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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 of the work of the Technical Committee (TC) and its Technical Working Parties (TWPs), including the Working Group on Biochemical and Molecular Techniques, and DNA-Profiling in Particular (BMT).

2. The following abbreviations are used in this document:

CAJ:	Administrative and Legal Committee
TC:	Technical Committee
TC-EDC:	Enlarged Editorial Committee
TWPs:	Technical Working Parties
TWA:	Technical Working Party for Agricultural Crops
TWC:	Technical Working Party on Automation and Computer Programs
TWF:	Technical Working Party for Fruit Crops
TWO:	Technical Working Party for Ornamental Plants and Forest Trees
TWV:	Technical Working Party for Vegetables
BMT:	Working Group on Biochemical and Molecular Techniques, and DNA-Profiling in Particular

BMT Review Group:	<i>Ad hoc</i> Subgroup of Technical and Legal Experts of Biochemical and Molecular Techniques
WG-PVD:	<i>Ad hoc</i> Working Group on the Publication of Variety Descriptions
Crop Subgroups:	<i>Ad hoc</i> Crop Subgroups for Molecular Techniques
DUS:	Distinctness, Uniformity and Stability
Office:	Office of the Union

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I. PROGRESS REPORT OF THE WORK OF THE TECHNICAL COMMITTEE

3. The Technical Committee (TC) held its forty-fifth session in Geneva from March 30 to April 1, 2009, chaired by Mr. Chris Barnaby (New Zealand), Chairperson of the TC. The report on the conclusions of that session is contained in document TC/45/15. The detailed report will be provided as document TC/45/16.

Participation

4. The meeting was attended by 86 participants from 41 members of the Union, one observer State and two observer organizations.

Report on developments in UPOV including relevant matters discussed in the last sessions of the Administrative and Legal Committee, the Consultative Committee and the Council

5. The Vice Secretary-General provided an oral report on the fifty-seventh and fifty-eighth sessions of the Administrative and Legal Committee (CAJ), the seventy-fifth and the seventy-sixth sessions of the Consultative Committee and the twenty-fifth extraordinary session and the forty-second ordinary session of the Council.

Progress reports on the work of the Technical Working Parties, including the Working Group on Biochemical and Molecular Techniques, and DNA-Profiling in Particular (BMT), and the Ad hoc Crop Subgroups on Molecular Techniques

6. The TC received oral reports from the Chairpersons, on the work of the Technical Working Party for Agricultural Crops (TWA), the Technical Working Party on Automation and Computer Programs (TWC), the Technical Working Party for Fruit Crops (TWF), the Technical Working Party for Ornamental Plants and Forest Trees (TWO), the Technical Working Party for Vegetables (TWV) and the Working Group on Biochemical and Molecular Techniques, and DNA-Profiling in Particular (BMT). Part II of this document "Progress Report of the Work of the Technical Working Parties and the Working Group on Biochemical and Molecular Techniques, and DNA-Profiling in Particular" provides the information presented in the oral reports made by the Chairpersons of the TWA, TWC, TWF, TWO, TWV and the BMT.

Matters arising from the Technical Working Parties

7. The TC considered document TC/45/3.

Matters arising after the grant of a breeder's right

8. The TC agreed to propose to the CAJ that, within its approach for the preparation of information materials concerning the UPOV Convention, a document be developed to provide guidance on matters concerning distinctness, uniformity, stability and novelty that are brought to the attention of an authority after the grant of a breeder's right.

Development of common databases for the management of variety collections

9. The TC noted that the matter of variety description databases would be considered under agenda item 10 “Publication of variety descriptions”.

Applications for varieties with low germination

10. The TC noted that applications for varieties with low germination would be considered in conjunction with the revision of document TGP/7 “Development of Test Guidelines”, in particular with respect to document TGP/7/2 Draft 2, ASW 1 (TG Template: Chapter 2.3 – Seed quality requirements) [(c) Types of varieties with low germination].

Method of calculation of COYU

11. The TC noted the discussions concerning the current method of calculation of COYU, as set out in document TC/45/3, and agreed that the Technical Working Parties (TWPs) should be informed about those discussions at their sessions in 2009. The TC requested the TWC to make its recommendations to the TC concerning the proposals set out in document TC/45/3, paragraph 24.

Assessing uniformity by off-types on the basis of more than one sample or sub-samples

12. The TC considered the draft questionnaire “Population standards used for assessing uniformity by off-types on the basis of more than one sample”, developed by the Technical Working Party on Automation and Computer Programs (TWC), as presented in the Annex to document TC/45/3.

13. The TC agreed that the draft questionnaire should be circulated for consideration by the Technical Working Parties at their sessions in 2009 and requested the Office of the Union to provide a new draft of the questionnaire, based on their comments, for approval at the forty-sixth session of the TC. The TC agreed that the approved questionnaire should be issued by the Office of the Union to the TC representatives of the members of the Union and the replies presented for consideration by the TC at its forty-seventh session. On the basis of the replies, the TC would consider whether that matter should be included in a future revision of document TGP/8 “Trial Design and Techniques Used in the Examination of Distinctness, Uniformity and Stability”.

Database to research TWC working documents

14. The TC noted the developments concerning the “Database to research TWC working documents”, provided by the experts from Germany, and distributed to the participants at the twenty-sixth session of the TWC.

15. The TC noted the value of being able to search the TWC documents in a database and considered that it would be useful to be able to search all documents on the UPOV website in a similar way. The Office of the Union explained that it planned to provide a facility to search the documents on the UPOV website.

TGP documents

16. The TC considered documents TC/45/5 and TC/45/14.

(a) *TGP documents scheduled for adoption in 2009*

TGP/12 Special Characteristics

17. The TC considered document TGP/12/1 Draft 7 and agreed certain amendments. The TC noted that those amendments would be reported to the CAJ for consideration at its fifty-ninth session, to be held in Geneva on April 2, 2009. The TC agreed that, subject to agreement by the CAJ, document TGP/12/1 Draft 7, as amended above, should be put forward for adoption by the Council at its forty-third ordinary session, to be held in Geneva on October 22, 2009. It noted that the French, German and Spanish translations of the original English text would be checked by the relevant members of the Editorial Committee prior to submission of the draft of document TGP/12/1 to the Council.

18. The TC agreed to refer to the Consultative Committee consideration of the status of documents TC/38/14-CAJ/45/5 and TC/38/14 Add.-CAJ/45/5 Add., which were the subject of a cross-reference in a previous version of the document (see also “Molecular Techniques” / Revision of documents TC/38/14-CAJ/45/5 and TC/38/14 Add.-CAJ/45/5 Add.).

19. The TC agreed to invite the TWV to propose whether to include a section on the nomenclature of disease resistance in document TGP/14 “Glossary of Technical, Botanical and Statistical Terms Used in UPOV Documents” or in a future revision of document TGP/12.

TGP/13 Guidance for New Types and Species

20. The TC considered document TGP/13/1 Draft 14 and agreed certain amendments. The TC noted that those amendments would be reported to the CAJ for consideration at its fifty-ninth session, to be held in Geneva on April 2, 2009. The TC agreed that, subject to agreement by the CAJ, document TGP/13/1 Draft 14, as amended above, should be put forward for adoption by the Council at its forty-third ordinary session, to be held in Geneva on October 22, 2009. It noted that the French, German and Spanish translations of the original English text would be checked by the relevant members of the Editorial Committee prior to submission of the draft of document TGP/13/1 to the Council.

21. The TC noted that the TWF and TWO, at their sessions in 2009, would invite reports from experts on their particular experiences with new types and species.

(b) *New TGP documents under development*

TGP/8 Trial Design and Techniques Used in the Examination of Distinctness, Uniformity and Stability

22. The TC considered document TGP/8/1 Draft 12 and agreed certain amendments. The TC agreed that document TGP/8/1 should be scheduled for adoption in 2010 on the basis of the content included in document TGP/8/1 Draft 12. The TC further agreed that, at the same time, separately from consideration of the draft of document TGP/8/1, the sections omitted from document TGP/8/1 Draft 12, as reproduced in document TC/45/14, Annex I, should

continue to be developed without delay and should be incorporated into document TGP/8 by means of a revision of document TGP/8/1 (i.e. document TGP/8/2) at the earliest opportunity.

