

**Administrative and Legal Committee**

**CAJ/76/INF/3**

**Seventy-Sixth Session  
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**MOLECULAR TECHNIQUES – MATTERS FOR INFORMATION**

*Document prepared by the Office of the Union*

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**EXECUTIVE SUMMARY**

1. The purpose of this document is to report developments concerning molecular techniques since the seventy-fifth session of the Administrative and Legal Committee (CAJ).

2. The following abbreviations are used in this document:

- BMT: Working Group on Biochemical and Molecular Techniques, and DNA-Profiling in Particular
- CAJ: Administrative and Legal Committee
- TC: Technical 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
- TWPs: Technical Working Parties
- TWV: Technical Working Party for Vegetables
- OECD: Organization for Economic Co-operation and Development
- ISTA: International Seed Testing Association

3. The structure of this document is as follows:

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REVIEW OF DOCUMENT UPOV/INF/17 “GUIDELINES FOR DNA-PROFILING: MOLECULAR MARKER SELECTION AND DATABASE CONSTRUCTION (‘BMT GUIDELINES’)” ..... 1

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**BACKGROUND**

4. The role of the Working Group on Biochemical and Molecular Techniques, and DNA-Profiling in Particular (BMT) is reproduced in the Annex to this document.

**REVIEW OF DOCUMENT UPOV/INF/17 “GUIDELINES FOR DNA-PROFILING: MOLECULAR MARKER SELECTION AND DATABASE CONSTRUCTION (‘BMT GUIDELINES’)”**

5. The background to this matter is provided in document CAJ/75/11 “Molecular techniques”, paragraphs 31 to 34.

6. The CAJ, at its seventy-fifth session<sup>1</sup>, noted that the TC, at its fifty-fourth session<sup>2</sup>, had requested the European Union, France and the Netherlands to prepare a new draft of document UPOV/INF/17 “Guidelines for DNA-profiling: Molecular Marker Selection and Database Construction (‘BMT Guidelines’)” for consideration at the eighteenth session of the BMT, as set out in document CAJ/75/13 “Report on developments in the Technical Committee”, Annex, paragraph 42<sup>3</sup>.
7. The TC, at its fifty-fifth session<sup>4</sup>, will consider whether to request that a draft of document UPOV/INF/17 be prepared for consideration by the TC, at its fifty-sixth session<sup>5</sup>.
8. Developments at the fifty-fifth session of the TC will be reported in document CAJ/76/2 “Report on developments in the Technical Committee”.

#### COOPERATION BETWEEN INTERNATIONAL ORGANIZATIONS

9. The background to this matter is provided in document CAJ/75/11 “Molecular techniques”, paragraphs 36 to 44.
10. The CAJ, at its seventy-fifth session, noted that the TC had agreed that UPOV and OECD make progress on matters previously agreed by the TC, as set out in document CAJ/75/13, Annex, paragraph 46<sup>6</sup>, namely:
  - (a) to develop a joint document explaining the principal features of the systems of the OECD, UPOV and ISTA;
  - (b) to develop an inventory on the use of molecular marker techniques, by crop, with a view to developing a joint OECD/UPOV/ISTA document containing that information, in a similar format to UPOV document UPOV/INF/16 “Exchangeable Software”, subject to the approval of the Council and in coordination with OECD and ISTA; and
  - (c) the proposal for the BMT to develop lists of possible joint initiatives with OECD and ISTA in relation to molecular techniques for consideration by the TC.
11. The TC, at its fifty-fourth session, agreed to invite ISTA to join the initiatives when in position to do so.
12. Developments concerning the matters above are presented in the following sections.

#### Joint document explaining the principal features of the systems of OECD, UPOV and ISTA

13. With regard to the possible development of a joint document explaining the principal features of the systems of OECD, UPOV and ISTA, as set out in paragraph 10(a) above, the CAJ, at its seventy-fifth session, noted that the TC had agreed to request the BMT to develop a joint document explaining the principal features of the systems of the OECD, UPOV and ISTA, as set out in document CAJ/75/13, Annex, paragraph 48<sup>7</sup>. The Office of the Union will prepare a draft for consideration by the BMT, at its eighteenth session, on the basis of relevant elements from the World Seed Partnership and the FAQ on the use of molecular techniques in the examination of DUS. Developments at the eighteenth session of the BMT will be reported to the TC, at its fifty-fifth session.

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<sup>1</sup> Held in Geneva, on October 31, 2018.

<sup>2</sup> Held in Geneva, from October 29 and 30, 2018.

