

Technical Committee

TC/55/INF/6

**Fifty-Fifth Session
Geneva, October 28 and 29, 2019**

Original: English
Date: October 21, 2019

MOLECULAR TECHNIQUES – MATTERS FOR INFORMATION

Document prepared by the Office of the Union

Disclaimer: this document does not represent UPOV policies or guidance

EXECUTIVE SUMMARY

1. The purpose of this document is to report on developments at the eighteenth session of the Working Group on Biochemical and Molecular Techniques, and DNA-Profiling in Particular (BMT) for information purposes.
2. Matters for consideration by the Technical Committee (TC) on the use of biochemical and molecular techniques in DUS examination and molecular techniques in relation to the Technical Working Parties (TWPs) and the Working Group on Biochemical and Molecular Techniques, and DNA-Profiling in Particular (BMT) are presented in documents TC/55/7 Corr. “Molecular techniques” and TC/55/7 Add. “Addendum to Molecular techniques”.
3. The structure of this document is as follows:

EXECUTIVE SUMMARY	1
DEVELOPMENTS AT THE EIGHTEENTH SESSION OF THE WORKING GROUP ON BIOCHEMICAL AND MOLECULAR TECHNIQUES, AND DNA-PROFILING IN PARTICULAR.....	1
Papers presented.....	1
Report on development of a software tool for marker selection using the traveling salesman algorithm	3
Date and place of next session.....	3
Future program	3

4. The following abbreviations are used in this document:

BMT: Working Group on Biochemical and Molecular Techniques, and DNA-Profiling in Particular
 TC: Technical Committee
 TWC: Technical Working Party on Automation and Computer Programs
 TWPs: Technical Working Parties

DEVELOPMENTS AT THE EIGHTEENTH SESSION OF THE WORKING GROUP ON BIOCHEMICAL AND MOLECULAR TECHNIQUES, AND DNA-PROFILING IN PARTICULAR

5. The BMT held its eighteenth session in Hangzhou, China, from October 16 to 18, 2019 (see document BMT/18/21 “Report”, paragraph 1).

Papers presented

6. The papers presented under each of the agenda items of the eighteenth session of the BMT were as follows:

Reports on developments in UPOV concerning biochemical and molecular techniques (document BMT/18/2)

Short presentations on new developments in biochemical and molecular techniques by DUS experts, biochemical and molecular specialists, plant breeders and relevant international organizations (oral reports by participants)

Report of work on molecular techniques in relation to DUS examination

Facilitating Distinctness, Uniformity and Stability testing of soybean varieties: development and validation of molecular marker and variety sampling methodologies (document BMT/18/8)

Facilitating Distinctness, Uniformity and Stability testing of soybean varieties: establishing criteria for the use of single nucleotide polymorphism data (document BMT/18/9)

Next generation variety testing for improved cropping on European farmland (InnoVar) (document BMT/18/12)

CPVO report on IMODDUS: latest developments (INVITE) and update on R&D projects (document BMT/18/14)

A simple SSR based identification system for sweet potato (document BMT/18/16)

Use of molecular markers for protection and varietal identification: state of the art in Argentina (document BMT/18/17)

What information is essential for "character-specific molecular markers" in Test Guidelines (document BMT/18/18)

Cooperation between international organizations (document BMT/18/4)

Horizontal methods for molecular biomarker analysis (document BMT/18/13)

OECD Seed Scheme: an international seed varietal certification system (document BMT/18/20)

International Seed Testing Association (document BMT/18/3)

Variety description databases including databases containing molecular data

Advances in the construction and application of DNA fingerprint database in maize (document BMT/18/6)

Management of databases and exchange of data and material

Methods for analysis of molecular data

Report on developments of a software tool for marker selection using the traveling salesman algorithm (document BMT/18/11)

The use of molecular techniques in examining essential derivation

The use of molecular techniques in variety identification

Applications of MNP marker in plant varieties protection (document BMT/18/15)

Association analysis of SSR markers and agronomic traits in soybean (document BMT/18/19)

Review of document UPOV/INF/17 "Guidelines for DNA-Profiling: Molecular Marker Selection and Database Construction" (documents BMT/18/10 and UPOV/INF/17/2 Draft 2)

Revision of document TGP/15 "Guidance on the Use of Biochemical and Molecular Markers in the Examination of Distinctness, Uniformity and Stability (DUS)" (document BMT/18/7)

Session to facilitate cooperation (document BMT/18/5)

Report on development of a software tool for marker selection using the traveling salesman algorithm

7. The BMT considered document BMT/18/11 and received a presentation by Mr. Barry Nelson (Seed Association of the Americas (SAA)), a copy of which would be provided as an addendum to BMT/18/11 (see document BMT/18/21 "Report", paragraphs 9 and 10).

8. The BMT agreed to invite members to test the software for the selection of panels of molecular markers for variety identification and report to the BMT, at its nineteenth session.

Date and place of next session

9. At the invitation of the United States of America, the BMT agreed to hold its nineteenth session in Alexandria, Virginia, jointly with TWC, during the week of September 21, 2020 (see document BMT/18/21 "Report", paragraph 73).

Future program

10. During its nineteenth session, the BMT planned to discuss the following items (see document BMT/18/21 "Report", paragraph 74):

1. Opening of the session
2. Adoption of the agenda
3. Reports on developments in UPOV concerning biochemical and molecular techniques (document to be prepared by the Office of the Union)
4. Short presentations on new developments in biochemical and molecular techniques by DUS experts, biochemical and molecular specialists, plant breeders and relevant international organizations (oral reports by participants)
5. Report of work on molecular techniques in relation to DUS examination (papers invited)
6. Cooperation between international organizations (document to be prepared by the Office of the Union)
7. Variety description databases including databases containing molecular data (papers invited)
8. Methods for analysis of molecular data, management of databases and exchange of data and material (papers invited)
9. The use of molecular techniques in examining essential derivation¹ (papers invited)
10. The use of molecular techniques in variety identification¹ (papers invited)
11. Confidentiality, ownership and access to molecular data¹ (papers invited)
12. Review of document UPOV/INF/17 "Guidelines for DNA-Profiling: Molecular Marker Selection and Database Construction"
13. Session to facilitate cooperation
14. Date and place of next session
15. Future program
16. Report of the session (if time permits)
17. Closing of the session

11. The BMT considered the organization of the TWC and BMT meetings on the same week. The BMT agreed with the TWC there was a duplication of content presented at the TWC and BMT meetings and agreed there should be a single opening and introductory parts for both meetings at the same time (see document BMT/18/21 "Report", paragraphs 75 and 76).

¹ Breeders' Day

12. The BMT agreed with the TWC that the above proposals could enable the allocation of time during the meeting for a technical visit.

[End of document]