Office TWO	Considering the Application of Statistical Methods (Make reference to TGP/8) TWO wishtoparticipateindevelopment
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. Rücker (DE) to draft by end of July 2001 <u>for circulation to TWA, TWO and TWF for comment in 2001</u>). Revised version to be prepared and circulated to all TW <u>P sin 202</u> .
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		EXAMINING STABILITY
	TWV	CPVO to draft paper for presentation to TWV and other TWP' sin 2002. (To include explanation of difference between "verification" and examination of stability)

TGP/12		SPECIALCHARACTERIST ICS (Coordinator:OfficeoftheUnion)
12.1	(Draft: TC/36/7 12D) TWW <u>TWA</u> <u>TWA</u>	CharacteristicsExpressedinResponsetoExternalFactors 12.1.1 DiseaseResistance MrvanEttekoven (NL) todraft paperforpresentationtoTWWandother TWP' sin2002. 12.1.2 ChemicalResponse(e.g.Herbicidetolerance) <u>MrHossain(AU)todraftpaperforTWAin2002.</u> <u>12.1.3 InsectResistance</u> <u>MrGuiard(FR)todraftpaperforTWAin2002.(MrHossain(AU)to</u> <u>contribute)</u>
12.2	<u>TWA</u>	Chemicalconstituents 12.2.1 ProteinElectrophoresis <u>MrCamlin(GB)andMrGuiard(FR)todraftpaperforTWAin2002,</u> <u>withreferencetoTC/36/712E.</u>
12.3	(Draft: TC/36/7 12B)	ExaminationofcombinedcharacteristicsusingImageAnal ysis
12.4	TWW	Examinationofscentandflavorcharacteristics TWWtodraft

TGP/13		GUIDANCEFORNEWTYP ESANDSPECIES (Coordinator:Ms.Scott,GB)
13.1	TWA TWO	GeneralGuidanceforNew Typesand Species <u>MrCamlin(GB) to produce paper for TWA and TWO in 2002, based on TC/36/7</u> <u>13A&B,inconsultationwithTWOrepresentative.</u> TWOwishtoparticipateindevelopment
<u>13.2</u>	<u>TWA</u>	GuidanceforNewTypesofVariety <u>MrCamlin(GB) to produce paper for TWA and TWO in 2002, based on TC/36/7</u> <u>13A&B,inconsultationwithTWOrepresentative.</u>
13. <u>32</u>	TWF	GuidanceforNewMulti -andInter -specificHybrids TWFtodraft

TGP/14		GLOSSARY OF TECHNICAL, BOTANICAL AND STATISTICAL TERMS USED IN UPOV DOCUMENTS <i>(Coordinators: Office of the Union, Ms. Scott, GB+Mrs. Buitendag, ZA, Mr. Law, GB+Mr. Pilarczyk, PL+Mr. Harsanyi, HU)</i>
14.1	UPOV Office (Draft: TC/36/7 18A)	Technical Terms
14.2	??? (Draft: TC/36/5)	Botanical Terms
14.3	Mr. Hossain, (AU) (Draft: TWA/29/9)	Statistical Terms

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

[AnnexIV 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

Main Common Name (E, F, G & S)
[type of] Latin name
UPOV Code

see TGP/7 Title Page

GUIDELINES

FOR THE CONDUCT OF TESTS

FOR DISTINCTNESS, UNIFORMITY AND STABILITY

Alternative Latin Names ¹:

Alternative Common Names ¹

English	French	German	Spanish

¹ 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 Website?) 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 DESCRIPTORS OF NEW VARIETIES OF PLANTS."

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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/71.1]

[see TGP/71]

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/Breeder**s 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/72.2]

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 formulas 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/72.4].

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/73.1].

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/73.3] plants which should be divided between [see TGP/73.3] 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/74.1] plant parts or [see TGP/74.1] parts taken from each of [see TGP/74.1] plants.

4.2.3 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.

4.2.3.1 *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/74.2.1]

4.2.3.2 *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/37/95.3.3.2]. 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.