<sup>3</sup> See document CAJ/75/14 “Report”, paragraph 63.

<sup>4</sup> To be held in Geneva, from October 28 and 29, 2019.

<sup>5</sup> To be held in Geneva, from October 26 and 27, 2020.

<sup>6</sup> See document CAJ/75/14 “Report”, paragraph 65.

<sup>7</sup> See document CAJ/75/14 “Report”, paragraph 67.

Inventory on the use of molecular marker techniques, by crop

14. With regard to the possible development of an inventory on the use of molecular marker techniques, by crop, as set out in paragraph 10(b) above, the CAJ, at its seventy-fifth session, noted that the TC had agreed to invite the BMT and the TWPs to develop an inventory on the use of molecular marker techniques, by crop, with a view to developing a joint OECD/UPOV/ISTA document containing that information, in a similar format to UPOV document UPOV/INF/16 “Exchangeable Software, as set out in document CAJ/75/13, Annex, paragraph 47<sup>8</sup>.

15. The TC, at its fifty-fifth session, will be invited to consider the following elements for the inventory on the use of molecular marker techniques, by crop, which had been developed in consultation with the OECD and on the basis of the comments by the TWPs and BMT, at their sessions in 2019:

Country or Intergovernmental Organization using molecular marker technique
Source [name of the Authority] and Contact details [email address]
Type of molecular marker technique
Source of the molecular marker and contact details [email address]
Availability of the marker [publicly available or a proprietary marker]
Status (i.e. in current use or under development)
Crop(s) for which the molecular marker technique is used and characteristic concerned [botanical name(s) and UPOV code(s) to be provided]
Purpose of the use of the molecular technique [UPOV model “Characteristic-Specific Molecular Markers”, UPOV model “Combining Phenotypic and Molecular Distances in the Management of Variety Collections”, Purity, Identity, Verification of conformity of plant material to a protected variety for the exercise of breeders’ rights, Verification of hybridity]
Whether the molecular marker technique was used as part of Seed Certification in the last two years [National certification, OECD certification] [relevant for OECD seed schemes]
Number of times the Authority used the molecular marker technique in the last 2 years
Whether the molecular marker technique is covered by [UPOV Test Guideline(s), UPOV TGP document(s), other UPOV document(s)] (please specify)
Whether the molecular technique is validated [yes to specify a particular organization or authority] [relevant for OECD seed schemes]

16. Subject to agreement by the TC at its fifty-fifth session, and in coordination with the OECD, a circular will be issued to request members of the Union to complete the survey as a basis to develop the inventory on the use of molecular marker techniques, by crop.

Lists of possible joint initiatives with OECD and ISTA in relation to molecular techniques

17. The BMT, at its eighteenth session, will be invited to develop lists of possible joint initiatives with OECD and ISTA in relation to molecular techniques for consideration by the TC at its fifty-fifth session. Developments at the eighteenth session of the BMT will be reported to the TC, at its fifty-fifth session.

## SESSION TO FACILITATE COOPERATION AT THE BMT AND TWPS

18. The background to this matter is provided in document CAJ/75/11 “Molecular techniques”, paragraphs 46 to 50.

19. The CAJ, at its seventy-fifth session, noted that the TC had agreed that the results of the coordination session in the BMT be reported to the other TWPs and that the TWPs be invited to undertake a similar session to build on the BMT outcomes and feed into the future work of the BMT, as set out in paragraph 50 of document CAJ/75/11<sup>9</sup>. The TC agreed that discussion groups should be formed for the main crops at each TWP to allow participants to exchange information on their work on biochemical and molecular techniques and explore areas for cooperation<sup>10</sup>.

<sup>8</sup> See document CAJ/75/14 “Report”, paragraph 66.

<sup>9</sup> See document CAJ/75/14 “Report”, paragraph 71.

<sup>10</sup> See document TC/54/31 “Report”, paragraph 281.

20. The outcomes of discussions at the TWPs, at their sessions in 2019, to explore areas for cooperation on the use of molecular techniques, will be reported to the BMT, at its eighteenth session.
21. The BMT, at its eighteenth session, will be invited to develop proposals on next steps to explore areas for cooperation in the use of molecular techniques.
22. Proposals developed by the BMT, at its eighteenth session, will be reported to the TC, at its fifty-fifth session, for consideration.
23. Developments on matters presented in this document at the TC, at its fifty-fifth session, will be reported to the CAJ in document CAJ/76/2 "Report on developments in the Technical Committee".

[Annex follows]

ANNEX

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.

[End of Annex and of document]