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

**ADMINISTRATIVE AND LEGAL COMMITTEE**

**Sixty-Second Session**  
**October 19, 2010**

MOLECULAR TECHNIQUES

*Document prepared by the Office of the Union*

1. The purpose of this document is to consider developments concerning the:

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

(b) proposals for the utilization of biochemical and molecular techniques in the examination of Distinctness, Uniformity and Stability considered by the *Ad hoc* Subgroup of Technical and Legal Experts of Biochemical and Molecular Techniques (BMT Review Group);

(c) revision of documents TC/38/14-CAJ/45/5 “*Ad Hoc* Subgroup of Technical and Legal Experts on Biochemical and Molecular Techniques (‘The BMT Review Group’)” and TC/38/14 Add.-CAJ/45/5 Add. “Recommendations of the BMT Review Group and Opinion of the Technical Committee and the Administrative and Legal Committee Concerning Molecular Techniques”; and

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

2. An overview of the UPOV bodies involved in the consideration of biochemical and molecular techniques is provided on the first restricted area of the UPOV website at [http://www.upov.int/restrict/en/upov\\_structure\\_index.html](http://www.upov.int/restrict/en/upov_structure_index.html). That overview is also attached as Annex I to this document.

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3. The following abbreviations are used in this document:

CAJ:	Administrative and Legal Committee
TC:	Technical Committee
TC-EDC:	Enlarged Editorial Committee
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
TWP(s):	Technical Working Party(ies)
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 on Biochemical and Molecular Techniques
Crop Subgroup:	<i>Ad Hoc</i> Crop Subgroup on Molecular Techniques

UPOV GUIDELINES FOR DNA-PROFILING: MOLECULAR MARKER SELECTION AND DATABASE CONSTRUCTION (BMT GUIDELINES)

4. Document BMT Guidelines (proj.16), was considered by the TC at its forty-sixth session, held in Geneva from March 22 to 24, 2010, and by the CAJ at its sixty-first session, held in Geneva on March 25, 2010.

5. The TC agreed that document BMT Guidelines (proj.16) should be amended as indicated in the document, but agreed that no further modifications were required. The TC agreed that, subject to agreement by the CAJ, document BMT Guidelines (proj.16) should be put forward for adoption by the Council at its forty-fourth ordinary session. The TC 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 BMT Guidelines to the Council (see document TC/46/15 “Report on the Conclusions”, paragraphs 39 and 40).

6. At its sixty-first session, the CAJ noted that no proposals for modification to document BMT Guidelines (proj.16) had been made by the TC at its forty-sixth session. The CAJ agreed that document BMT Guidelines should be put forward for adoption by the Council at its forty-fourth ordinary session, to be held in Geneva on October 21, 2010, on the basis of document BMT Guidelines (proj.16). 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 BMT Guidelines to the Council (see document CAJ/61/11 “Report on the Conclusions”, paragraphs 58 and 59).

7. On the basis above, document BMT Guidelines (proj.17) will be considered for adoption by the Council at its forty-fourth ordinary session, to be held in Geneva on October 21, 2010.

REVISION OF DOCUMENTS TC/38/14-CAJ/45/5 AND TC/38/14 ADD.-CAJ/45/5 ADD.

Background

8. Documents TC/38/14-CAJ/45/5 “*Ad Hoc* Subgroup of Technical and Legal Experts on Biochemical and Molecular Techniques (‘The BMT Review Group’)” and TC/38/14 Add.-CAJ/45/5 Add. “Recommendations of the BMT Review Group and Opinion of the Technical Committee and the Administrative and Legal Committee Concerning Molecular Techniques”, summarize the consideration of possible application models proposed by the TC, on the basis of the work of the BMT and crop subgroups, for the utilization of biochemical and molecular techniques in the examination of Distinctness, Uniformity and Stability.

9. At its seventy-fourth session, held in Geneva on October 24, 2007, the Consultative Committee made a preliminary examination of document BMT Guidelines (proj.9), proposed for adoption by the Council. One of the recommendations of the Consultative Committee was that “consideration be given to the status of documents TC/38/14-CAJ/45/5 and TC/38/14 Add.-CAJ/45/5 Add. with regard to their reference in the introduction of document BMT Guidelines (proj.9) .

