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PROGRESS REPORT OF THE WORK OF THE TECHNICAL COMMITTEE, THE
TECHNICAL WORKING PARTIES AND THE WORKING GROUP ON BIOCHEMICAL
AND MOLECULAR TECHNIQUES AND DNA-PROFILING IN PARTICULAR

Document prepared by the Office of the Union

1. This document presents a progress report on the work of the Technical Committee (hereinafter referred to as "the TC") and its Technical Working Parties (hereinafter referred to as "the TWPs"), including the Working Group on Biochemical and Molecular Techniques and DNA-Profiling in Particular (hereinafter referred to as "the BMT"). ee

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I. PROGRESS REPORT OF THE WORK OF THE TECHNICAL COMMITTEE

2. The TC held its thirty-eighth session in Geneva, from April 15 to 17, 2002, under the Chairmanship of Mr. Michael Camlin (United Kingdom). The Report on the Conclusions is contained in document TC/38/15 and the detailed Report appears in document TC/38/16 Prov.

Participation

3. The session was attended by 38 members of the Union, two observer States and six observer organizations.

Test Guidelines

4. The TC considered and adopted the following Test Guidelines on the basis of the amendments and the linguistic changes recommended by the Editorial Committee:

TG/8/6	Field Bean/Fève role/Ackerbohne/Haba, Haboncillo	
TG/31/8	Cocksfoot/Dactyle/Knaul gras/Dactilo	
TG/36/6 Corr.	Rape Seed/Colza/Raps/Colza (revision of paragraph 4 of Chapter IV)	IV)
TG/39/8	Meadow Fescue, Tall Fescue/Fétuque des prés, Fétuque élevée/ Wiesen-, Rohrschwengel/Festuc ad los prados, Festuca alta	
TG/41/5	European Plum/Prunier européen/Pflaume/Ciruelo europeo	
TG/65/4	Kohlrabi/Chou-rave/Kohlrabi/Colinabo	
TG/74/4	Celeriac/Céleri-rave/Knollensellerie/Apionabo	
TG/82/4	Celery/Céleri-branch/Bleich-, Stielsellerie/Apio	
TG/90/6	Vegetable Kale/Choufrisé/Grünkohl/Colrizada	
TG/117/4	Egg Plant/Aubergine/Aubergine, Eierfrucht/Berenjena	
TG/119/4	Vegetable Marrow, Squash/Courgette/Gartenkürbis, Zucchini/ Calabaza, Zapallo	
TG/185/3	Turnip Rape/Navette/Rübsen/Nabina	
TG/186/2	Sugarcane/Canne à sucre/Zuckerrohr/Cañade azúcar	
TG/187/1	Prunus Rootstock/Porte -greffes de Prunus/Prunus -Unterlagen/ Prunus Portainjerto	
TG/188/1	Celosia/Célosie/Celosia/Crestadegallo	
TG/189/1	Pentas/Pentas/Pentas/Pentas	
TG/190/1	Thyme/Thym/Thymian/Tomillo	
TG/194/1	Lavandula, Lavender/Lavandevraie, Lavandins/ Echter Lavendel, Lavendel/Lavándula, Lavanda	
TG/195/1	Tobacco/Tabac/Tabak/Tabaco	
TG/196/1	New Guinea Impatiens/Impatiens de Nouvelle -Guinée/ Neu-Guinea-Impatiens/Impatiens de Nueva Guinea	
TG/197/1	Eustoma/Eustoma/Eustoma/Eustoma	

5. The TC approved the Test Guidelines for Sugarcane (TG/186/2) subject to the changes being verified by the Enlarged Editorial Committee. It approved the Test Guidelines for Turnip Rape (TG/185/3) subject to the amendments being agreed by the crop experts. It decided that the two lists of example varieties for the Test Guidelines for Tobacco (TG/195/1) should be included in an annex.

6. The TC noted that the draft Test Guidelines for Lettuce (document TG/13/8 Lettuce/Laitue/Salat/Lechuga) required further development with respect to the Bremia resistance characteristics and in the light of comments made by professional organizations, containing proposals for substantial changes (additional disease characteristics, revision of reference varieties), recommended that these should be reconsidered by the TWV before adoption of the Test Guidelines.

General Introduction

7. The TC proposed that, at its nineteenth extraordinary session on April 19, 2002, the Council adopt document TC/38/5, Annex I, as TG/1/3 “General Introduction to the Examination of Distinctness, Uniformity and Stability and the Development of Harmonized Descriptions of New Varieties of Plants” (hereinafter referred to as the “General Introduction”), subject to the amendments agreed at the session.

Summary of Progress in the Drafting of TGP Documents

8. The TC agreed the content and structure of the TGP documents, as presented in Annex I of document TC/38/7, and agreed to the timetable for the development of the TGP documents, as summarized in Annex II of document TC/38/7. It also confirmed that highest priority should continue to be given to the development of document TGP/7 “Development of Test Guidelines” and after this to documents TGP/4 “Management of Variety Collections”, TGP/9 “Examining Distinctness” and TGP/10 “Examining Uniformity.”

Document TGP/7, “Development of Test Guidelines”

9. The TC considered that document TC/38/8, as amended at the session, should form the basis for section 2 of document TGP/7 (“TG Template”) and, accordingly, should be used as the basis for all future Test Guidelines.