TGP/11 Examination of Stability

23. The TC considered document TGP/11/1 Draft 5 and agreed on certain aspects that should be addressed in the subsequent draft. The TC noted that the forty-third session of the TWV, to be held in Beijing from April 20 to 24, 2009, was less than three weeks after the forty-fifth session of the TC. On that basis, it noted that it would not be feasible to prepare a new draft of document TGP/11/1 for consideration by the TWPs in 2009. Therefore, it agreed that, at their sessions in 2009, the TWPs should be invited to consider the comments made on document TGP/11/1 Draft 5 by the CAJ and the TC. On the basis of those comments and any further comments by the TWPs, a new draft of document TGP/11/1 (document TGP/11/1 Draft 6) would be prepared for consideration by the TC-EDC at its meeting in January 2010.

TGP/14 Glossary of Technical, Botanical and Statistical Terms Used in UPOV Documents

24. The TC considered document TGP/14/1 Draft 8 and agreed certain amendments. The TC agreed that document TGP/14/1 should be scheduled for adoption in 2010 on the basis of the content included in document TGP/14/1 Draft 8. At the same time, the TC agreed that, separately from consideration of the draft of document TGP/14/1, the Color Subsection should continue to be developed without delay and should be incorporated into document TGP/14 by means of a revision of document TGP/14/1 (i.e. document TGP/14/2) at the earliest opportunity.

(c) Revision of TGP Documents

TGP/0 List of TGP Documents and Latest Issue Dates

25. The TC agreed to propose that document TGP/0 be revised (to become document TGP/0/2) in conjunction with the scheduled adoption of documents TGP/12 and TGP/13 by the Council at its forty-third ordinary session, to be held in Geneva on October 22, 2009.

TGP/7 Development of Test Guidelines

26. The TC considered document TGP/7/2 Draft 2 and agreed certain amendments.

27. The TC identified a number of aspects concerning the “Collection of Approved Characteristics” which it agreed should be addressed in parallel with the revision of document TGP/7. The TC noted that the Office of the Union planned to develop an improved TG Template and to integrate the Collection of Approved Characteristics into that template in a user-friendly package for drafters of Test Guidelines.

(d) Program for the Development of TGP Documents

28. The TC agreed the program for the development of TGP documents, as set out in the Annex to document TC/45/5.

UPOV information databases

29. The TC considered documents TC/45/6 and TC/45/6 Add.

GENIE database

30. The TC noted that an external consultant IT expert would be used to assist WIPO's IT Department to finalize the GENIE database project.

UPOV Code System

31. The TC noted that just over 300 new UPOV codes were created in 2008 and amendments were made to approximately 30 UPOV codes, bringing the total number of UPOV codes in the GENIE database at the end of 2008 to 6,346.

32. In accordance with the procedure set out in Section 3.3 of the Guide to the UPOV Code System (see http://www.upov.int/genie/en/upov_code.html), the TC agreed that the Office of the Union should prepare tables of UPOV code additions and amendments, for checking by the relevant authorities, for each of the Technical Working Party (TWP) sessions in 2009.

Plant Variety Database

33. The TC noted that the Consultative Committee had approved an arrangement between UPOV and WIPO (UPOV-WIPO arrangement), concerning the UPOV Plant Variety Database.

34. The TC noted the latest situation with regard to contributors to the UPOV-ROM, as set out in document TC/45/6 Add.

35. The TC noted the proposals concerning the program for improvements to the UPOV-ROM Plant Variety Database as set out in document TC/45/6, paragraph 26. It proposed that further consideration should be given to whether to add any new fields to the Plant Variety Database and, at the same time, consideration should be given to whether any of the existing fields should be removed.

36. With regard to the development of a web-based version of the Plant Variety Database, the TC noted that the members of the Union would be invited to determine the accessibility and any charge for access in due course.

Molecular techniques

37. The TC considered documents TC/45/7 and BMT Guidelines (proj.14).

UPOV Guidelines for DNA-profiling: molecular marker selection and database construction (BMT Guidelines)

38. The TC agreed that no changes were required to document BMT Guidelines (proj.14). However, it noted that the French, German and Spanish translations of the original English text would be checked by the relevant members of the Editorial Committee prior to submission of the document for adoption by the Council.

39. The TC noted that the draft BMT Guidelines (document BMT Guidelines (proj.15)) would be presented for consideration by the CAJ at its sixtieth session, to be held in Geneva on October 19 and 20, 2009. The TC agreed that, on the basis of the conclusions of the TC and CAJ at their sessions in 2009, a draft of the BMT Guidelines should be prepared for approval by the TC and CAJ in March 2010, in anticipation of adoption of the BMT Guidelines by the Council in 2010. The TC noted that the timetable also anticipates the submission of a revised version of documents TC/38/14-CAJ/45/5 and TC/38/14 Add.-CAJ/45/5 Add. to the Council for adoption in conjunction with the BMT Guidelines (see below).

Proposals for the utilization of biochemical and molecular techniques in the examination of DUS to be considered by the BMT Review Group

40. As requested by the TC at its forty-fourth session and the CAJ at its fifty-seventh session, the TC noted that the approach presented in documents BMT/10/14 and BMT-TWA/Maize/2/11 “Possible use of molecular techniques in DUS testing on maize: how to integrate a new tool to serve the effectiveness of protection offered under the UPOV system”, prepared by experts from France, would be put forward for consideration by the *Ad hoc* Subgroup of Technical and Legal Experts of Biochemical and Molecular Techniques (BMT Review Group) at its meeting on April 1, 2009.

41. The TC noted that the assessment of the BMT Review Group would be presented for consideration by the CAJ at its sixtieth session, to be held in Geneva on October 19 and 20, 2009, and by the TC at its forty-sixth session, in 2010. The TC also noted that, in the meantime, an oral report of the BMT Review Group meeting would be made at the fifty-ninth session of the CAJ, to be held in Geneva on April 2, 2009 and the report of the BMT Review Group would be posted on the first-restricted area of the UPOV website. The TC agreed that a report on the conclusions of the BMT Review Group should be made to the Technical Working Parties at their sessions in 2009.

Revision of documents TC/38/14-CAJ/45/5 and TC/38/14 Add.-CAJ/45/5 Add.

42. The TC recalled that, at its forty-second session, held in Geneva, from April 3 to 5, 2006, it had “reaffirmed its support for the presentation of the situation, set out in documents TC/38/14-CAJ/45/5 ‘*Ad hoc* Subgroup of Technical and Legal Experts on Biochemical and Molecular Techniques’ and TC/38/14 Add.-CAJ/45/5 Add. ‘Addendum to *Ad hoc* Subgroup of Technical and Legal Experts on Biochemical and Molecular Techniques’, which presented the proposals developed in the *Ad hoc* Crop Subgroups, the recommendations of the BMT Review Group concerning those proposals and the opinion of the TC and the CAJ regarding the recommendations of the BMT Review Group. [...]”. Therefore, it did not consider that it would be appropriate to make major changes to the structure and form of the information provided in documents TC/38/14-CAJ/45/5 and TC/38/14 Add.-CAJ/45/5 Add. However, to assist the Office of the Union in the preparation of the revision of documents TC/38/14-CAJ/45/5 and TC/38/14 Add.-CAJ/45/5 Add., with the aim of developing a document for adoption by the Council, the TC agreed:

- (a) to consolidate document TC/38/14-CAJ/45/5, paragraphs 9 and 10 and the Annex, and document TC/38/14 Add.-CAJ/45/5 Add., paragraphs 3 to 7, into a single document;

(b) subject to a positive assessment by the BMT Review Group of the approach presented in documents BMT/10/14 and BMT-TWA/Maize/2/11 and endorsement by the TC and CAJ, to add a section concerning the approach presented in documents BMT/10/14 and BMT-TWA/Maize/2/11; and

(c) to emphasize the importance of the assumptions to be met in each of the options and proposals and to clarify that it is a matter for the relevant authority to consider if the relevant assumptions set out in documents TC/38/14-CAJ/45/5 and TC/38/14 Add.-CAJ/45/5 Add. are met.