4.3.2 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/74.3]

4.3.2.2 *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/74.4]

[4.5 TimingofObservationofClusteredCharacteristics –ifapplicable]

[seeTGP/74.5]

[4.6 ObservationofColor -ifapplicable]

[seeTGP/74.6]

5. GROUPINGOFVARIETIE SANDORGANIZATIONO FTHEGROWINGTRIAL

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/75.3]

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/76.1.1]

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/76.1.2]

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 DU Sexamination may be conducted

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

[xxxx]

[see TGP/76.4]

6.5 Legend:

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

[see TGP/76.5]

(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

(^{Footnote}) Footnote explaining reason why method of observation not provided

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

7. TABLEOFCHARACTERIS TICS

TableofCharacteristics/Tableaudecaractères/M erkmalstabelle/Tabladecaracteres

[seeTGP/7,Chapter7]

Stage ¹⁾					Example	Varieties	
Stade ¹⁾	English	français	deutsch	español	Exemples		Note/
Stadium ¹⁾					Beispielssorten		Nota
Estadio ¹⁾					Variedadesejemplo		

Box 1	Box2	Box3	Box3	Box3	Box3	Box4	Box 5
-------	------	------	------	------	------	------	-------

⁽¹⁾ Whereappropriate,theoptimumstageofdevelopmentfortheassessmentofthecharacteristicis indicatedaccordingtothescaledescribedinchapter8.

8. EXPLANATIONSONTHE TABLEOFCHARACTERIS TICS

Ad.[char.no.]: [HeadingofCharacteristic]

9. LITERATURE

[seeTGP/7,Section9]

10. TECHNICALQUESTIONNAIRE

ReferenceNumber
(not to be filled in by the
[applicant](#)[breeder](#))

TECHNICALQUESTIONNAIRE
tobecompletedinconnectionwithanapplicationfor plantbreeders'rights

1. SubjectoftheTechnicalQuestionnaire

1.1 *LatinName* [seeTGP/71.1]

1.2 CommonName [seeTGP/71.1]

2. Applicant

Name
Address
Tel.No.
FaxNo.
E-mailaddress

3. Proposeddenominationorbreeder'sreference

~~**CONFIDENTIALSECTION**~~

4. Informationontheoriginandpropagationofthevariety

4.1 Origin

- ~~(a) Productofadeliberatecrossbetweendifferentvarietiesundertakenbytheapplicant
(pleaseprovidedetails):~~
- ~~(b) Selectionofmutantorvariantplantfromavarietyofcommonknowledge
(pleaseprovidedetails):~~
- ~~(c) Discovery
(pleaseprovidedetails):~~
- ~~(d) Other
(pleaseprovidedetails):~~

OPTIONS

4.2 MethodofPropagatingthevariety

- ~~(a) Seed:~~
 - ~~(i) Self-pollinated~~
 - ~~(ii) Cross-pollinated~~
 - ~~controlledpopulation~~
 - ~~syntheticvariety~~
 - ~~(iii) Hybrid[seeTGP/7TQ4]~~
- ~~(b) VegetativePropagation:
(pleaseprovidedetails):~~

OPTIONS

5. Characteristics ofthevarietytobeindicated(thenumberinbracketsrefers tothecorresponding characteristicinTestGuidelines;pleasemarkthestateofexpressionwhichbestcorresponds).

[seeTGP/7TQ5]

Characteristics	ExampleVarieties	Note

6. Similar varieties and differences from these varieties

Denomination of similar variety	Characteristic in which the similar variety is different ^{o)}	State of expression of candidate variety	State of expression of similar variety
---------------------------------	--	--	--

^{o)} 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/7TQ7.3]

8. Authorizationforrelease

(a) Doesthevarietyrequirepriorauthorizationforreleaseunderlegislation concerningtheprotectionoftheenvironment,human andanimalhealth?

Yes No

(b) Hassuchauthorizationbeenobtained?

Yes No

Iftheanswerto(b)isyes,pleaseattachacopyoftheauthorization.