10. With regard to the status of documents TC/38/14-CAJ/45/5 and TC/38/14 Add.-CAJ/45/5 Add., the Consultative Committee, at its seventy-eighth session, held in Geneva on October 22, 2009, agreed that, unless otherwise agreed by the Council, documents which set out UPOV policies or guidance, once approved by the relevant UPOV Committees, as appropriate, must be adopted by the Council. In cases where a rapid presentation of a UPOV policy or guidance is required, such that adoption could not be achieved by presentation of a document to the Council, approval would be sought by correspondence from the representatives to the Council of the members of the Union (see document C/43/16 “Report”, paragraph 14(i)).

11. At its forty-fourth session, held in Geneva from April 7 to 9, 2008, the TC noted the request of the Consultative Committee that consideration be given to the status of documents TC/38/14-CAJ/45/5 and TC/38/14 Add.-CAJ/45/5 Add. with regard to their reference in the introduction of document BMT Guidelines. The TC noted that documents TC/38/14-CAJ/45/5 and TC/38/14 Add.-CAJ/45/5 Add. would need to be reviewed in conjunction with discussions on 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” (see document TC/44/13 “Report”, paragraph 150). On that basis, it agreed that it would be appropriate to submit a revised version of documents TC/38/14-CAJ/45/5 and TC/38/14 Add.-CAJ/45/5 Add. to the Council in conjunction with the BMT Guidelines.

12. At its forty-fifth session, held in Geneva from March 30 to April 1, 2009, 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 and TC/38/14 Add.-CAJ/45/5 Add., 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 (see document TC/45/16 “Report”, paragraph 152).

13. 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 (see document TC/45/16 “Report”, paragraphs 152 and 153). 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 document TC/45/16 “Report”, paragraph 153).

14. The CAJ, at its sixtieth session, 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 CAJ noted that a document could be presented for adoption by the Council in October 2010, in conjunction with the BMT Guidelines (see document CAJ/60/10 “Report on the Conclusions”, paragraph 46).

15. In accordance with the procedure set out above, the Office of the Union prepared a revised version 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. That document (document BMT/DUS Draft 1 “Possible Use of Biochemical and Molecular Markers in the Examination of Distinctness, Uniformity and Stability (DUS)”) was presented to the TC-EDC, at its meeting on January 7, 2010.

16. The TC-EDC, at its meeting on January 7, 2010, did not comment on document BMT/DUS Draft 1 in detail, considering that it would be more appropriate for the TC to make a first assessment of that document at its forty-sixth session. On that basis, document BMT/DUS Draft 2, considered by the TC at its forty-sixth session, and by the CAJ at its sixty-first session, contained no changes to the text of document BMT/DUS Draft 1. However, the TC-EDC recommended that the TC consider whether the document might take on the reference “document TGP/15” (TGP/15 currently has the title “New Types of Characteristics”), subject to an appropriate change of title of document TGP/15.

17. At its forty-sixth session, held in Geneva from March 22 to 24, 2010 (see document TC/46/15 “Report on the Conclusions”, paragraphs 43 to 45), the TC agreed the following amendments to document BMT/DUS Draft 2:

Title	to read “Possible Use of Molecular Markers in the Examination of Distinctness, Uniformity and Stability (“DUS”)”
Structure	to differentiate the models into those which received a positive endorsement by the BMT Review Group, CAJ and TC and those where there was no consensus on their acceptability. Within the models which received a positive endorsement by the BMT Review Group, CAJ and TC, to consider a further separation of the models for which further work was required.
Title of models	to seek to develop a short title for each model

18. The TC noted that the CAJ, at its sixtieth session, had agreed that a document could be presented for adoption by the Council in October 2010, in conjunction with the document BMT Guidelines. However, the TC agreed that a new draft of the document BMT/DUS should be prepared by the Office of the Union, in conjunction with the TC Chairman and the BMT Chairman, for consideration by the BMT and the TWPs at their sessions in 2010 and a

further draft prepared on the basis of the comments of the BMT, TWPs and CAJ for consideration by the TC at its forty-seventh session.

19. The TC agreed that the possibility of document BMT/DUS Draft 2 becoming document TGP/15, with an appropriate change of title for TGP/15, should be considered at a later stage.