43. Subject to a positive assessment by the BMT Review Group of the approach presented in documents BMT/10/14 and BMT-TWA/Maize/2/11 and an endorsement by the CAJ at its sixtieth session, the TC agreed that a first draft of the revised version of documents TC/38/14-CAJ/45/5 and TC/38/14 Add.-CAJ/45/5 Add. should be prepared for consideration by the TC at its forty-sixth session and by the CAJ at its sixty-first session, both in March 2010. On that basis, the TC noted that a document could be presented for adoption by the Council in 2010, in conjunction with the BMT Guidelines (see above).

Practical exercise in the development of an exchangeable database

44. The TC noted that the possible commonality between the matters considered under the item “Practical exercise in the development of an exchangeable database” and the matters reported under agenda item 5 “Matters arising from the Technical Working Parties” and agenda item 10 “Publication of variety descriptions” would be considered under agenda item 10 “Publication of variety descriptions”.

International guidelines on molecular methodologies

45. The TC noted the developments concerning international guidelines on molecular methodologies, as set out in document TC/45/7, paragraphs 39 to 41.

Statistical methods for data produced by biochemical and molecular techniques

46. The TC agreed to request the TWC to consider if the item on the BMT agenda for “statistical methods for data produced by biochemical and molecular techniques” should be replaced by an item “methods for analysis of molecular data” to cover, for example, calculation of distances.

Ad hoc Crop Subgroups on molecular techniques (Crop Subgroups)

47. The TC noted the developments concerning Crop Subgroups as set out in document TC/45/7, paragraphs 46 to 50 and agreed the following plans for meetings of Crop Subgroups:

Crop Subgroup for Maize: to hold a meeting in November/December 2009, tentatively in conjunction with the maize and sorghum breeders’ meeting in the United States of America;

Crop Subgroup for Potato: to consider a future meeting according to developments in on-going projects reported at the eleventh session of the BMT;

Crop Subgroup for Soybean: Mr. Marcelo Labarta (Argentina), Chairman of the Crop Subgroup for Soybean, to consider the need for a meeting with experts from Brazil. The TC noted that Mr. Labarta had already held preliminary discussions on organizing such a meeting; and

Crop Subgroup for Wheat and Barley: subject to sufficient papers, to consider a meeting in conjunction with the twelfth session of the BMT.

48. The TC invited the TWA to propose a new Chairperson of the Crop Subgroup for Oilseed Rape.

Working group on biochemical and molecular techniques, and DNA-profiling in particular (BMT)

49. The TC noted the report on developments in the BMT, as set out in document TC/45/7, paragraphs 52 to 54.

Variety denominations

50. The TC considered documents TC/45/8 and TC/45/8 Add.

Revision of Class 211

51. The TC proposed that Class 211 in document UPOV/INF/12/1, Part II “Classes encompassing more than one genus” should be modified to cover all species of *Agaricus*, *Agrocybe*, *Auricularia*, *Dictyophora*, *Flammulina*, *Ganoderma*, *Grifola*, *Hericium*, *Hypsizigus*, *Lentinula*, *Lepista*, *Lyophyllum*, *Meripilus*, *Mycoleptodonoides*, *Naematoloma*, *Panellus*, *Pholiota*, *Pleurotus*, *Polyporus*, *Sparassis* and *Tricholoma*. The TC further agreed that the name of Class 211 should be changed to “Class 211 (Mushrooms)”.

52. The TC noted that its proposal concerning Class 211 would be reported to the CAJ, for consideration at its sixtieth session, to be held in Geneva on October 19 and 20, 2009. The TC noted that, if the CAJ was in accordance with the proposal of the TC, a draft revised version of the “Explanatory Notes on Variety Denominations under the UPOV Convention”, document UPOV/INF/12/1, would be presented to the Council for adoption at its forty-third ordinary session, to be held in Geneva on October 22, 2009.

Revision of Class 202

53. The TC agreed to the deletion of the entries in the GENIE database for *Setaria flavida* (Retz.) Veldkamp / *Paspalidium flavidum* (Retz.) A. Camus and for *Setaria viridis* (L.) P. Beauv. / *Setaria italica* subsp. *viridis* (L.) Thell.

54. The TC agreed to propose that Class 202 in document UPOV/INF/12/1, Part II “Classes encompassing more than one genus”, be extended to cover *Megathyrus*, *Panicum*, *Setaria* and *Steinchisma*.

55. The TC requested the Technical Working Party for Agricultural Crops (TWA) to consider that proposal at the thirty-eighth session of the TWA, to be held in Seoul, Republic of Korea, from August 31 to September 4, 2009. It agreed that, subject to endorsement of the TC proposal by the TWA, the CAJ would be invited to consider that proposal at its sixtieth session, to be held in Geneva on October 19 and 20, 2009, in conjunction with the proposed revision of document UPOV/INF/12/1 “Explanatory notes on variety denominations under the UPOV Convention”.

Publication of variety descriptions

56. The TC considered document TC/45/9.

57. The TC noted from the developments reported in document TC/45/9, that members of the Union were developing databases containing morphological and/or molecular data and, where considered appropriate, were collaborating in the development of databases for the management of variety collections, particularly on a regional basis. The TC agreed that it could be beneficial to offer the possibility for members of the Union to report on that work in a coherent way to the Technical Committee, the Technical Working Parties and the BMT. On that basis, the TC agreed to replace the agenda item “Publication of variety descriptions” with an item for “Variety description databases” on the agendas of the forthcoming sessions of the TC, TWPs and the BMT. In that respect, it recalled the importance of the list of criteria for consideration for the use of descriptions obtained from different locations and sources as set out in document TC/45/9, paragraph 3. The TC also agreed that the information presented would not need to be related to the publication of descriptions.

Preparatory workshops

58. The TC noted the report of the preparatory workshops held in 2008 and agreed the proposals for the programs for the preparatory workshops to be held in 2009, as set out in document TC/45/10. In response to the Delegation of the Republic of Korea, the Office of the Union explained that there was flexibility in the program for the preparatory workshops in order to respond to the interests of the participants, including in particular the local participants.

59. With respect to the event to coincide with the thirty-eighth session of the TWA, to be held in Seoul, Republic of Korea, from August 31 to September 4, 2009, the Delegation of the Republic of Korea clarified that it was planned to hold an international symposium on the “Impact of the PVP System”, to which speakers and participants from members of the Union would be invited.

Combination of lines or varieties

60. The TC noted the information presented on combinations of lines or varieties at the thirty-seventh session of the TWA, held in Nelspruit, South Africa, from July 14 to 18, 2008, and the discussions that took place, as set out in document TC/45/11.

List of exchangeable software

61. The TC considered documents TC/45/12 and UPOV/INF/Software Draft 1.
62. The TC agreed that document UPOV/INF/Software Draft 1 provided a suitable initial structure for a list of exchangeable software, but agreed that the categories of software might need to be modified according to the software that was included.
63. The TC agreed that document UPOV/INF/Software Draft 1 should be prepared for consideration by the Technical Working Parties, including the TWC, at their sessions in 2009 and by the CAJ at its sixtieth session, to be held in Geneva on October 19 and 20, 2009.
64. The TC agreed that the TWC, at its twenty-seventh session, to be held in Alexandria, Virginia, United States of America, from June 16 to 19, 2009, should review the entry for DUSTNT in document UPOV/INF/Software. In particular, the TC noted that the DUSTNT program included many modules, including a wide range of multivariate analysis techniques, while UPOV had specifically endorsed only the COYD and COYU methods. The TC noted that the TWC had invited experts to propose other DUSTNT modules, which had been used by them, for endorsement in the document on exchangeable software.