9. DeclarationofsuitabilityofmaterialforDUSexamination

Tothebestofmyknowledge thematerialsubmittedforexaminationisfreefromanyfactors thatmayaffecttheexpressionofthecharacteristicsofthevariety,withinthetermsofchapter 2.5.3ofTG/1/3“RevisedGeneralIntroductiontotheExaminationo fDistinctness,Uniformity andStabilityandtheDevelopmentofHarmonizedDescriptionsofNewVarietiesofPlants”.

YES [..]
NO [..](pleaseprovidedetails)

Name_____

Signature_____

Date_____

[AnnexVf ollows]

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



TWA/30/19 **Annex4**
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 Revision 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 wordi ng...*”) 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.

TITLEPAGE

- MainCommonName: *Guidance:* To be presented in all UPOV languages (bold capital letters)
- [Types of]LatinName: *Guidance:* [types of] section to be completed where the coverage of the Latin name is wider than the coverage of the TestGui delines (Latin name in italics)
- UPOVCode: *Guidance:* (To be developed)
- AlternativeLatinNames: *Guidance:* All known alternative Latin names to be presented (using UPOV code when established)
- AlternativeCommonNames: *Guidance:* All well-known alternative common names, in UPOV languages, to be presented (using UPOV code when established)

1. SUBJECT OF THESE GUI DELINES

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, cutting 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 [guidance to be developed]	
a = Level of plant establishment in growing trial from initial submitted seed/propagule	
$Y_{(n)}$ = Number of special tests $_{(n)}$	
$r_{(n)}$ = Number of plants per test $_{(n)}$ [guidance to be developed]	
$b_{(n)}$ = Level of plant establishment in special test $_{(n)}$ 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 sample to other DUS examiners

>> Number of Propagules/Seeds Required =

OR

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

TSW = Thousand Seed Weight [see TGP/72.2]	
---	--

>> 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) it~~ 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 -type tolerated in a sample size of [numbers 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 [P 1] 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.

(Separated 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.”~~

Standard wording where appropriate:

“Where the example varieties are only applicable, or available, for certain regions a separate set of example varieties is provided as far as possible”.

Guidance: [guidelines to be developed on when to establish different sets of example varieties and how to format the TG's to provide separate sets of example varieties 1-to be developed by Mr Guiard (FR)]

Guidance: For quantitative characteristics, example varieties should —as far as possible—be given, at least for a few states of expression (e.g. 3, 5, 7). The minimum requirement is that states 3, 5, 7 should be indicated in the Test Guidelines but if it is required to list example varieties for one or both extremes, then states 1, 3, 5, 7 or 3, 5, 7, 9 or 1, 3, 5, 7, 9 are to be indicated. Experts very seldom decide to include example varieties for even states as well but in this case the full range of states 1, 2, 3, 4, 5, 6, 7, 8, 9 should be listed.

6.5 Legend:

(+) TWA Comment: Even where there are example varieties illustrations (photographs, diagram etc..) should be provided

Standard wording where appropriate: (see TGP/8)

- (A) Observe characteristic on: spaced plants
- (B) row plots
- (C) special test

Standard wording where appropriate: (see TGP/8)

- (MG) physical measurement of a group of plants or parts of plants
- (MS) physical measurement of a number of individual plants or parts of plants
- (VG) visual assessment of a group of plants or parts of plants
- (VS) visual assessment of a number of individual plants or parts of plants

[Annex VI follows]

ANNEXVI

Comments on the Test Guidelines made at the TWA

Test Guidelines to be presented at the Technical Committee

TG/31/7(PROJ.)COCK SFOOT,

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 applicants 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 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. TableofCharacteristics/Tableaudes caractères/Merkmalstabelle/Tabladecaracteres

Ch.1, No explanation requires. 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. AVS Tendency to form
BVG inflorescences
(+) without
vernalization
period

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

4. B Leaf: green color
(after
VG vernalization
period)
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. AMS Plant: time of
(* BMG inflorescence
(+) emergence (after
vernalization
period)

Ch.6,Newwordingforstates(1)and(3)andtoaddVS:

~~Erect~~upright
(1)

~~Semi-erect~~semi -upright
(3)