#### Consideration by the CAJ

20. The CAJ, at its sixty-first session, held in Geneva on March 25, 2010 (see document CAJ/61/11 "Report on the Conclusions", paragraphs 60 to 62), noted the conclusions of the TC on document BMT/DUS Draft 2. The CAJ noted that the TC had agreed that a new draft of the document BMT/DUS should be prepared by the Office of the Union, in conjunction with the TC Chairman and the BMT Chairman, for consideration by the BMT and the TWPs at their sessions in 2010 and a further draft prepared on the basis of the comments of the BMT and TWPs for consideration by the TC at its forty-seventh session, to be held in Geneva in April 2011.

21. It is proposed that, at its sixty-third session, to be held in Geneva in April 2011, the CAJ be invited to consider the same draft of document BMT/DUS as that to be considered by the TC at its forty-seventh session. The CAJ, at its sixty-third session, would also receive an oral report on the conclusions of the TC at its forty-seventh session.

#### WORKING GROUP ON BIOCHEMICAL AND MOLECULAR TECHNIQUES, AND DNA-PROFILING IN PARTICULAR (BMT)

22. It is recalled that, in order to encourage the presentation of information in relation to the use of molecular techniques in the consideration of essential derivation and in variety identification, the BMT agreed at its tenth session, held in Seoul, Republic of Korea, from November 21 to 23, 2006, that it would be appropriate to dedicate a specific day to the agenda items "The use of molecular techniques in the consideration of essential derivation" and "The use of molecular techniques in variety identification", at the eleventh session of the BMT. In particular, breeders and other experts would be offered the possibility to attend for that specific day (the "Breeders' Day"). That arrangement was repeated at the twelfth session of the BMT, held in Ottawa, Canada, from May 11 to 13, 2010.

23. At its twelfth session, in response to the invitation received from Brazil, the BMT agreed to hold its thirteenth session in Brasilia, Brazil, from November 22 to 24, 2011, with the preparatory workshop to be held on November 21, 2011. The BMT agreed that, in order to encourage the presentation of information in relation to the use of molecular techniques in examining essential derivation and in variety identification, it would be appropriate to dedicate a specific day to items 10 and 11 at the thirteenth session of the BMT. In particular, breeders and other experts would be offered the possibility to attend for that specific day, which would be November 22, 2011.