Electronic application systems

65. The TC considered document TC/45/13.
66. The Delegation of New Zealand commented that Proposal 1 “Standardized reference by authorities to the UPOV Model Application Form, UPOV Model TQ and/or UPOV Test Guidelines TQ” would be a reasonable option for implementation in New Zealand. The Delegation of the European Community and the representative of the International Seed Federation (ISF) expressed a preference for Proposal 2 “Use of information provided in an electronic version of the UPOV Model Application Form (and possibly the UPOV Model TQ or UPOV Test Guidelines TQ)”. The Delegation of the United States of America expressed concerns about the limited interest of members to make use of the form and the resource implications. It also sought further information with respect to the proposals before it could express a view.
67. The TC noted that the matter would be considered further by the CAJ at its fifty-ninth session, to be held in Geneva on April 2, 2009.

List of genera and species for which authorities have practical experience in the examination of distinctness, uniformity and stability

68. The TC noted the information provided in document TC/45/4 and heard that the number of genera and species for which members of the Union had practical experience had increased from 2,179 in 2008 to 2,209 in 2009.
69. The TC agreed that document TC/45/4 should be updated for the forty-sixth session of the TC. However, it agreed that the updated document should not include the entries in parentheses.

Test Guidelines

70. The TC considered document TC/45/2.

71. The TC adopted the Test Guidelines listed in the table below on the basis of the amendments, as specified in Annex II to document TC/45/15, which was circulated in advance, and the linguistic changes recommended by the TC-EDC:

Document No. N° du document Dokument-Nr. No del documento	English	Français	Deutsch	Español	Botanical name Nom botanique Botanischer Name Nombre botánico
NEW TEST GUIDELINES					
TG/COWPEA(proj.4)	Asparagus-bean, Pea-bean, Yard-long-bean, Chinese long-bean	Dolique asperge, Haricot asperge	Spargelbohne	Caupí, Judía espárrago, Judía de vaca	Vigna unguiculata (L.) Walp. subsp. sesquipedalis (L.) Verdc.
TG/HEVEA(proj.6)	Rubber	Hevea	Parakautschukbaum	Árbol del caucho, Hule	Hevea Aubl.
TG/NERIUM(proj.5)	Oleander, Rose Bay, Rose-laurel	Laurier rose, Oléandre	Oleander	Adelfa, Baladre, Laurel Rosa, Pascua	Nerium oleander L. (Nerium indicum Mill.)
TG/PASSI(proj.6)	Granadilla, Passion fruit	Barbadine, Fruit de la passion	Passionsfrucht, Purpurgranadilla	Granadilla, Maracuyá	Passiflora edulis Sims
TG/PHLOX(proj.3)	fall phlox, fall pink, garden phlox, panicked phlox, perennial phlox, perennial pink, summer phlox, sweet William	-	-	-	Phlox paniculata L.
TG/PRUNU_PAD(proj.4)	Bird cherry	Merisier à grappes	Traubenkirsche	Cerezo de racimo	Prunus padus L.
TG/TARO(proj.4)	Colocasia	Colocasia	Colocasia	Colocasia	Colocasia esculenta (L.) Schott; Colocasia gigantea (Blume) Hook. f.
TG/YAM(proj.4)	Yam	Igname	Yamswurzel	Ñame	Dioscorea alata L.; Dioscorea polystachya Turcz.; Dioscorea japonica Thunb.
REVISIONS OF TEST GUIDELINES					
TG/2/7(proj.4)	Maize	Maïs	Mais	Chícharo, Maíz	Zea mays L.
TG/7/10(proj.6)	Pea	Pois	Erbse	Guisante, Arveja	Pisum sativum L.
TG/28/9(proj.4)	Zonal Pelargonium, Horseshoed pelargonium; Ivy-leaved Pelargonium, Hanging geranium, Ivy geranium, Ivy-leaf pelargonium	Géranium, Pelargonium zonale; Géranium-lierre	Zonal-Pelargonie; Efeupelargonie, Efeublättrige Pelargonie	Geranio zonal, geranio malvón, geranio de hierro, geranio de sardina, pelargonio	Pelargonium Zonale Group (Pelargonium ×hortorum L. H. Bailey, Pelargonium-Zonale- Hybridae), Pelargonium peltatum (L.) Hér (Pelargonium-Peltatum- Hybridae) and hybrids between those species and other species of Pelargonium L'Hér. ex Ait.
TG/45/7(proj.5)	Cauliflower	Chou-fleur	Blumenkohl	Coliflor	Brassica oleracea L. convar. botrytis (L.) Alef. var. botrytis (Brassica cauliflora Lizg.)
PARTIAL REVISIONS OF TEST GUIDELINES					
TG/89/6 Rev. (proj_TC/45/2)	Swede	Chou-navet, Rutabaga	Kohlrübe	Colinabo	Brassica napus L. var. napobrassica (L.) Rchb.
TG/155/4 Rev. (proj_TC/45/2)	Pumpkin	Giraumon, Potiron	Riesenkürbis	Calabaza, Zapallo	Cucurbita maxima Duch.
TG/209/1 Rev. (proj_TC/45/2)	Dendrobium	Dendrobium	Dendrobium, Baumwucherer	Dendrobium	Dendrobium Sw.
TG/220/1 Rev. (proj_TC/45/2)	Verbena, Vervain	Verveine	Verbene, Eisenkraut	Verbena	Verbena L.

72. With regard to the draft Test Guidelines for Pea (document TG/7/10(proj.6)), the TC noted that comments had been received from Ukraine in response to the circular concerning the proposed amendments to characteristics 39 (Pod: parchment) and 40 (Excluding varieties with pod parchment: entire: Pod: thickened wall). The TC agreed that the Test Guidelines for Pea be adopted subject to resolution of the comments by Ukraine, either by correspondence with Ukraine, or by the TWV and the TWA at their sessions in 2009.

73. With regard to the draft Test Guidelines for Phlox (TG/PHLOX(proj.3), on the basis of the recommendation of the Enlarged Editorial Committee at its meeting in March 2009, the TC agreed that the Test Guidelines for Phlox be adopted subject to further asterisked characteristics being agreed by the Technical Working Party for Ornamental Plants and Forest Trees (TWO), either by correspondence or at its forty-second session.

74. With regard to the draft Test Guidelines for Anubias (document TG/ANUBI(proj.5)) and for Mokara (document TG/MOKARA(proj.5)), on the basis of the recommendation of the Enlarged Editorial Committee at its meeting on January 8, 2009, the TC agreed that the technical issues concerning those draft Test Guidelines, as set out in Annex II to this document, should be referred back to the TWO, for further consideration.

75. With regard to the draft Test Guidelines for Fig (document TG/FIG(proj.4)), on the basis of the recommendation of the Enlarged Editorial Committee at its meeting in March 2009, the TC agreed that the technical issues concerning those draft Test Guidelines, as set out in Annex II to this document, should be referred back to the Technical Working Party for Fruit Crops (TWF) for further consideration.

76. The TC agreed to invite any proposed amendments to the common names for the adopted Test Guidelines to be sent to the Office of the Union. Those proposed amendments would be considered by the Editorial Committee.

77. The TC noted the corrections that had been made to documents TG/26/5 "Test Guidelines for Chrysanthemum", TG/86/5 "Test Guidelines for Anthurium", TG/94/6 "Test Guidelines for Ling, Scots Heather", TG/176/4 "Test Guidelines for Osteospermum", TG/225/1 "Test Guidelines for Waxflower", TG/238/1 "Test Guidelines for Tea" and TG/241/1 "Test Guidelines for Nemesia", as set out in document TC/45/2, paragraphs 14 to 27.