Procedure for the Development of TGP and Other Important Documents for Consideration by the Technical Committee

10. The TC agreed with the proposal made by the Chairman of the TC in document TC/38/9, that the composition of the Editorial Committee, comprising the four language experts, should remain unchanged and that the Enlarged Editorial Committee (EEC) should continue to include the Chairman and Vice-Chairman of the TC, the Chairmen of the TWPs and the Chairman of the BMT. It agreed that, in addition, a small number of additional members could be included in the EEC, where and when necessary, to ensure that there is an appropriate range of expertise and experience. The need for additional members is to be identified by the TC, or by the EEC itself. If these needs are agreed by the TC, nominations for additional members from within the TC, each for a period of three years to coincide with the terms of the Chairmen of the TWPs, would be the responsibility of the TC.

Publication of Variety Descriptions

11. The TC considered document TC/38/10 and noted the particular technical aspects which would need to be developed for the model study on the publication of variety descriptions. It decided to invite the TWPs to make proposals for species according to section 6.1.1(a) of document TC/38/10, Annex, and, in accordance with section 6.1.1.(b), to identify which members of the Union and other interested parties would wish to contribute to a model study on these species. It would then consider the proposals and, at its thirty-ninth session in Spring 2003, select a short list on which to base any model study. The TC agreed to the proposal by the delegate of France that the TWPs should, for the species concerned, be invited to consider means of separating the varieties of common knowledge into agronomic groupings.

Biochemical and Molecular Techniques

12. The Vice Secretary-General reported on the meeting of the BMT Review Group which had taken place on the previous evening to discuss document TC/38/14-CAJ/45/5. He reported that the BMT Review Group had considered the proposals set out in document TC/38/14-CAJ/45/5 and concluded as follows:

Proposal 1 (Option 1(a) for a gene specific marker of a phenotypic characteristic) was, on the basis of the assumptions in the proposal, acceptable within the terms of the UPOV Convention and would not undermine the effectiveness of protection offered under the UPOV system.

Proposals 2, 3 and 4 (Option 2: Calibration of threshold levels for molecular characteristics against the minimum distance in traditional characteristics for Oilseed Rape, Maize and Rose, respectively), where used for the management of reference collections were, on the basis of the assumptions in the proposals, acceptable within the terms of the UPOV Convention and would not undermine the effectiveness of protection offered under the UPOV system.

Regarding Proposal 5 (Option 3 for Rose) and Proposal 6 (Option 3 for Wheat), it noted there was no consensus on the acceptability of these proposals within the terms of the UPOV Convention and no consensus on whether they would undermine the effectiveness of protection offered under the UPOV system. Concerns were raised that, in these proposals, using this approach, it might be possible to use an limitless number of markers to find differences between varieties. The concern was also raised that differences would be found at the genetic level which were not reflected in morphological characteristics.

The Vice Secretary-General also reported some general remarks. Firstly, concern had been raised regarding the accessibility of techniques covered by patents. Secondly, the group had emphasized the importance of considering if there were cost benefits arising from any new approaches. Thirdly, the importance of the relationship between phenotypic characteristics and molecular techniques had also been discussed. Finally, the importance of examining uniformity and stability on the same characteristics as used for distinctness had been emphasized.

13. The TC considered the report of the Vice Secretary -General and agreed with the conclusions that proposals 1, 2, 3 and 4 could be pursued on the basis of the assumptions, whilst recognizing the need for further work to examine these assumptions and, in the case of option 2, to improve the relationship between morphological and molecular distances. It also noted the divergence of views which had been expressed regarding proposals 5 and 6.

14. The following general schedule was then envisaged: The BMT Review Group to make recommendations to the TC and the Administrative and Legal Committee (hereinafter referred to as "the CAJ), on the models outlined above; the Office of the Union to produce a document, containing these recommendations and the considerations of the TC, for circulation to the TWPs; the TWPs to consider this document and to consider detailed reports of the work of Crop Subgroups; where possible, the Crop Subgroups to meet after the next meeting of the relevant TWP to enable the views of the relevant TWP to be presented at the meeting.

15. The BMT recommended that the Crop Subgroup meetings should, in general, be held in association with meetings of relevant TWPs. It proposed that meetings of the Oilseed Rape, Rose and Wheat Crop Subgroups should be held in 2002. However, it proposed no meetings for the Maize and Tomato Crop Subgroup, subject to consideration by the TWA and TWV respectively.

16. The BMT suggested the establishment of new Crop Subgroups for Potato, Mushroom, Soybean and Sugarcane. The TC agreed that interim Chairpersons of the new Crop Subgroups should be agreed between the Chairman of the TC and the Chairperson of the relevant TWP and that these positions should then be considered for approval by the TC at its meeting in Spring 2003. It agreed that a Crop Subgroup should not be established for peach or citrus at this time.

17. The TC reviewed the role of the BMT in response to recent developments in UPOV, regarding biochemical and molecular techniques and, in particular, the establishment of the BMT Review Group and Crop Subgroups. It based its discussions on the proposal from the BMT. On this basis, it agreed the future role of the BMT as follows:

ROLE OF THE BMT

The BMT is a group open to DUS experts, biochemical and molecular specialists and plant breeders, whose role is to :

- (i) Review general developments in biochemical and molecular techniques ;
- (ii) Maintain an awareness of relevant applications of biochemical and molecular techniques in plant breeding;
- (iii) Consider the possible application of biochemical and molecular techniques in DUS testing and report its considerations to the Technical Committee ;
- (iv) If appropriate, establish guidelines for biochemical and molecular methodologies and their harmonization and, in particular, contribute to the preparation of document TGP/15, "New Types of Characteristics ." These guidelines to be developed in conjunction with the Technical Working Parties;
- (v) Consider initiatives from TWPs, for the establishment of crop specific subgroups, taking into account available information and the need for biochemical and molecular methods;
- (vi) Develop guidelines regarding the management and harmonization of databases of biochemical and molecular information, in conjunction with the TWC;
- (vii) Receive reports from Crop Subgroups and the BMT Review Group;
- (viii) Provide a forum for discussion on the use of biochemical and molecular techniques in the consideration of essential derivation and variety identification.