24. *The CAJ is invited to*

*(a) note the developments concerning:*

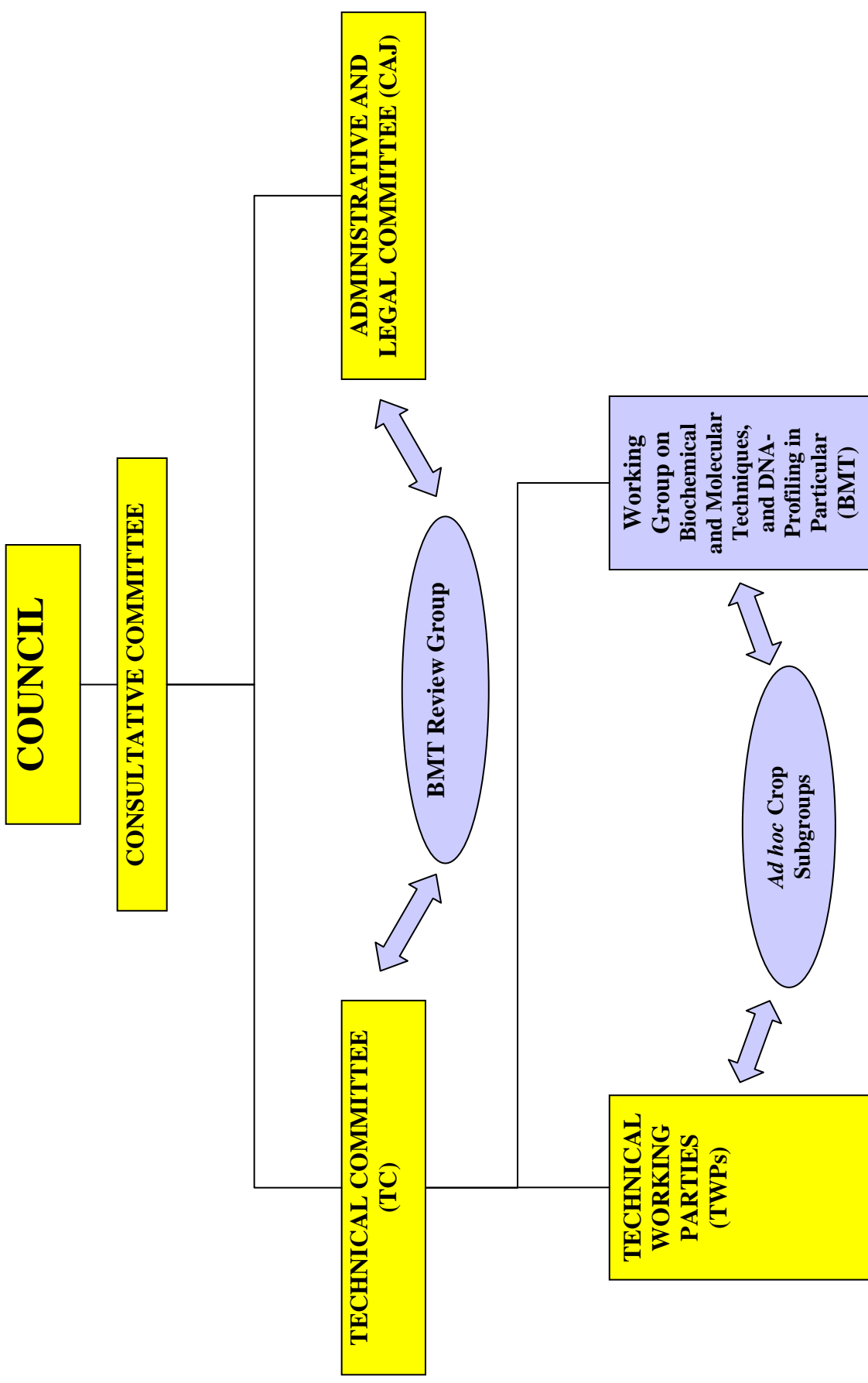
*(i) the BMT Guidelines (see paragraphs 4 to 7) and the*

*(ii) BMT (see paragraphs 22 and 23);*

*(b) agree to consider a new draft of document BMT/DUS at its sixty-third session, as set out in paragraphs 20 and 21.*

[Annex I follows]

# UPOV Structure: Biochemical and Molecular Techniques





**ROLE OF THE WORKING GROUP ON BIOCHEMICAL AND  
MOLECULAR TECHNIQUES, AND DNA-PROFILING  
IN PARTICULAR (BMT)**

*(as agreed by the Technical Committee at its thirty-eighth session, held in Geneva,  
from April 15 to 17, 2002 (see document TC/38/16, paragraph 204))*

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 TC;
- (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.

**TERMS OF REFERENCE OF THE *AD HOC* SUBGROUP OF TECHNICAL  
AND LEGAL EXPERTS ON BIOCHEMICAL AND MOLECULAR  
TECHNIQUES (“BMT REVIEW GROUP”)**

*(as agreed by the Administrative and Legal Committee at its forty-third session,  
held on April 5, 2001 (see document CAJ/43/8, paragraph 58))*

1. The BMT Review Group should assess possible application models proposed by the Technical Committee, on the basis of the work of the BMT and crop subgroups, for the utilization of biochemical and molecular techniques in the examination of Distinctness, Uniformity and Stability in relation to the following:
  - (a) conformity with the UPOV Convention, and
  - (b) potential impact on the strength of protection compared to that provided by current examination methods and advise if this could undermine the effectiveness of protection offered under the UPOV system.
2. In conducting its assessment, the BMT Review Group may refer specific aspects to the Administrative and Legal Committee or the Technical Committee for clarification or further information as considered appropriate.
3. The BMT Review Group will report its assessment, as set out in paragraph 1 above, to the Administrative and Legal Committee, but this assessment will not be binding for the position of the Administrative and Legal Committee.

## **AD HOC CROP SUBGROUPS ON MOLECULAR TECHNIQUES (CROP SUBGROUPS)**

At its thirty-sixth session, held in Geneva, from April 3 to 5, 2000, the Technical Committee agreed to the creation of the *Ad hoc* Crop Subgroups proposed by the BMT at its sixth session, held in Angers, France from March 1 to 3, 2000 (see document TC/36/11, paragraph 123).