Ch.7,becomesCh.10,toAddMS

~~7~~ A Flagleaf:length
10. (asf or7)
(* MS

Ch.8,becomesCh.11,toAddMS

~~8~~ A Flagleaf:width
11. (sameflagleafas
(* MS thatusedfor7)

Ch.9,becomesCh.7,toAddMS

~~97~~. A Stem:lengthof
(* longeststem
MS (inflorescence
included;when
fullyexpanded)

Ch.10,becomes Ch.8,stageofobservation(asfor7),toAddMS

~~10~~ A Stem:lengthof
8. upperinternode
MS (asfor7)
(+)

Ch.11,becomesCh.9,stageofobservation(asfor7),toAddMS

~~11~~ A Inflorescence:
9. length(asfor7)
MS

To deletetheexamplevarietiesLidactaandHorvatineverycharacteristicwherepresent.

VIII. ExplanationsontheTableofCharacteristics

Add.3and5tomodifyaccordingtothenewwordingofthecharacteristics

X. TechnicalQuestionnaire

Tomodifyaccordingtothechangesi ntheTableofcharacteristics.

TG/139/7(proj.)MEADOWFESCUE,TALLFESCUE

IV. MethodsandObservations

3.Whereobservationscanbemadealsoinbothspacedplantsorrowplots,

V. Grouping of Varieties

ToaddCh.5

VI. Characteristics and Symbols

1. Toassessdistinctness, **homogeneity**uniformityandstability,thecharacteristicsand theirstates.....

3. Legend:

toadd

MG: actualmeasurementofagroupofplantsorpartsofplants

MS: actualmeasurementofanumberofindividualplantsor partsofplants

VG: visualassessmentbyasingleobservationofagroupofplantsorpartsofplants

VS: visualassessmentbyobservationsofanumberofindividualplantsorpartsofplants

VII. TableofCharacteristics

Ch.,1toadd(+),MSandmove footnotetoChapterVIII

Ch.2,toaddVG/VS,and“periodof”after“vernalization”

2. AVS Plant:tendencyto
BVG form
(+) inflorescences
without
vernalization
period

Ch.3,toadd(+),MS,replace“vegetation”by“growingperiod”,andtoadd “period”after
“vernalization”

3. A Plant:lengthatthe
endofthegrowing
(+) MS periodbefore
vernalizationperiod
onlyforF.p.

Ch.4,Toadd(*),VS,toreadasfollows,

4. A Plant:growth
(*) habit(asfor3)
VS onlyforF.p.

Ch.5,Toadd (*),VG,toreadasfollows,

5. B Leaf:intensityof
(*) greencolorin
VG vegetativegrowth

Ch.6,toaddVGandtoreadasfollows

6. B Foliage:fineness
(asfor2) onlyfor
VG F.a.

Ch.7,toaddMGandtoreadasfollows

7. B Plant:natural
heightafter
MG vernalization
period(about4
weeksafter
beginningof
growth)

Ch.8,toaddMS/MGandtoreadasfollows

8. AMS Plant:timeof
(*) BMV inflorescence
(+) emergenceafter
vernalization
period

Ch.9,toaddVS

Ch.10,toaddMS

Ch.1 1,becomesCh13andtoaddMS

Ch.12,becomesCh14andtoaddMS

Ch.13,becomesCh.11andtoaddMS

Ch.14,becomeCh.12andtoaddMS

VIII. ExplanationsontheTableofCharacteristics

Ad.1tomovefromfootnote.

Ad.2:Plant: tendency to form inflorescenceswithoutvernalization

The number of plants showing at least three inflorescences should be recorded for each variety. To be assessed on one occasion, on the whole, ~~trial~~ when the varieties are judged to have reached ~~the~~ 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 the~~ ~~entire~~ ~~total~~ at least on 20 plants or part taken from each of 20 plants.