Preparatory Workshops for the Technical Working Parties

18. The TC agreed, in accordance with the proposals in document TC/38/12, that the Office should seek to organize preparatory workshops for the TWP sessions to be held in 2002 and report the outcome to the TC at its thirty-ninth session in 2003. Invitations to the workshops would be included in the official invitations for the Technical Working Party meetings.

Arrangements for DUS Testing

19. The TC noted the report on arrangements for DUS testing as presented in document TC/38/13.

Chairmanship of the TWPs and BMT

20. The TC proposed to the Council that it elect, in its session in October 2002, the following as Chairpersons for the period 2003 -2005:

TWA:	Mr. Carlos Gómez -Etchebarne, Uruguay
TWC:	Mr. Uwe Meyer, Germany
TWF:	Mr. Erik Schulte, Germany
TWO:	Mr. Chris Barnaby, New Zealand
TWV:	Mr. Kees van Ettehoven, Netherlands
BMT:	Mr. Gerhard Deneken, Denmark

Award of UPOV Medals

21. The Vice Secretary -General awarded Mr. Joël Guiard with a silver UPOV medal, in recognition of his chairmanship of the Technical Committee (1996 -1998) and two bronze UPOV medals in recognition of his chairmanship of the Technical Working Party for Agriculture (1985 -1987) and the Working Group on Biochemical and Molecular Techniques and DNA -Profiling in Particular (1994 -1998). Mr. Joost Barendrecht received a bronze UPOV medal for his chairmanship of the Technical Working Party for Ornamental Plants and Forest Trees (1988 -1990 and 1997 -1999).

Other Items

22. In addition to the items reported above, the TC received an oral report from the Vice-Secretary General on relevant matters discussed in the last sessions of the Administrative and Legal Committee, the Consultative Committee and the Council; received progress reports on the work of the TWPs, including the BMT and the *Ad Hoc* Crop Subgroups on Molecular Techniques; discussed issues concerning protection of seed-propagated ornamental varieties; received advice from the CAJ regarding the status of information provided in the Technical Questionnaire, characteristics examined by patented methods and plant variety identification; discussed the review of UPOV information databases and services proposed by the Office; noted the report on arrangements for DUS testing as presented in document TC/38/13; and noted document TC/38/4 containing the list of species for which practical technical knowledge had been acquired.

Program for the Thirty -Ninth session

23. The TC proposed that the draft agenda for its thirty -ninth session to be held in Geneva in 2003 include the following items: Report on relevant matters discussed in the last CAJ sessions, the Consultative Committee and the Council; Nominations for membership of the Enlarged Editorial Committee; Progress reports on the work of the TWPs, including the BMT and Crop Subgroups; Matters arising from the Technical Working Parties; TGP documents to be considered by the TC; Publication of variety descriptions; UPOV information databases; Preparatory workshops; Test Guidelines; List of species in which practical knowledge has been acquired or for which national test guidelines have been established; Program for the fortieth session and; Adoption of the Report on the Conclusions reached in the session (if time permits).

II. PROGRESS REPORT OF THE WORK OF THE TECHNICAL WORKING PARTIES AND THE WORKING GROUP ON BIOCHEMICAL AND MOLECULAR TECHNIQUES AND DNA -PROFILING IN PARTICULAR

Technical Working Party for Agriculture

24. The Technical Working Party for Agriculture (hereinafter referred to as "the TWA") held its thirtieth session in Texcoco, Mexico, from September 3 to 7, 2001, under the Chairmanship of Mrs. Françoise Blouet (France). The Report on the Conclusions is contained in document TWA/30/19 and the detailed Report appears in document TWA/30/20.

Participation

25. The session was attended by 21 members of the Union, two observer States and two observer organizations.

Draft Test Guidelines to be Presented to the Technical Committee

26. The TWA decided that draft Test Guidelines on the following crops should be sent to the professional organizations and then submitted to the TC for approval in April 2002: Cocksfoot; Field Bean; Sugarcane; Turnip Rape; Meadow Fescue, Tall Fescue; Tobacco; Rape Seed (Revision).

Ad Hoc Crop Subgroup on Molecular Techniques

27. The TWA considered it would be useful to introduce a subgroup for a vegetatively propagated agricultural crop and suggested either sugarcane or potatoes might be appropriate.

General Introduction

28. The TWA considered the draft General Introduction as presented in document TC/37/9(a), together with the comments made by the Technical Working Party for Automation and Computer Programs (TWC) and the Technical Working Party for Vegetables (TWPV), and proposed revisions to the text to be considered by the TC.

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

Development of TGP Documents

30. The TWA considered the proposals, in document TWA/30/7, for the drafting of TGP documents and made specific proposals for the contributions to be made by the TWA.