78. The TC agreed the plans for the development of new Test Guidelines and the revision or partial of Test Guidelines, as shown in document TC/45/2, Annex II, subject to the deletion of the entry for the partial revision of the Test Guidelines for Ling, Scots Heather (document TG/94/6).

79. The TC noted the status of the existing Test Guidelines as listed in document TC/45/2, Annex III.

Program for the forty-sixth session

80. The following draft agenda was agreed for the forty-sixth session of the TC, to be held in Geneva in 2010:

1. Opening of the session
2. Adoption of the agenda
3. Report on developments in UPOV including relevant matters discussed in the last sessions of the Administrative and Legal Committee, the Consultative Committee and the Council (oral report by the Vice Secretary-General)
4. Progress reports on the work of the Technical Working Parties, including the Working Group on Biochemical and Molecular Techniques, and DNA-Profiling in Particular (BMT) and Crop Subgroups
5. Matters arising from the Technical Working Parties
6. TGP documents
7. Molecular techniques
8. Variety denominations
9. UPOV information databases
10. Variety description databases
11. Exchangeable software
12. Electronic application systems
13. Preparatory workshops
14. Method of calculation of COYU
15. Assessing uniformity by off-types on the basis of more than one sample or sub-samples
16. Test Guidelines
17. List of genera and species for which authorities have practical experience in the examination of Distinctness, Uniformity and Stability
18. Program for the forty-seventh session
19. Adoption of the report on the conclusions reached in the session (if time permits)
20. Closing of the session

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

81. The following reports were made by the Chairpersons on the work of the TWA, TWC, TWF, TWO, TWV and the BMT at the forty-fifth session of the TC.

Technical Working Party for Agricultural Crops (TWA)

82. The TWA held its thirty-seventh session in Nelspruit, South Africa, from July 14 to July 18, 2008, under the chairmanship of Mrs. Beate Rücker (Germany). The report of the meeting is contained in document TWA/37/14.

83. The TWA session was attended by 57 participants from 23 members of the Union, two observer States, and two observer organizations. The preparatory workshop, held during the afternoon of Sunday, July 13, was attended by 21 participants.

84. The TWA was welcomed by Mr. Julian Jaftha, Director, Genetic Resources Department of Agriculture. The TWA received short reports on developments in plant variety protection by the participants.

85. The TWA noted the report on developments in UPOV of molecular techniques. The TWA also received a presentation of Mr. Joël Guiard (France) on a possible approach for the use of molecular techniques in DUS testing of maize, based on document BMT-TWA/Maize/2/11. The approach suggested a combination of genetic distances with morphological characteristics for the management of reference collections. The TWA agreed that the proposed approach should be put forward for consideration by the *Ad hoc* Subgroup of Technical and Legal experts of Biochemical and Molecular Techniques (BMT Review Group).

86. The TWA considered a number of draft TGP documents according to the program agreed by the TC, as follows:

(a) in relation to TGP/8 “Trial Design and Techniques Used in the Examination of Distinctness, Uniformity and Stability”, Part II, covering techniques used in DUS examination, the TWA agreed that it should be explained in TGP/8 that it was a choice for authorities whether to use the parent formula approach for hybrids and not an obligation and to explain that the Test Guidelines would include a reference to this method where considered useful. The TWA also agreed that guidance on relative tolerance limits for variances should be included in TGP/8;

(b) for TGP/11 “Examining Stability”, the TWA agreed that the document should not consider matters other than stability;

(c) with regard to TGP/12 “Special Characteristics”, the TWA suggested to rename the document as “Characteristics based on a response to an external factor and characteristics for chemical constituents: protein electrophoresis”. It also suggested to remove Section III of the document dealing with image analysis and to include it in document TGP/8, since it concerned a method of examining characteristics;

(d) the TWA considered document TGP/13 “Guidance for New Types and Species” and agreed to seek the view of the TC and the CAJ concerning the explanation and the implication that a single plant selected from a population could be developed into a variety and protected without further crossing;

(e) with respect to document TGP/14 “Glossary of Technical, Botanical and Statistical Terms Used in UPOV Documents”, the TWA formulated a range of comments; and

(f) in the framework of the revision of TGP/7 “Development of Test Guidelines”, the TWA made proposals concerning: the new Section 1.2 of that document on Individual Authorities’ Test guidelines; Section 2, in respect of the procedure for the introduction and revision of UPOV Test Guidelines; and on the TG Template and the related Additional Standard Wording (ASW) and Guidance Notes (GN).

87. The TWA considered a document on Combination of Lines or Varieties and received a presentation by Mr. Caicedo (Colombia) on “CASTILLO”, a plant grouping of 35 lines.

88. The TWA noted the developments concerning UPOV information databases and agreed to provide comments on the changes to UPOV codes.

89. Under the agenda item “Variety denominations”, the TWA agreed to the proposal to change the name of Class 211 to “Mushrooms” instead of “edible mushrooms” in order to improve clarity.

90. The TWA took note of the report provided in document TWA/37/6 on the project to consider the publications of variety descriptions and noted that the maize database developed in a Community Plant Variety Office of the European Community (CPVO) co-financed project by France, Germany and Spain might serve as a model for similar projects in other species.

91. The TWA noted that no new information was available concerning the development of a regional set of example varieties for the Test Guidelines for rice for South East Asia. The TWA noted that a further report would be made at the thirty-eighth session of the TWA.

92. The TWA discussed 10 draft Test Guidelines. It agreed to submit to the TC the draft Test Guidelines for Pea and Maize, which were revisions, and the Test Guidelines for Swede, which was a partial revision.

93. The TWA planned to continue discussions on nine Test Guidelines in 2009, two of which are revisions and seven of which are new. The TWA also agreed to start to establish Test Guidelines for Cassava and to revise the Test Guidelines for Common Vetch.

94. At the invitation of the experts from the Republic of Korea, the TWA agreed to hold its thirty-eighth session in Seoul, Republic of Korea, from August 31 to September 4, 2009. The TWA proposed to consider the following items at its next session: Short reports on developments in plant variety protection from members and observers; Reports on developments within UPOV; Developments on molecular techniques; TGP documents; UPOV information databases; Variety denominations; Project to consider the publication of variety descriptions; Combination of lines or varieties; Development of regional sets of example varieties for the Test Guidelines for Rice; Presentation on *Sorghum oryzoidum*;

discussion on draft Test Guidelines; Recommendations on draft Test Guidelines; Date and place of the next session; and Future program.

95. On the afternoon of July 15, 2008, the TWA visited field trials of oat, rye and pearl millet at Lowveld Agri-Research and Support Services in Nelspruit. The TWA also visited the Golden Macadamias factory.

96. At the end of the session, Mrs. Beate Rücker was awarded a UPOV bronze medal in recognition of her chairmanship of the TWA from 2006 to 2008.

Technical Working Party on Automation and Computer Programs (TWC)

97. The TWC held its twenty-sixth session in Jeju, Republic of Korea, from September 2 to 5, 2008. The report of the meeting is contained in document TWC/26/29. The session was attended by 29 participants from 15 members of the Union. The TWC was welcomed by Mr. Il-Ho Cho, Director of the Plant Variety Protection Division, Korea Seed and Variety Service (KSVS). The TWC session was chaired by Mrs. Sally Watson (United Kingdom). A preparatory workshop was held on the afternoon of September 1 and was attended by 9 participants.

98. Mr. Chan-Woong Park (KSVS) made a presentation on Plant Breeders' Rights in the Republic of Korea.

99. The TWC received a report from the Office of the Union on developments in UPOV including developments in the use of molecular techniques. The TWC received a presentation on the proposal presented in documents BMT/10/14 and BMT-TWA/Maize/2/11, whereby genetic distances would be used in combination with morphological distances obtained through GAIA to reduce the numbers of varieties of common knowledge included in the DUS growing trial.

100. Discussion of TGP documents formed an important part of the meeting. The TWC discussed drafts of documents TGP/8/1, TGP/11/1, TGP/12/1, TGP/13/1, TGP/14/1 in conjunction with the documents TWV/41/10 Rev. and TWC/26/10 on shape and color, and the revision of document TGP/7/1.