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

VII. TableofCharacteristics

NewCh. AfterCh.2(proposedbyBRtobecheckedinashorttimebyDE.FRandGR)

3. Plant:colorof
mainstem

(*)

Whitish

(1)l

Whitegreen

(2)

Green

(3)

Darkgreen

(4)

Ch.9,toadd(*)andtoreadasfollows:

9. Leafblade:ratio
length/width

(*) (withoutauricles)

verysmall

small

medium

large

verylarge

AfterCh.10addnewCh.(proposedbyBRtobecheckedinashorttimebyDE.FRandGR,
drawingstobeprovidedbyBR)

11. Leaf:shapeof
bottomleaves(the
twofirstharvestable
leaves)

(+)

Rounded 1

Elliptical 2

Conical 3

Reverseconical 4

Ch.13,todeletethebracketsandthecontentofstate1

Ch.14,Examplevariety“Klio”insteadof“klio”

Ch.19,todeletethestateofexpression“verybroad(9)”

AfterCh.20taddnewCh.(proposedbyBRtobecheckedinashorttimebyDE.FRandGR,drawingstobeprovidedbyBR)

21.	Leaf:midribsangleof insertionpositioning (acrossthemainvein)	
	Veryacute	1
	Moderatelyacute	2
	Rightangle	3

Ch.22,toreplacethe(*)by(+).

Ch.24,toadd(+)andarrowtothedrawingshowingtheswallowofthetube.

Ch.30,31and32,todelete“atfullfloweringtime”

Ch.31,toreadexamplevariety“Ptolemaida63”insteadof“Prolemaida63”

AfterCh.32toaddnewCh.(proposedbyBRtobecheckedinashorttimebyDE.FRandGR,drawingstobeprovidedbyBR,positionoftheobservationstilltobedetermined)

33.	Shapeoffruit	
	(+)	
	rounded	1
	elongated	2
	elliptical	3

VIII. ExplanationsontheTableofCharacteristics

Ad.6,todeletethefigures<45;45and>90

Ad.26,toaddnewdrawingsproposedbyBR(theactualonesprovidedathemeetinghavetobecheckedbyDE,FRandGR)

X. TechnicalQuestionnaire

4.1toread“in bredline”insteadof“Inbredline”

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

7.1 to add the following:

Classification of tobacco varieties	Note
Fluecured	1[]
Light aircured	2[]
Dark aircured	3[]
Suncured	4[]
Firecured	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 aging 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 RAPESEED (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 concern 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. Applicant 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 tests should be extended for a second growing period.

Paragraph 3, to refer 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 ~~leaves, on the upper part of stalks~~ ~~— five vegetative stage~~ ~~—~~ the TVD leaf (TVD = top visible dewlap) ~~fully extended~~

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

8. Internode: length on the bud side

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

9..... Internode:diameter
. * (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:

15. Internode:expression
(*) of zigzag alignment

absent or very weak

Weak

Moderate

Strong

After Ch.24, to add

25. Node:length of the
bud groove
(+)

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)”.

NewCh.After Ch.37

38.	Leafsheath:density ofligulehairs(group (+) 61)		
	Absentorvery sparse	1	
	Sparse	3	
	Medium	5	
	Dense	7	
	Verydense	9	

Ch.44,toaddMSandtoreadasfollows

44.	Leafblade:widthat (*) thelongitudinalmid MS point		
	narrow		
	medium		
	broad		

Ch.45and47,toaddMS

VIII. ExplanationsontheTableofCharacteristics

Ad.7:Stem ~~Leaf~~:culmheight(basetoTVDleaf)

Ad.12:Internode:colorwhereexposedtosun

Withwax,afterthreedaysofexposuretothesun withwax removed.

Ad.40,AUtoprovidebetterdrawings.

TG/185/2(proj.)TURNIPRAPE

Bottomfrontpage:...referencetonewdocument -insteadofTG/1/2.

Page2: Nocomments

I -SubjectoftheseGuidelines

“swollenroot”deleted. *...foragriculturaluse*

II.- Material Required

quantity of seeds should be 300 grams

III -Conduct of Tests

1. “two similar growing periods.” may be changed in conjunction with other guidelines.... “two independent growing cycles.”