TGP/7 "Development of Test Guidelines"

31. The TWA made proposals for improving document TWA/30/6 as the basis for TGP/7 "Development of Test Guidelines."

Management of Reference Collections

32. The TWA considered the following aspects concerning the management of reference collections:

- (a) Relationship between varieties of common knowledge and (reference) variety collections

33. 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 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.

(b) Plant variety description and environmental effects

34. It was considered that, in particular, the paper on barley (document TWA/30 /16) 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. A 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.

35. The 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.

36. It was proposed that further studies should be undertaken on other crops and that, furthermore, recommendations should be made to the TC that such a study should always be undertaken as a part of the process of revising Test Guidelines.

37. Germany agreed to undertake a study on winter oilseed rape (building on a related study presented in TWA/30/12), Australia agreed to do the same for spring wheat and the United Kingdom will further develop its study on winter wheat.

(c) Software using phenotypic distance for distinctness

38. The “GAÏA” system of pre-screening varieties in the examination of distinctness, as developed by France, was presented in document TWA/30/15. The meeting was advised that France will make this software available for UPOV members.

39. 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.

40. It was agreed that the process should be explained and developed as a draft for document TGP/9.3 “Consideration of All Varieties of Common Knowledge in the Examination of Distinctness.”

Example Varieties

41. The TWA decided to set up a project for exchanging seed of selected varieties between interested countries, with descriptions to be produced by each or most participants in their countries. These descriptions would then be sent to a coordinator for a report to be produced. Projects were proposed for spring oats (Coordinator: Sweden), lupins (Coordinator: South Africa) and white clover (Coordinator: New Zealand). A project for rice may be established if a coordinator can be identified.

Process for Establishing Distinctness

42. The TWA discussed the process for establishing distinctness and planned to develop example procedures for an “official” testing system and a “breeder” testing system. It also agreed to draft a paper for the use of the hybrid formula.

Draft Test Guidelines to be Discussed at the TWA in 2002

43. The TWA decided that the following draft Test Guidelines require further revision and discussion at the TWA in 2002: Rice; Lotus; Potato; White Clover; Lupins. First drafts of Test Guidelines of the following crops will be produced for discussion at the TWA in 2002: Coffee; Grain Amaranth; Medicago (excl. sativa); Lucerne (Revision).

Nomination of Chairman

44. The TWA proposed to the TC that it nominate to the Council Mr. Carlos Gómez - Etchebarne (Uruguay) as the next Chairman of the TWA.

Program for the Next Session

45. At its thirty-first session, the TWA planned to discuss: Short reports on special developments in plant variety protection in agricultural crops; Important decisions taken during the last sessions of the TC and the TWPs; Report on the *Adhoc* Crop Subgroups on Molecular Techniques; TGP documents; Plant variety description and environmental effects; Project for exchanging seed of selected varieties between interested countries; Final discussions on draft Test Guidelines for Rice, Lotus and White Clover; Discussion on working papers on Test Guidelines for Potato, Lupins, Coffee, Grain Amaranth, Medicago (excl. sativa), Lucerne (Revision); Report of the Conclusions of the session and future program; Date and place of next session.

Date and Place of Next Session

46. At the invitation of Brazil, the TWA proposed that the thirty-first session of the TWA be held in Brazil in 2002. Offers to host subsequent sessions of the TWA were received as follows: Japan (2003); New Zealand (2004); South Africa (2005).

Technical Working Party on Automation and Computer Programs

47. The Technical Working Party on Automation and Computer Programs (hereinafter referred to as the “TWC”) held its nineteenth session in Prague, from June 4 to 7, 2001, under the Chairmanship of Mr. Wieslaw Pilarczyk (Poland). The Report on the Conclusions is contained in document TWC/19/12 and the detailed Report appears in document TWC/19/13.

Participation

48. This session was attended by 15 members of the Union and two observer States.

General Introduction

49. The TWC considered the draft General Introduction as presented in document TC/37/9(a) and proposed revisions to the text to be considered by the TC.

Development of TGP Documents

50. The TWC considered the drafting of TGP documents and decided to focus on the preparation of documents TGP/8 "Use of Statistical Procedures in DUS Testing," TGP/9 "Examining Distinctness" and TGP/10 "Examining Uniformity."

Bulked Samples

51. The TWC discussed methods for testing uniformity on characteristics where samples have been bulked and noted that some loss of information in this situation would be expected. It agreed that a new document should be drafted as a section within TGP/8 "Use of Statistical Practices and Procedures in DUS Testing."

Optimizing Trial Size and Trial Design

52. Proposals for optimizing the size of the trial were considered. Discussions were based on a document on the determination of the optimum trial size and a presentation on the Qalstat program. The TWC concluded that methods for calculating the optimum size of trial would increase efficiency, possibly leading to a reduction in the number of years involved. In relation to experimental design, it discussed the efficiency of incomplete block design in DUS trials and spatial dependency and block design. The TWC concluded that spatial dependency can improve the efficiency of the trial if there is sufficient spatial dependence in enough characteristics, but it might cause some additional complications in the interpretation of the data.

Other Items

53. The TWC noted: A report on uniformity standards of COYU for grasses and agreed that a paper with information on the probability levels used among member States would be prepared for the next year; two reports on the use of image analysis and the result of a questionnaire on the use of image analysis in plant variety testing; the improvements that had been made to the DUST system, as requested by the TWC, and that the latest version, known as DUSTNT, was now freely available.

Nomination of Chairman

54. The TWC agreed to propose to the TC that it nominate to the Council Mr. Uwe Meyer (Germany) as the next Chairman of the TWC.