101. Considerable time was spent on discussion of TGP/8, which included new sections on statistical methods. A number of issues arose concerning the content of TGP/8. In particular:

(a) the TWC agreed that review by the relevant experts in the TWC would be appropriate to ensure that only suitable statistical methods would be included in document TGP/8;

(b) Part I, on process and scale levels would be re-drafted to make it clearer and more aligned with the DUS examiners' perspective;

(c) a section would be developed on the control of variation due to different observers;

(d) Part II, on GAIA and the Parental Formula would be moved to a separate subsection;

(e) contrary to the request by the TC, the TWC concluded that parametric and non-parametric methods should not be separated and compared, because there were no clear distinctions. Instead, it was proposed that each statistical method should be presented with conditions for its use. A flow diagram would provide guidance on the choice of methods;

(f) a section to provide guidance for small sample sizes would be developed;

(g) tables for combinations of population standards and acceptance probabilities that were not found in adopted Test Guidelines to be deleted from the section on off-types;

(h) a new section on data processing for the assessment of distinctness and for producing variety descriptions for measured, quantitative characteristics to be introduced in Part I with examples of methods used by different countries in Part II; and

(i) the section on “Examination of characteristics using image analysis” to be moved from TGP/12 to TGP/8 and redrafted.

102. In reply to the TC’s request that the TWC present information on an annual basis in the form of a document on the existence and availability of exchangeable software, the TWC concluded that it could not assess the programming in detail, but could propose the inclusion of software in such a document on the basis of the experiences presented by experts from the members of the Union at the TWC session. The TWC agreed that the DUSTNT and GAIA software should be offered first for inclusion in the document. At the next TWC session there would be a presentation on the various modules in DUSTNT.

103. A questionnaire on assessing uniformity of off-types on the basis of more than one sample or sub-samples was agreed.

104. The TWC received a presentation on a possible adjustment to COYD where varieties are grouped within the DUS trial, as applied to pea in the United Kingdom. The approach would be tested on a cross-pollinated crop and the outcome reported at the next TWC session.

105. The TWC considered the results of a study of the bias in the error estimates in the COYU method and how it would be affected by reduction in the number of plants observed for reference varieties. The bias was caused by the method of adjustment for the mean-SD relationships in a characteristic. Further studies on possible adaptations to the COYU method to adjust for the bias would be reported at the next TWC session.

106. At the invitation of the United States of America, the TWC agreed to hold its twenty-seventh session in Alexandria, Virginia, Washington DC, from June 15 to 19, 2009, with a preparatory workshop on June 14.

107. During its forthcoming session the TWC planned to discuss the items mentioned above plus the use of image analysis, the use of Bennett’s test to assess uniformity, a rationale for elimination of reference varieties when COYD is used, statistical methods for visually observed characteristics, on-line application systems, a database for researching TWC documents and a report on datalogger usage.

108. At the close of the twenty-sixth session, Mrs. Sally Watson (United Kingdom) was awarded a UPOV bronze medal in recognition of her chairmanship of the TWC from 2006 to 2008.

Technical Working Party for Fruit Crops (TWF)

109. The TWF held its thirty-ninth session in Lisbon, Portugal, from June 2 to 6, 2008, with a preparatory workshop on the afternoon of June 1. The session was chaired by Mr. Alejandro Barrientos-Priego (Mexico), Chairman of the TWF, and was welcomed by Mr. Joaquim Carvalho, Deputy Director General, General Directorate for Agriculture and Rural Development (DGADR), Ministry of Agriculture, Rural Development and Fisheries (MADRP).

110. The session was attended by 37 participants from 19 members of the Union and two observer organizations. The report of the meeting is provided in document TWF/39/10 Rev.

111. The TWF received a presentation on MADRP made by Mr. José Fernandes, Head, Plant Health and Plant Propagating Materials Directorate, MADRP, and Mrs. Paula Cruz de Carvalho, Head, Seeds, Varieties and Genetic Resources Unit, MADRP, and received oral reports from participants on developments in plant variety protection and from the Office of the Union on the latest developments within UPOV.

112. The TWF discussed the matters raised by the International Community of Breeders of Asexually Reproduced Ornamental and Fruit-Tree Varieties (CIOPORA) on the basis of document TWF/39/8; namely, assessment of color evolution in apple mutants, phytosanitary status of material, duration of DUS examination for fruit varieties and cost of reference collections.

113. The TWF considered document TWF/39/2 concerning molecular techniques.

114. The TWF discussed a number of draft TGP documents:

(a) with regard to the invitation by the TC to advise if there is a need for additional off-type tables in TGP/8 to cover new combinations of population standards and acceptance probabilities, the TWF agreed that no such need existed for fruit crops;

(b) in relation to the consideration of including statistical methods for very small sample sizes, the TWF proposed that TGP/8 should contain an explanation that the observation of several parts of a plant (e.g. several fruits from a tree) did not increase the sample size for the purpose of uniformity, since the sample size was determined by the number of plants. It agreed that a cross reference should be made to document TGP/10/1, Section 4.2.2.4;

(c) the TWF considered document TGP/11/1 Draft 5 and the report on developments in the TC and CAJ in document TWF/39/3. The TWF noted that it would be necessary to receive the advice of the CAJ before TGP/11 could be developed further;

(d) the TWF considered document TGP/12/1 Draft 5 and the report on developments in document TWF/39/3. The TWF made no proposals concerning TGP/12;

(e) The TWF noted the amendments to the text of paragraph 2.4.2 of document TGP/13/1 Draft 12 and discussed the need to consider practical issues of access to wild populations in order to determine if they might constitute varieties of common knowledge. It also discussed the issue of how to determine the boundary of populations. It was agreed that it could be helpful to encourage breeders to provide parent material or

representative plants of original population to assist in the DUS examination of new varieties. The TWF agreed that it would not be possible to provide detailed guidance on those matters in document TGP/13, but concluded that it would be of assistance to hear reports from experts on their particular experiences with new types and species. On that basis, the TWF agreed to add an item for such presentations at its fortieth session and invited experts to prepare such reports. It also agreed that breeders might be invited to explain developments with regard to new types and species;

(f) the TWF considered documents TGP/14/1 Draft 6 “Glossary of Technical, Botanical and Statistical Terms Used in UPOV”, TWF/39/3Add. and TWV/41/10 Rev.; and

(g) the TWF considered the proposals for amendments to document TGP/7/1 as set out in document TWF/39/3, Annex II.

115. The TWF discussed the Draft Test Guidelines for Actinidia (Revision), Banana (*Musa* L.) (Revision), Cacao (*Theobroma cacao* L.), Dragon-fruit (*Hylocereus undatus* (Haw.) Britton et Rose), Fig (*Ficus carica* L.), Japanese Plum (Revision), Papaya, Passion Fruit (*Passiflora edulis* Sims), Peach (Revision), Pineapple (*Ananas comosus* (L.) Merr.) and *Prunus padus* L. (Bird cherry).

116. The TWF received an interim report on the possible development of a regional set of example varieties for North and East Asia for the Test Guidelines for Strawberry from Mr. Kiyofumi Nakamura (Japan).

117. The TWF noted the report on discussions concerning combinations of lines or varieties, as set out in document TWF/39/7.

118. The TWF considered document TWF/39/4 “UPOV Information Databases”, TWF/39/5 “Variety Denominations” and TWF/39/6 “Project to Consider the Publication of Variety Descriptions”.

119. The TWF agreed to submit to the TC for adoption the draft Test Guidelines for Fig, Passion Fruit and *Prunus padus* L.