3. Number of plants in test changed from 500 to 300.

IV. Methods and observations

To read:

1. Unless otherwise indicated, in the case of plant -by-plant assessment, all observations should be made on 60 plants or parts of 60 plants.

2. In the case of visual assessment....., observations should be made on *each plot as a rule*.

3. For the.... general introduction. Sentence in brackets can be deleted.

For the assessment..... of parental lines -a population standard of....
...95% should be applied in case of visually observed characters. For the
assessment of uniformity of hybrids -a population standard of 10%.....
should be applied in case of measured characters.

V. -Grouping of varieties

2. (c) deleted

VI. -Characteristics and symbols.

2. last sentence shall read “Winter varieties are indicated after the semicolon.”

3.- Legend.

To read:

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

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

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

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

C: special test

VII. Table of characteristics

- 1. and 2. To add C (special character)
- 3. and 4. To add MS
- 6. and 7. Stage to change to 23- 27
- 8. To read Leaf: type absent | present 9
and Stage to change to 23 -27
- 9. to add MS and Stage to change to 23 -27
- 10. to add VS and Stage; Change to 23 -27
- 11. and 12. Stage to change to 23 -27
- 13. to add MS and Stage to change to 23 -27
- 14. to add MS and Stage to change to 23 -27
- 15. Check example varieties! ; Rex
Kulta;
- 16. Deleted
- 17. + 18. To be merged into only one characteristic to read:
(*) MG 61 - 62 Time of flowering (50% of plants with at least one open flower)
- 19. No remarks
- 20. and 21. To read MS instead of VS
- 22. to add VG and example variety: Kova (instead of Palle)
- 23. to add MS
- 24. to add MS and example variety: Paller removed
- 25. to add MS
- 26. to add MS and example variety: Paller removed
- 27. to add MS
- 28. + 29. To merge into only one characteristic:
To read: VG 00 Seed: ratio of yellow seed
absent or very low (1)
low (3)
medium (5)
high (7)
very high (9)

VIII. Explanations on the table of characteristics.

Ad. 3+4: Cotyledon: Length (3) and width (4):
To take drawings from Fodder rape or Mustard.

Ad. 10+12: Leaf: depth of incisions (10) and dentation (12):
To produce drawings showing different stages.

To add explanation to characters on the silique (24 -27).

IX. Literature.

No remarks

VI – Characteristics and symbols

To replace M by:

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

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

To add species for example varieties:

Lal: *Lupinus albus* L.

Lan: *Lupinus angustifolius* L.

Llu: *Lupinus luteus* L.

VII – Table of characteristics

1 – to add VS

2 – deleted

3 – to read: Plant: growth habitat flower bud stage

4 – to read: Leaf: green color at flower stage

5 – to read: Stem: anthocyanin coloration at flower stage

6 – to add MG

7 – to add MG and to include states very low (1) and very high (9), provided there are example varieties

8 – to add MG and to read: Plant: h eight at green ripening stage

9 – to add MS

10 – to add MS

11 – to read: Flower: color of wings.

To refer back to the experts to clarify the colors.

12 – to refer back to the experts to clarify the colors.

14 – to add MS

15 – to be deleted

17 – to delete (*)

18(a) – state (2) to read: “total with eyebrow”

state (3) to read: “total and eyebrow”

18(b) – to delete characteristic

20 – to add MG

to read: Grain: 100 seed weight (harvested seed)

VIII – Explanations on the table of characteristics

Add.1 – fourth sentence to read: “ The Grain -Cut-Method after v. Sengbusch (1942),

Add.3 – to read: Plant growth habitat flower bud stage

Add.8 and Add.22 – to be inserted after Add.3 and to delete “milky ripeness”.

Add.11 and 12 – to read:

“Flower: color of wing and color of tip of carina. All observations on the flower should be made at the time of full flowering. Observations should be made on flowers at the stage of pollen release.”

Add.13 – new drawings provided by Germany

Add.19 – to change “intensity” to “density”

Add.21 – to read: Time of beginning of flowering:

“A plant is considered to begin to flower when 3 flowers in the inflorescence on the main shoot are open.”