Program for the Next Session

55. At its twentieth session, the TWC planned to discuss: Report on subjects of special interest to the TWC raised during the thirty-seventh session of the TC; Questions raised by other TWPs; Report on new developments in member States; TGP documents; UPOV ROM Plant Variety Database; Report on developments in the subgroups on molecular techniques; Developments in the World Wide Web; List of statistical documents prepared by

the TWC; List of statistical documents containing recommendations or methods of possible interest to the TWPs.

Date and Place of Next Session

56. At the invitation of Mexico, the TWC proposed that its twentieth session be held in Texcoco, Mexico, from June 17 to 20, 2002 and proposed that a Workshop on Data Handling should be held in conjunction with this session.

Technical Working Party for Fruit Crops

57. The Technical Working Party for Fruit Crops (hereinafter referred to as the “TW F”) held its thirty -second session in Valencia, Spain, from October 1 to 5, 2001 under the Chairmanship of Mr. József Harsányi (Hungary). The Report on the Conclusions is contained in document TWF/32/19 Rev. and the detailed report appears in document TWF /32/20.

Participation

58. The session was attended by 18 members of the Union, one observer State and one observer organization.

Developments in Plant Variety Protection

59. In the majority of members of the Union represented at the meeting, the number of applications in fruit species was stable. Some experts reported an increase in the number of new species and inter -specific crop applications.

Draft Test Guidelines to be Presented to the Technical Committee

60. The TWF decided that draft Test Guidelines on the following crops should be sent to the professional organizations and then submitted to the TC for approval in April 2002: European Plum (Revision); *Prunus* Rootstocks.

Draft Test Guidelines to be Presented to the Professional Organizations

61. The TWF decided that draft Test Guidelines on the following crops should be sent to the professional organizations: Grapefruit and Pummelos (Revision); Lemons and Limes (Revision); Mandarins (Revision); Oranges (Revision).

Ad Hoc Crop Subgroup on Molecular Techniques

62. The TWF reaffirmed its support for the establishment of an *ad hoc* crop subgroup for peach. The TWF also wished to consider the possibility of establishing a subgroup for citrus and suggested this might be combined with the peach subgroup under a single Chairman. It decided to nominate Mr. Erik Schulte (Germany) as Chairman of the peach, or combined peach and citrus, subgroup if this was established.

General Introduction

63. The TWF reviewed document TC/37/9(a), on the basis of the proposed amendments in documents TWF/32/8 Add. and TWO/34/20, Annex I, and proposed further amendments to the TC.

Development of TGP Documents

64. The TWF reviewed document TWF/32/10 and proposed modifications to the document to reflect the contribution the TWF plan to make in the development of the TGP documents.

TGP/7 “Development of Test Guidelines”

65. The TWF reviewed the draft standard wording for all Test Guidelines, as presented in document TC/37/10, Annex I, and proposed certain amendments to that text to the TC.

66. It discussed the need for the inclusion of grouping characteristics and concluded that these were not necessary for Distinctness, Uniformity and Stability (DUS) examiners in an “official” testing system because the characteristics used for grouping would be those provided by the applicant in the Technical Questionnaire (TQ). However, it was noted that they might be of interest for DUS examiners in a breeder -based testing system, where the UPOV type TQ was not used. It concluded that, having clarified the matter, further clarification of the criteria for selecting grouping characteristics was required and proposed draft wording.

67. The TWF considered that example varieties were not necessary for qualitative characteristics and did not need to be provided, if illustrations were included. It was not certain that example varieties were necessary for pseudo -qualitative characteristics and would reconsider this at its next session.

68. The TWF started to review the guidance notes and standardized optional wording contained in document TWF/32/9 Rev. It had insufficient time to review the document completely and decided to discuss certain issues which it considered were most in need of clarification. These were: The presentation of quantitative characteristics; the description of apex/tip characteristics; the clarification of the time of maturity.

Cooperation with the Tropical Fruit Network (TFNet)

69. The TWF noted that Japan would update the Office on its latest correspondence with TFNet. The Office, in conjunction with the TWF Chairman, would then consider how to take the matter forward. It would also advise TFNet that they were welcome to contact any UPOV member of the Office to arrange the drafting of Test Guidelines for crops of interest.

Draft Test Guidelines to be Discussed at the TWF in 2002

70. The TWF decided that the following draft Test Guidelines required further revision and discussion at the TWF in 2002: Apricot (Revision); Cherimola; Trifoliata Oranges; Fig; Prickly Pear (*Opuntia*); Persimmon (Revision); Quince (Revision); Raspberry (Revision); Avocado (Revision).

71. First drafts of Test Guidelines of the following crops will be produced for discussion at the TWF in 2002: Apple (Revision); Passion Fruit; Mango (Revision); Pineapple.

Nomination of Chairman

72. The TWF agreed to propose to the TC that it nominate to the Council Mr. Erik Schulte (Germany) as the next Chairman of the TWF.

Program for the Next Session

73. At its thirty-third session the TWF planned to discuss: Short reports on new developments in plant variety protection in fruit crops; Report on other TWPs and the TC; TGP documents; Discussions on draft Test Guidelines; Future program, date and place of the next session.

Date and Place of Next Session

74. At the invitation of Argentina, the TWF proposed that its thirty-third session be held in Argentina, from November 25 to 29, 2002.