120. The TWF planned to continue discussions on eight Test Guidelines, seven of which were at the “final” draft stage. The TWF also agreed that it should start to establish or revise nine Test Guidelines at its fortieth session. The TWF agreed that, at that session, it should also consider the possible development of Test Guidelines for the Chinese chestnut, Chinese date, *Juglans mandshurica* Maxim., *Lonicera caerulea* L. var. *kamtchatica* Sevest (Blue honeyberry) and *Prunus mume* Sieb. et Zucc. (ornamental).

121. At the invitation of the expert from France, the TWF agreed to hold its fortieth session in Angers, France, from September 21 to 25, 2009, with a preparatory workshop on September 20. During its thirty-ninth session, the TWF planned to discuss or re-discuss the following items: Short reports on developments in plant variety protection from members and observers; as well as within UPOV; Developments on molecular techniques; TGP documents; UPOV information databases; Variety denominations; Project to consider the publication of variety descriptions; Combinations of lines or varieties; Reports on new types and species; Matters to be resolved concerning Test Guidelines adopted by the Technical Committee; Discussions and recommendations on draft Test Guidelines.

122. At the close of the session, Mr. Alejandro F. Barrientos Priego was awarded a UPOV bronze medal in recognition of his chairmanship of the TWF from 2006 to 2008.

Technical Working Party for Ornamental Plants and Forest Trees (TWO)

123. The TWO held its forty-first session in Wageningen, Netherlands, from June 9 to 13, 2008, under the chairmanship of Mrs. Sandy Marshall (Canada). The report of the TWO is provided in document TWO/41/10.

124. The TWO was attended by 54 participants, from 21 members of the Union and one observer organization. The TWO noted that an International workshop on Plant Protection and Plant Breeders' Rights, organized by Naktuinbouw, was held on the morning of June 8. The TWO also noted that the preparatory workshop, held during the afternoon of June 8, was attended by 41 participants.

125. The TWO was welcomed by Mr. Kees van Ettehoven, Manager of Varieties and Trials at Naktuinbouw. He provided information on the plant variety protection system in the Netherlands and DUS Testing at Naktuinbouw. The TWO also received short oral reports on developments in variety protection from participants and from the Office of the Union on the latest developments within UPOV.

126. The TWO considered document TWO/41/2 concerning the use of molecular techniques in DUS testing.

127. A number of draft TGP documents were discussed. With regard to the invitation by the Technical Committee (TC) to advise if there is a need for additional off-type tables in TGP/8 to cover new combinations of population standards and acceptance probabilities, the TWO agreed that no such need existed for ornamental plants and forest trees. The TWO considered document TGP/11/1 Draft 5 and noted that it would be necessary to receive advice of the CAJ before TGP/11 could be developed further. For TGP/12, the TWO agreed that the section on frost tolerance should be deleted. The TWO discussed and made recommendations on document TGP/13 Draft 12. It also agreed to add an item for reports from experts on their particular experiences with new types and species at its forty-second session.

128. The TWO had particular interest in TGP/14/1 Draft 6, "Glossary of Technical, Botanical and Statistical Terms Used in UPOV Documents" subsection 3: "Color". In order to develop and test the approach to color characteristics proposed as result of the Workshop on Color, as reproduced in document TWO/41/3 Add., the TWO agreed that the European Community should coordinate a subgroup to develop proposals for an exercise in *Alstroemeria*, *Canna* and *Phalaenopsis* to see if characteristics based on that approach would be more effective than the traditional approach.

129. The TWO also considered and commented on the revision of TGP/7/1, "Development of Test Guidelines". It agreed that the date for the submission of draft Test Guidelines to the Office of the Union and the guideline date for the subgroup draft to be circulated by the Leading Expert should be met by the Leading Expert. In cases where either of those dates were not met, it was agreed that those Test Guidelines should be withdrawn from the agenda. The TWO proposed to consider whether to create the possibility for partial revision of asterisked characteristics by the TC by correspondence; and/or for members of the Union to add a footnote in the DUS reports for such cases until the revisions were agreed by the TC.

130. The TWO considered document TWO/41/4 “UPOV information databases” and received a report on the work of the International Association on Cultivated Plant Taxonomy (IACPT) from Mr. Kees van Ettehoven, president of the IACPT.

131. The TWO noted the developments provided in the documents TWO/41/5 “Variety Denomination” and TWO/41/6 “Project to Consider Publication of Variety Descriptions”. The TWO also considered document TWO/41/7 “Combinations of Lines”.

132. The TWO agreed to submit eight Test Guidelines to the TC. Of those, two were for the revision of existing Test Guidelines; for Lily and Zonal Pelargonium, and six were new Test Guidelines; for Anubias, Hevea, *Nerium oleander*, Mokara, Phlox and *Prunus padus*. However, after the meeting the leading expert for Lily concluded that not all the open questions could be resolved before the TC session and proposed that the Test Guidelines should be discussed again by the TWO. At its forty-second session, the TWO planned to discuss 23 Test Guidelines, consisting of five revisions and 18 new Test Guidelines.

133. Corrections have been made to the adopted Test Guidelines for Chrysanthemum (document TG/26/5), Anthurium (document TG/86/5), Ling, Scots Heather (document TG/94/6), Osteospermum (document TG/176/4), Waxflower (document TG/225/1) and Nemesia (document TG/241/1).

134. At the invitation of the Community Plant Variety Office of the European Community (CPVO), the TWO agreed to hold its forty-second session in Angers, France, from September 14 to 18, 2009 with a preparatory workshop to be held on September 13. During the forty-second session the TWO planned to discuss or re-discuss the following items: short reports on developments in plant variety protection from members, observers and within UPOV; molecular techniques; TGP documents; UPOV information databases; the project to consider the publication of variety descriptions; combinations of lines or varieties; and discussion of and recommendations for draft Test Guidelines.

135. At the close of the session, Mrs. Sandy Marshall (Canada) was awarded a UPOV bronze medal in recognition of her chairmanship of the TWO from 2006 to 2008.

Technical Working Party for Vegetables (TWV)

136. The TWV held its forty-second session in Cracow, Poland, from June 23 to 27, 2008, with a preparatory workshop on June 22. The session was chaired by Mr. Niall Green, chairman of the TWV. The full report of the meeting is provided in document TWV/42/17.

137. The session was attended by 54 participants from 22 members of the Union and one observer organization. The preparatory workshop was attended by 33 participants.

138. There were oral reports from the participants on developments in plant variety protection (PVP) in their countries. The TWV received presentations on Agriculture and DUS Testing of Varieties in Poland.

139. During the session draft of documents TGP/8 “Trial Design and Techniques used in the Examination of Distinctness, Uniformity and Stability”, TGP/11 “Examination of Stability”, TGP/12 “Special Characteristics”, TGP/13 “Guidance for New Types and Species” and TGP/14 “Glossary of Technical, Botanical and Statistical Terms used in UPOV Documents”

were discussed. In addition, the revision of TGP/7 “Development of Test Guidelines”, was also discussed.

140. The TWV discussed issues concerning the possible use of molecular techniques for vegetable crops, particularly the conservation of DNA-profiles, as discussed at the second session of the *Ad hoc* Crop Subgroup on Molecular Techniques for Rose. The TWV agreed that the conservation of DNA samples would be appropriate as changes in DNA-profiling techniques could render older results obsolete. The TWV agreed that the conservation of DNA samples could be of interest for vegetatively propagated varieties and might be of relevance for the management of reference collections.

141. The CPVO reported preliminary conclusions from a 2-year project to evaluate the use of molecular markers linked to disease resistance genes in Tomato (Option 1(a)). Molecular marker assays had been developed for the obligatory disease resistance characteristics in the CPVO Tomato DUS Protocol. Pathogenesis and molecular marker assays gave identical results for both nematode resistance and Tomato Mosaic Virus genes. A ring-test would be undertaken in 2008 on a larger number of varieties and plants to verify repeatability for distinctness and uniformity, before consideration would be given to the introduction of molecular marker assays either as a substitute or as a complementary test. A report would be made at the forty-third session of the TWV and the eleventh session of the BMT.

