



BMT-RG/Apr09/3

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INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS
GENEVA

**AD HOC SUBGROUP OF TECHNICAL AND LEGAL EXPERTS
OF BIOCHEMICAL AND MOLECULAR TECHNIQUES
("BMT REVIEW GROUP")**

**Meeting
Geneva, April 1, 2009**

REPORT

*adopted by the Ad hoc Subgroup of Technical and Legal Experts of Biochemical
and Molecular Techniques (BMT Review Group)*

Opening of the meeting

1. The *Ad hoc* Subgroup of Technical and Legal Experts of Biochemical and Molecular Techniques (BMT Review Group) held a meeting in Geneva on April 1, 2009. The composition of the BMT Review Group is attached as Annex I to this document. The list of participants is reproduced in Annex II to this document.
2. The meeting was opened by Mr. Rolf Jördens (Vice Secretary-General), Chairman of the BMT Review Group, who welcomed the members of the BMT Review Group and the other participants.

Adoption of the agenda

3. The BMT Review Group adopted the agenda as presented in document BMT-RG/Apr09/1.

Brief review of the current situation within UPOV with regard to the possible use of molecular markers in the examination of distinctness, uniformity and stability (DUS)

4. The BMT Review Group noted the current situation in UPOV as set out in documents TC/38/14-CAJ/45/5 and TC/38/14 Add.-CAJ/45/5 Add. and summarized in a presentation made by the Office of the Union, a copy of which is available on the UPOV website at http://www.upov.int/restrict/en/bmt_review_group/index_bmt_rg_april_2009.htm.

Proposal for use of molecular techniques in DUS testing of maize

5. The BMT Review Group considered document BMT-RG/Apr09/2 “Proposal for use of molecular techniques in DUS testing of Maize” and a presentation made by Mr. Joël Guiard (France), a copy of which is reproduced as document BMT-RG/Apr09/2 Add.

6. The BMT Review Group concluded that the proposal to be considered was set out in the Annex to document BMT-RG/Apr09/2.

7. The BMT Review Group agreed that the slide in the presentation concerning the visual assessment by maize crop experts of a scale of similarity (reproduced below) was a critical element in the proposal and agreed that, for its consideration by the Technical Committee and the Administrative and Legal Committee, the Annex to document BMT-RG/Apr09/2 should be modified to incorporate that element in its appendix:

**THE EXPERT'S APPRECIATION OF DEGREE OF
SIMILARITY/DIFFERENCE BETWEEN 2 VARIETIES**

- **Material** : 504 pairs of varieties tested in parallel with molecular markers
- **Field design** : pairs of varieties grown side by side
(1 plot = 2 rows of 15 plants)
- **Visual assessment** by maize crop experts
- **Scale of similarity:**
 1. the two varieties are similar or very close
 3. the two varieties are distinct but close
 5. the comparison was useful, but the varieties are clearly distinct
 7. the comparison should have been avoided because the varieties are very different
 9. the comparison should have been avoided because the varieties are totally different

8. With regard to the scale of similarity, Mr. Guiard clarified that the “even” notes (2, 4, 6 and 8) were not used and agreed that the lines for even notes in the graph in Slide 2 of the appendix to the Annex to document BMT-RG/Apr09/2 could be deleted to avoid confusion. The representative of the International Seed Federation (ISF) sought further clarification on the notes used for “expert” difference in cases where the experts differed in their attribution of notes¹.

9. Mr. Henk Bonthuis (Netherlands) sought information on the risk assessment that had been made with respect to the proposal. Mr. Guiard observed that no approach, including existing approaches, could eliminate all risk. With regard to the proposal, Mr. Guiard observed that it would enable more varieties of common knowledge to be considered for distinctness in a robust way. He considered that it presented a lower risk of making a wrong decision on distinctness than the existing approach. He also explained that consultation with breeders had been an important element in ensuring that any risks would be acceptable. Mr. Bonthuis noted that the combination of molecular and morphological information, as set out in the proposal, could strengthen the system for the management of variety collections.

10. Mrs. Beate Rücker (Germany) agreed that the proposal could help to reduce risk in the management of variety collections by reducing dependence on morphological data, which could be influenced by the environment. However, she observed that it was important for the molecular data to be sufficiently robust, for example by having a sufficient number of markers that provided a reliable genetic distance.

11. In relation to an assessment of risk of making a wrong decision on distinctness, Mrs. Kitisri Sukhapinda (United States of America) sought information on whether the proposed approach had been compared to the existing approach. Mr. Guiard confirmed that the proposed approach had been checked against the existing approach and that there would have been no different outcomes in any of the cases studied.

Recommendations of the BMT Review Group

12. The BMT Review Group concluded that the proposal in the Annex to document BMT-RG/Apr09/2 “Proposal: System for combining phenotypic and molecular distances in the management of variety collections”, incorporating the clarifications set out in paragraphs 7 and 8 above, where used for the management of variety collections, was acceptable within the terms of the UPOV Convention and would not undermine the effectiveness of protection offered under the UPOV system.

13. The BMT Review Group agreed that the proposal in the Annex to document BMT-RG/Apr09/2 represented a model that might be applicable to other crops provided that the elements of the proposal were equally applicable. In that respect, it noted, for example, that the proposal in the Annex to document BMT-RG/Apr09/2 applied only to maize parental lines and did not extend to other types of maize. The BMT Review Group concluded that it was important to consider on a case-by-case basis whether the model would be applicable.

¹ After the meeting, Mr. Guiard communicated to the Office of the Union that each data point corresponds to the lowest note determined by the panel of experts for a given pair of varieties. That information will be included when the proposal is presented for consideration by the Technical Committee and the Administrative and Legal Committee.

14. The BMT Review Group noted that some of the elements of the proposal in the Annex to document BMT-RG/Apr09/2 were similar to the Option 2 approach “Calibration of threshold levels for molecular characteristics against the minimum distance in traditional characteristics”, as set out in documents TC/38/14-CAJ/45/5 and TC/38/14 Add.-CAJ/45/5 Add. However, the BMT Review Group concluded that it would not be appropriate to classify the proposal under Option 2 and agreed that the proposal should be referred to as the “System for combining phenotypic and molecular distances in the management of variety collections”.

15. The present report has been adopted by correspondence.

[Annexes follow]

ANNEX I

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Mr. Doug Waterhouse (AU and President of the Council)
Mr. Bart Kiewiet / Mr. Carlos Godinho (European Community)
Mr. Michael Köller (DE)
Ms. Nicole Bustin (FR)
Mr. Joël Guiard (FR)
Mr. Hiroki Fukai (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

[Annex II follows]

ANNEX II

LISTE DES PARTICIPANTS / LIST OF PARTICIPANTS / TEILNEHMERLISTE / LISTA DE PARTICIPANTES

(dans l'ordre alphabétique des noms français des membres/
in the alphabetical order of the names in French of the members/
in alphabetischer Reihenfolge der französischen Namen der Mitglieder/
por orden alfabético de los nombres en francés de los miembros)

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[Fin de l'annexe II et du document/
End of Annex II and of document/
Ende der Anlage II und des Dokuments/
Fin del Anexo II y del documento]