Technical Working Party for Ornamental Plants and Forest Trees

75. The Technical Working Party for Ornamental Plants and Forest Trees (hereinafter referred to as the "TWO") held its thirty-fourth session in Nagano, Japan, from September 24 to 28, 2001, under the Chairmanship of Ms. Elizabeth Scott (United Kingdom). The Report on the Conclusions is contained in document TWO/34/20 Rev. and the detailed Report appears in document TWO/34/21.

Participation

76. The session was attended by 11 members of the Union, one observer State and two observer organizations.

Developments in Plant Variety Protection

77. Most of members of the Union present reported that the number of new species, as well as the number of applications, had increased and that ornamental varieties were an increasingly important group for their Offices. An increased number of applications for medicinal and aromatic plants was also indicated.

Draft Test Guidelines to be Presented to the Technical Committee

78. The TWO decided to send draft Test Guidelines on the following crops to the professional organizations, and then submit these to the TC for approval in April 2002: *Celosia* (previously sent to professional organizations); *Lavandula*, Lavender; Ornamental Apple (Revision); Pentas (previously sent to professional organizations); Thyme; *Eustoma*; New Guinea Impatiens (Revision).

AdHoc CropSubgrouponMolecularTechniques

79. As part of a study on molecular techniques, members of the TWO agreed to provide the Netherlands with information on any pairs of rose varieties which had been found to be not distinct in a DUS examination. Any such pairs of varieties will be examined to see if they are distinguishable using molecular characteristics.

General Introduction

80. The TWO reviewed document TC/37/9(a), on the basis of the proposed amendments in document TWO/34/7 Rev., and made proposals to the TC for the amendment of the text.

TGP Documents

81. The TWO reviewed document TWO/34/9 and proposed that the document be modified to reflect the contribution of the TWO plan to make in the development of the TGP documents.

TGP/7 "Development of Test Guidelines"

82. The TWO reviewed the draft standard wording for all Test Guidelines, as presented in document TC/37/10, Annex I, and made proposals to the TC for the amendment of the text.

83. In considering the criteria for Test Guidelines characteristics to be included in the Technical Questionnaire (TQ), the TWO concluded that such characteristics should comprise:

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

unless it was considered unrealistic to expect breeders to be able to understand or examine these characteristics.

Testing of Seed - Propagated Ornamentals

84. There was agreement that the Office should prepare a questionnaire to identify Testing Authorities with experience in DUS testing of seed propagated ornamentals. This would seek information on species which had been tested, the arrangements for testing (official testing, breeder testing or a combination), the number of growing cycles and years required for the tests and the uniformity criteria. The results would be circulated to all members of the TWO, with the aim of improving international harmonization in DUS testing and providing information on sources of expertise.

85. The representative of the *Fédération Internationale du Commerce des Semences* (FIS) noted that, under the 1991 Act of the UPOV Convention, breeders of varieties who develop "improved" forms of their protected varieties would have protection for these improved varieties, if these were considered to be essentially derived varieties.

86. The representative of the *Fédération Internationale du Commerce des Semences* (FIS) expressed the view that the protection of selected parent lines, used in different hybrid varieties, might be the most cost-effective method of achieving protection for a series of hybrid varieties.

RHSColourChart

87. The TWO undertook to update the UPOV color card document, following the introduction of the 2001 version of the RHSColourChart.

Draft Test Guidelines to be Discussed at the TWO in 2002

88. The TWO concluded that the following draft Test Guidelines required further revision and discussion at the TWO in 2002: Brachycome; *Bracteantha*; Clematis; *Dendrobium*; Impatiens; *Leptospermum*; Petunia; *Phalaenopsis*; Tagetes; Waxflower; Willow (Revision); Dahlia.

89. First drafts of Test Guidelines of the following crops will be produced for discussion at the TWO in 2002: Rose (cut flower only); *Poinsettia* (Revision); Verbena; Hypericum (berry-producing species); *Catharanthus roseus*.

Nomination of Chairman

90. The TWO agreed to propose to the TC that it nominate to the Council Mr. Chris Barnaby (New Zealand) as the next Chairman of the TWO.

Program for the Next Session

91. At its thirty-third session the TWO planned to discuss: Short reports on special developments in plant variety protection in ornamental plants and forest trees; Report on the TC and other TWPs; Testing of seed-raised ornamentals; TGP documents; Discussions on draft Test Guidelines; Future program, date and place of the next session; Adoption of the Report of the Conclusions of this session.

Date and Place of Next Session

92. At the invitation of Ecuador, the TWP proposed to hold its thirty-fifth session in Ecuador, from November 18 to 22, 2002.

Technical Working Party for Vegetables

93. The Technical Working Party for Vegetables (hereinafter referred to as the "TWV") held its thirty-fifth session in Battipaglia (Salerno), Italy, from June 25 to 29, 2001, under the Chairmanship of Ms. Julia Borys (Poland). The Report appears in document TWV/35/18.

Participation

94. The session was attended by 13 members of the Union, two observer States and four observer organizations.

Draft Test Guidelines to be Presented to the Technical Committee

95. The TWV agreed that the draft Test Guidelines for Celeriac (Revision), Celery (Revision), Chinese Cabbage (Revision), Egg Plant (Revision), Kohlrabi (Revision), Lettuce (Revision), Vegetable Marrow, Squash (Revision) and Vegetable Kale (Revision) should be

sent to the professional organizations for comments and, subject to no major comments from the professional organizations, also be submitted to the TC for final adoption.

Draft Test Guidelines to be Considered by Other Bodies

96. The TWV agreed to seek the advice of the Chairman of the TWO on whether the draft Test Guidelines for Thyme, as amended, should be considered by the TWO.