If observations are made on individual plants, the mean has to be calculated for the plot.

If observations are made on a group of plants, the dates should be recorded when the flower buds are the main shoot when about 50% of the plants in the plot have begun to open.

Add.23 –replace “by” with “with the”
To assess the time of ripening, the date should be recorded when the grains in the pods of the main shoot can no longer be dented with the thumbnail.

X - Technical Questionnaire

5.- Characteristics

5.2 to read: Stem: anthocyanin coloration at flower stage

5.3 to read: Flower: color of wings .

5.5 to be deleted

To remove lines between 5.5 and 5.6

7- Additional information

7.2 to add Seasonal type

spring type

winter type

The possibility of drafting a key for growth stages to facilitate the moment of assessment will be studied.

It is proposed that the example varieties are supplied by Germany and compared with those from France, Poland, South Africa and probably Australia.

TWA/30/3

WORKING PAPER ON REVISED TEST GUIDELINES FOR POTATO

The expert from Germany would incorporate all the comments received and produce a new draft. A ring test in electrophoresis in potato will be set up.

TWA/30/4

WORKING PAPER ON REVISED TEST GUIDELINES FOR WHITE CLOVER

After detailed discussion of the document TWA/30/4, the subgroup on white clover: -

- (1) Agreed various editorial changes required throughout Chapters I to X to bring the draft more in line with the current UPOV model.
- (2) Agreed that, in Chapter II, 1 kg was appropriate as the amount of seed required.

- (3) Agreed that reference to calculated characteristics should be removed from Chapter VI, para. 3. It was sufficient to have details of the mathematics of calculated characteristics included in Chapter VIII.
- (4) Agreed to changes in Chapter VII to re-classify a number of characteristics to 'MS'.
- (5) Agreed to changes in Chapter VII to the text for several characteristics to include 'before vernalization' or 'during vegetative growth' to allow application equally to both Northern and Southern hemispheres.
- (6) Agreed that GB would review the usefulness of characteristic 1, 'Plant: tendency to form inflorescences without vernalization' and report back to the next meeting.
- (7) Agreed that, in Chapter VII, characteristic 3, 'Plant: proportion of plants with cyanid glucoside', must be retained, despite causing some difficulties for interpretation of uniformity. Some changes to the text for the characteristic agreed for clarification.
- (8) Agreed that DE and NZ would provide details of suggested changes to the method outlined for the determination of cyanid glucoside in Chapter VIII. DE – a possible safer cell extraction, NZ – a possible scale method.
- (9) Agreed that ZA should consider which characteristics were appropriate for use in row plots.
- (10) Agreed that a list of possible new characteristics provided by NZ should be considered further by correspondence.
- (11) Agreed that GB should produce a new draft working paper.
- (12) Agreed that the revised working paper should be circulated to those expressing interest: Denmark, Finland, France, Germany, New Zealand, South Africa, United Kingdom and Uruguay.

[Annex VII follows]

ANNEXVII

LISTOFLEADINGEXPERTS

Species	Basicdocument	Leadingexperts	Interestedexperts (countries) (fornameofexpertssee ListofParticipants, AnnexI)
Lotus	TG/193/1(proj.)	CarlosGómez -UY	DE,FR,NZ
Rice	TG/16/6(proj.)	LuisSlaices -ES	FR,IT,JP,UY,KR
Lupin	TG/66/3;TWA/30/2	JoanSadie -ZA	DE
Potato	TG/23/5;(TWA/30/3	BeateRücker -DE	AR,CA,GB,NL,SE, SP,UY,ZA
Whiteclover	TG/38/6;TWA/30/4	MichaelCamlin -UK	FR,UY,ZA
Lucerne	TG/06/4	JoëlGuiard -FR	AU,ES,ZA
Medics(Medicago sp.otherthansativa	First	JoanSadie -ZA	AU,ES,ZA
Coffee	firstdraft	AlvaroViana -BR	KE
Grainamaranth	Firstdraft	AquilesCarballoCarballo - MX	ZA

[EndofAnnex VIIandofdocument]