*Extract from document TC/36/3 Add.*

“23. [At its sixth session, held in Angers, France from March 1 to 3, 2000] The BMT agreed that real progress could not be expected without intensive discussion in small groups on specific species. It therefore decided to propose establishing *ad hoc* crop subgroups during the eighteen month interval until the next session to make real progress in discussions on possibilities and consequences of the introduction of molecular techniques in DUS testing, the management of reference collection and the judgment of essential derivation.

“24. The BMT discussed the role of *ad hoc* crop subgroups and its relationship with the Technical Working Parties. It agreed that testing experts in the Technical Working Party should be involved with the discussion in the *ad hoc* crop subgroups. It also agreed that the chairmen of the *ad hoc* crop subgroups should be chosen from experts in the Technical Working Party in question. The role of the *ad hoc* crop subgroups would not be to make any decisions, but to prepare documents that could be a basis of further discussions in the BMT, the Technical Working Parties and the Technical Committee. The BMT confirmed that the Technical Working Parties should be the decision-making bodies for the introduction of new characteristics into DUS testing for each species.

[...]

“26. The BMT discussed the selection of species for the subgroups. A majority of experts supported two criteria, (i) the need for the introduction of molecular techniques in DUS testing (species for which a limited number of characteristics are available and species which urgently need effective methods for the management of reference collection) and (ii) the availability of DNA profiling data and on-going studies.”

At its forty-third session, held in Geneva, from March 26 to 28, 2007, the Technical Committee agreed to invite the Crop Subgroups to develop proposals concerning the possible use of molecular tools for variety identification in relation to the enforcement of plant breeders' rights, technical verification and the consideration of essential derivation.

The list of Crop Subgroups established by the Technical Committee (TC) is as follows:

<u>Crop Subgroup for:</u>	<u>TWP</u>	<u>Chairperson</u>	<u>TC Session which established</u>
<b>Maize</b>	TWA	Mrs. Beate Rücker (Germany)	thirty-sixth session (2000)
<b>Oilseed Rape</b>	TWA	Mrs. Laetitia Denecheau (France)	thirty-sixth session (2000)
<b>Potato</b>	TWA	Mrs. Beate Rücker (Germany)	thirty-eighth session (2002)
<b>Rose</b>	TWO	Mr. Joost Barendrecht (Netherlands)	thirty-sixth session (2000)
<b>Ryegrass</b>	TWA	Mr. Michael Camlin (United Kingdom)	forty-second session (2006)
<b>Soybean</b>	TWA	Mr. Marcelo Labarta (Argentina)	thirty-eighth session (2002)
<b>Sugarcane</b>	TWA	Mr. Luis Salaices (Spain)	thirty-eighth session (2002)
<b>Tomato</b>	TWV	Mr. Richard Brand (France)	thirty-sixth session (2000)
<b>Wheat and Barley</b>	TWA	Mr. Michael Camlin (United Kingdom)	thirty-sixth session (2000) / forty-second session (2006)

[Annex II follows]

**BMT REVIEW GROUP**

Chairman: Mr. Rolf Jördens (Office)

Members: Ms. Carmen Gianni (AR and Chair of the CAJ)  
Mr. Doug Waterhouse (AU)  
Mr. Bart Kiewiet / Mr. Carlos Godinho (European Union)  
Mr. Michael Köller (DE)  
Ms. Nicole Bustin (FR)  
Mr. Joël Guiard (FR)  
Mr. Satoshi Shimomura (JP)  
Mr. Henk Bonthuis (NL) (ex-Chairman of the BMT)  
Mr. Chris Barnaby (NZ) (Chairman of the TC)  
Mr. Michael Camlin (GB)  
Mr. Andy Mitchell (GB and Chairman of the BMT)  
Mrs. Beate Rücker (DE) (Chairperson of the *Ad Hoc* Crop Subgroup on  
Molecular Techniques for Maize)

Observers: International Community of Breeders of Asexually Reproduced Ornamental  
and Fruit-Tree Varieties (CIOPORA)  
International Seed Federation (ISF)

Office: Mr. Peter Button  
Mr. Raimundo Lavignolle  
Mr. Makoto Tabata  
Mrs. Yolanda Huerta

[End of Annex II and of document]