97. The TWV noted that the draft Test Guidelines document for Chinese Cabbage, as amended, would be submitted to the UPOV Regional Technical Meeting for Asian Plant Variety Protection Systems to be held in Beijing from July 24 to 26, 2001, to collect comments from experts in the Asian countries¹.

Ad Hoc Crop Subgroup on Molecular Techniques

98. Mr. Richard Brand (France), Chairman of the Subgroup for Tomato, explained that the purpose of the work of the Subgroup for Tomato was to explore the possible development of a system to use molecular techniques for DUS testing for tomato. Mr. Brand regretted that the lack of time hampered in-depth discussion on this subject during the meeting of the Subgroup. The representative of the International Association of Plant Breeders for the Protection of Plant Varieties (ASSINSEL) expressed his hope that this study would be continued and wondered whether further international cooperation should be pursued to achieve a harmonized approach for the use of molecular techniques, e.g. microsatellite markers. The TWV recommended that the Tomato subgroup's work should be continued and extended to cover vegetable species, other than tomato, where work was being undertaken. Members of the TWV agreed to notify the Office of UPOV where work was planned and, in addition, to submit papers to the next session of the BMT.

General Introduction

99. The TWV reviewed document TC/37/9(a) and made proposals to the TC for amendment of the text.

TGP Documents

100. The TWV reviewed document TWV/35/14 and proposed that the document be modified to reflect the contribution the TWV plan to make in the development of the TGP documents.

TGP/7 "Development of Test Guidelines"

101. The TWV examined the draft Test Guidelines template as presented in the Annex to document TWV/35/15, and the notes intended to be used by drafters of UPOV and national Test Guidelines. The TWV proposed amendments to both the template and the drafters' notes.

¹ The draft Test Guidelines document for Chinese Cabbage received a considerable number of comments from participants in the UPOV Regional Technical Meeting for the Asian Plant Variety Protection Systems held in Beijing, China. The Chairman agreed to rediscuss Test Guidelines for Chinese Cabbage at the thirty-sixth session of the TWV on the basis of the comments received.

Standardization of Disease Resistance Tests

102. The expert from the Netherlands introduced document TWV/35/2, noting that the DUS examination of disease characteristics caused certain difficulties, due to the lack of standardized methods. It was also explained that intermediate levels of disease resistance were observed, and this should be reflected in the UPOV Test Guidelines. The representative of ASSINSEL supported this view. The TWV noted, however, that the recognition of intermediate levels in disease characteristics might bring an additional burden for the applicant to fulfill the uniformity requirements in such characteristics.

103. The expert from the Netherlands reported an attempt in his country to establish a standardized protocol between the seed industry and the Netherlands Inspection Service for Horticulture. He concluded that the key factor for a successful protocol would be the source and quality of inocula used for disease testing. The maintenance and distribution of standard varieties and standard inocula would be critical and would best be ensured by a specialized agency.

104. The TWV agreed to propose to the TC that the issue of disease resistance should be dealt with in document TGP/12, Special Characteristics, with a view to the standardization of disease resistance tests and the inclusion of intermediate states of disease resistance in the Test Guidelines, where appropriate. A first draft will be prepared for the TWV, by the expert from the Netherlands, for the next session, and this will be presented to other TWPs during the course of 2002.

Draft Test Guidelines to be Discussed at the TWV in 2002

105. The TWV agreed to discuss draft Test Guidelines for Basil, Broad Bean (Revision), Chinese Chive, Chive, Endive, Husk Tomato, Lentil, Melon, Mushroom, Perilla, Rosemary and Runner Bean (Revision) during its next session.

Nomination of Chairman

106. The TWV agreed to propose to the TC that it nominate to the Council Mr. Kees van Ettekoven (Netherlands) as the next Chairman of the TWV.

Program for the Next Session

107. At its thirty-sixth session the TWV planned to discuss: Short report on special problems or difficulties encountered in vegetables; Disease resistance characteristics; Report on the last session of the TC; Report on the last session of the BMT; TGP documents; Draft Test Guidelines.

Date and Place of Next Session

108. At the invitation of Japan, the TWV proposed to hold its thirty-sixth session at Tsukuba, Japan, from September 9 to 13, 2002.

Working Group on Biochemical and Molecular Techniques and DNA Profiling in Particular

109. The Working Group on Biochemical and Molecular Techniques and DNA Profiling in Particular (hereinafter referred to as “the BMT”) held its seventh session in Hanover, Germany, from November 21 to 23, 2001, under the Chairmanship of Mr. Michael Camlin (United Kingdom). The Report on the Conclusions is contained in document BMT/7/18 and the detailed Report appears in document BMT/7/19 Prov.

Participation

110. The session was attended by 17 members of the Union, one observer State, three observer organizations and nine experts.

New Developments in Biochemical and Molecular Techniques

111. The BMT noted that Single Nucleotide Polymorphisms (SNP's) were being investigated by some molecular experts. However, it was generally recognized that microsatellite markers were now the most widely used technique in the characterization of plant varieties and this was likely to remain the situation for the foreseeable future.

Stability of Molecular Markers

112. Some experts considered that, at least in some crops such as some fruit trees, there could be some degree of instability as measured by molecular markers. Other experts considered that this was not the case and that the data suggesting such instability were probably due to methodological problems. It was concluded that this should be investigated further to clarify the situation.