142. The TWV discussed the possible development of guidance to harmonize the approach for testing applications for varieties with low germination, such as some parent lines. It was noted that distinctness and uniformity could be difficult to assess where there were different levels of vigor and germination. The TWV agreed to consider the issue further at its forty-third session with information from specific cases.

143. The TWV received a proposal from the Netherlands for the updating of the nomenclature of pathogens and for the adoption of internationally standardized disease resistance codes in Test Guidelines. The TWV agreed to discuss those proposals in more detail at the forty-third session.

144. The TWV agreed to set up a ring-test to determine whether the Test Guidelines for Black Radish and Radish should be combined. Plant material would be exchanged between 10 participating countries for a maximum of 10 varieties. The TWV agreed that France and Germany would coordinate the ring-test and present the results by the end of October 2008, with a proposal for a possible set of characteristics to group all radish varieties. That would be discussed at the forty-third session of the TWV.

145. The TWV agreed to submit to the TC 5 revised Test Guidelines (Cauliflower, Maize and Pea, Pumpkin and Swede) and 3 new Test Guidelines (Asparagus Bean, Taro and Yam).

146. The TWV agreed to discuss a total of 13 Test Guidelines at its forty-third session, of which 6 were final drafts, 3 were revisions, 2 were partial revisions (disease characteristics in Lettuce and Pea) and 2 were to extend coverage of the Test Guidelines (Globe Artichoke to include Cardoon and Black Radish to include Radish).

147. At the invitation of the experts from China, the TWV agreed to hold its forty-third session in Beijing, China from April 20 to 24, 2009, with a preparatory workshop on April 19.

148. During the forty-third session, the TWV planned to discuss: Short reports on developments in plant variety protection; Molecular techniques; TGP documents; UPOV information databases; Variety denominations; the project to consider the publication of variety descriptions; Applications for varieties with low germination; Nomenclature of pathogens; a review of grouping, Technical Questionnaire and asterisked characteristics in the Test Guidelines for Pea; Proposals for partial revisions / corrections of Test Guidelines; Matters to be resolved concerning Test Guidelines adopted by the Technical Committee; Discussion and recommendations on draft Test Guidelines; Date and place of the next session; Future program; and the Report on the conclusions of the session.

149. At the close of the session, Mr. Niall Green was awarded a UPOV bronze medal in recognition of his chairmanship of the TWV from 2006 to 2008.

Working Group on Biochemical and Molecular Techniques, and DNA-Profiling in Particular (BMT)

150. The BMT held its eleventh session in Madrid, Spain, from September 16 to 18, 2008, under the chairmanship of Mr. Henk Bonthuis (Netherlands). The report of the meeting is provided in document BMT/11/29.

151. The session of the BMT was attended by 115 participants from 24 members of the Union and 4 observer organizations. The preparatory workshop was attended by 67 participants.

152. The BMT was welcomed by the Spanish Office of Plant Varieties (OEVV) of the Ministry of Environment and Rural and Marine Affairs.

153. In the session on the use of molecular techniques in examining essential derivation, the BMT learned about the positions of ISF and CIOPORA.

154. The BMT heard reports on the use of molecular techniques in variety identification from Spain (for various fruit crops), from Japan (for rose) and from Argentina (for soybean). The CPVO presented a practical example on the possible use of molecular techniques in variety identification of rose based on the storage of DNA samples obtained in DUS testing.

155. The BMT heard from the Crop Subgroup chairpersons that there had been Crop Subgroup meetings for Rose, Potato and Maize in 2007. The BMT noted that the TC had approved Mr. Michael Camlin as Chairman of the Crop Subgroup for Wheat and Barley. The BMT also noted that no meetings of the Crop Subgroups for Oilseed Rape, Ryegrass, Soybean, Sugarcane, Tomato or Wheat and Barley had taken place since its last session.

156. The BMT heard short reports on developments in biochemical and molecular techniques. An expert from Brazil reported about a study on the identification of at least 15 SSR markers for identifying protected soybean varieties in Brazil. An expert from China reported on the adoption of guidelines for the use of DNA for variety identification and PBR enforcement, with a database containing information of 4,000 varieties established by the Maize Research Centre of Beijing. An expert from France reported that a project, supported by CPVO, for the development of SSR markers for peach was under development, in cooperation with Spain, Hungary and Italy. An expert from the Netherlands noted a project to develop expressed SSR markers for Brazilian rice varieties which might fall within an Option 1(a) approach. An expert from the Republic of Korea reported that the Korean Seed

and Variety Service had used molecular techniques for seed management, including plant variety protection. The representative of ISF reported that ISF has established a working group on molecular markers for variety testing which would hold its first meeting immediately after the BMT session. The working group would review the UPOV Options on the use of molecular markers and planned to establish a written position.

157. The BMT received reports on molecular techniques in vegetatively propagated crops, including grapevine, potato and eucalyptus. An expert from Spain presented a microsatellite-based system for the construction of a reference collection in grapevine. Experts from the Netherlands and the United Kingdom reported on the development of an integrated microsatellite and key morphological characteristic database of potato varieties and an expert from Brazil reported on the use of a marker-based system for the identification of varieties within the genus *Eucalyptus*.

158. The BMT received reports on Option 1(a) approaches in self-pollinated crops such as tomato and barley. An expert from France showed a possible Option 2 approach in barley comparable to the approach France had developed for maize, combining molecular and morphological distances for the selection of reference varieties. A similar approach was presented by an expert from the United Kingdom on the management of reference collections of winter oilseed rape, in cooperation with France, Germany and Denmark and supported by CPVO.

159. The BMT received presentations from the International Standards Organization (ISO), Codex and ISTA on the development of international guidelines on molecular methodologies. The BMT heard that ISO has established a subcommittee for international standardisation of biomolecular methods for food and seed. The working group on varietal identification was especially relevant to the BMT.

160. The BMT agreed that the Guidelines for Molecular Marker Selection and Database Construction (BMT Guidelines), based on recommendations made at the eleventh BMT session, could be proposed for agreement by the Technical Committee.

161. The BMT noted the following plans for meetings of the existing Crop Subgroups: Crop Subgroup for Maize to meet in December 2009. Crop Subgroup for Potato to consider a future meeting according to the developments in on-going projects. Crop Subgroup for Soybean to discuss the need for a meeting with experts from Argentina and Brazil. Crop Subgroup for Wheat and Barley to consider a meeting in conjunction with the twelfth session of the BMT.

162. In response to the invitation received from experts from Canada, the BMT agreed to hold its twelfth session in Ottawa, Canada, from May 11 to 13, 2010.

163. For its the twelfth session, the BMT agreed to discuss the following items: Reports on developments in UPOV concerning biochemical and molecular techniques; Reports on the work of the Crop Subgroups; Short presentations on new developments in biochemical and molecular techniques by DUS experts, biochemical and molecular specialists, plant breeders and relevant international organizations; Reports of work on molecular techniques on a crop-by-crop basis: (a) vegetatively propagated crops; (b) self-pollinated crops; and (c) cross-pollinated crops; International guidelines on molecular methodologies; Development of a common database structure for molecular data; Methods for analysis of molecular data; Use of molecular techniques in examining essential derivation; Use of molecular techniques in variety identification; and recommendations on the establishment of new crop specific subgroups.

164. Noting the success of the first day of the session in inviting breeders to discuss the use of molecular techniques in examining essential derivation and in variety identification, the BMT agreed to repeat this at its twelfth session. In particular, breeders and other experts would be offered the possibility to attend for that specific day.

165. At the end of the session, Mr. Henk Bonthuis was awarded a UPOV bronze medal in recognition of his chairmanship of the BMT from 2006 to 2008.

166. After the close of the session the BMT participants visited Finca El Encin, an experimental farm and estate of the Madrid Institute for Rural, Agrarian and Food Research and Development (IMIDRA), where the BMT participants had an opportunity to see the national collection of grapevine varieties (with 3,259 accessions) and to visit the laboratory of molecular biology.

167. 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; and

(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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