Ad Hoc Crop Subgroup on Molecular Techniques

113. The BMT considered that it was important for the Ad hoc subgroup, of TC and the CAJ members (hereinafter referred as the “Review Subgroup”), to consider models for the use of biochemical and molecular techniques in DUS testing and make recommendations on the acceptability of these models, before the Ad hoc Crop Subgroups (hereinafter referred as “Crop Subgroups”) take their work further.

114. The BMT proposed that recommendations be sought on the basis of selected proposals developed in the Crop Subgroups, as reported in document BMT/7/3, Annex III. In particular, it suggested that the models should be proposed for:

Option 1: “Molecular Characteristics as Predictors of Traditional Characteristics”

(a) Gene specific markers: the BMT Review Group would be asked to consider the acceptability of gene specific markers for predicting individual phenotypic characteristics. The characteristic of herbicide tolerance, introduced by genetic modification, is to be given as the example. The recommendation would need to be on the basis that there was reliable linkage between the marker and the expression of the characteristic. In considering this proposal, the BMT Review Group would be requested to make a recommendation on the acceptability of differences arising from different markers developed for the same expression of a characteristic.

(b) The use of a set of molecular characteristics to estimate a traditional characteristic: a model based on this approach would not be proposed at this time but it was emphasized that work on this approach was ongoing .

Option 2: "Calibration of Molecular Characteristics against Traditional Characteristics"

A model would be presented on the basis of information from oilseed rape, maize and rose. This option would be proposed on the basis of a genetic distance assessment, rather than a characteristic-by-characteristic approach, and would be presented for use in the management of reference collections.

Option 3: "Development of a New System"

This option would be presented on the basis of the model proposed in the Rose Crop Subgroup and a model that will be developed on the basis of the information available from wheat. This option will be based on the use of molecular characteristics in the same way as existing non-molecular characteristics.

115. It was clarified that the three options developed by the Crop Subgroups related to the options for distinctness, including management of reference collections, and that it was equally important for the Review Subgroup to consider the uniformity and stability issues outlined in document BMT/7/3, Annex III.

116. The Review Subgroup would be asked to consider these models on the basis of certain assumptions, which would need to be made, regarding information which is not yet available for the crops used in the illustrations.

117. The BMT emphasized that the use of biochemical and molecular techniques in any of these proposals should not be interpreted as the complete replacement of non-molecular characteristics and that these methods should be considered in conjunction with non-molecular characteristics, for example, in the management of reference collections.

118. The following general schedule was then envisaged: The Review Subgroup to make recommendations to the TC and the CAJ, on the model outlined above; The Office of the Union to produce a document, containing these recommendations and the considerations of the TC, for circulation to the TWPs; The TWPs to consider this document and to consider detailed reports of the work of Crop Subgroups; Where possible, the Crop Subgroups to meet after the next meeting of the relevant TWP to enable the views of the relevant TWP to be presented at the meeting .

119. The BMT recommended that the Crop Subgroup meetings should, in general, be held in association with meetings of relevant TWPs. It proposed that meetings of the Oilseed Rape, Rose and Wheat Crop Subgroups should be held in 2002. However, it proposed no meetings for the Maize and Tomato Crop Subgroup, subject to consideration by the TWA and TWV, respectively.

120. The BMT suggested the establishment of new Crop Subgroups for Potato, Mushroom, Soybean and Sugarcane.

121. The proposed Chairman of a Peach/Citrus Crop Subgroup (Mr. Schulte, Germany), concluded that, on the basis of presentations at the session, there was insufficient basis for the creation of such a Crop Subgroup at this time.

Future Role of the BMT

122. In response to developments in UPOV, regarding biochemical and molecular techniques, and in particular the establishment of the Review Subgroup and Crop Subgroups, the BMT clarified its understanding of the role it should perform and submitted a proposal to the TC.

Development of Guidelines on the Suitability and Application of Different Biochemical and Molecular Methods

123. It was agreed that draft guidelines on the suitability and application of different biochemical and molecular methods for variety characterization should be prepared for discussion at the eighth session of the BMT.

Development of Guidelines on Statistical Methods for Data Produced by Biochemical and Molecular Methods

124. It was agreed that papers on statistical methods for data produced by biochemical and molecular techniques should be developed. The topics addressed should include, in particular, band scoring, calculation of distances between varieties, uniformity assessment and the development of databases of variety information. Members of the TWCC could contribute to the development of these papers.

Program for the Next Session

125. At its eighth session the BMT planned to discuss: Short presentations by DUS experts, biochemical and molecular specialists and plant breeders on new developments in biochemical and molecular techniques; Reports from the Review Group, TC and Crop Subgroups; Report of work on molecular techniques on a crop-by-crop basis, including methods to assess the potential impact on the strength of variety protection; Development of guidelines on the suitability and application of different biochemical and molecular methods for variety characterization; Review of the costs of molecular techniques; Construction and standardization of databases of molecular characteristics of plant varieties; Statistical methods for data produced by biochemical and molecular techniques; The use of molecular techniques in examining essential derivation; Future program, date and place of the next session; Report on the conclusions of the session.

Date and Place of Next Session

126. At the invitation of Japan, the BMT proposed to hold its eighth session in Tsukuba, Japan, in 2003.

127. The Council is invited

(a) to note the work of the TC and that of the TWPs and BMT reported to the TC, as provided in this document,

(b) to approve the work program of the TC and the work programs of the TWPs and BMT reported to the TC, as provided in this document.

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