

Technical Working Party for Vegetables

Sixtieth Session

Pacific Grove, United States of America, May 18 to 21, 2026

TWP/10/4**Original: English****Date: April 30, 2026****Technical Working Party on Testing Methods and Techniques**

Fourth Session

Cambridge, United Kingdom, June 2 to 5, 2026

Technical Working Party for Agricultural Crops

Fifty-Fifth Session

Seoul, Republic of Korea, June 15 to 18, 2026

Technical Working Party for Ornamental Plants and Forest Trees

Fifty-Eighth Session

Virtual meeting, July 6 to 9, 2026

Technical Working Party for Fruit Crops

Fifty-Seventh Session

Leipzig, Germany, September 7 to 10, 2026

MOLECULAR TECHNIQUES*Document prepared by the Office of the Union**Disclaimer: this document does not represent UPOV policies or guidance***EXECUTIVE SUMMARY**

1. This document reports on developments at UPOV in relation to the use of molecular markers, with focus on the following matters:

Confidentiality and ownership of molecular information

2. At their sessions in 2026, the Technical Working Parties (TWPs) are invited to propose topics and organize discussions on cooperation on the use of molecular information, such as the joint development of molecular markers, the selection of molecular markers for variety identification and management of variety collections.

3. Discussions on confidentiality and ownership of molecular information should be organized at the TWPs based on concrete cases and specific situations proposed by UPOV members.

Cooperation between International Organizations

4. Cooperation activities on molecular markers between UPOV and the Organisation for Economic Co-operation and Development (OECD) and the International Seed Testing Association (ISTA) are reported in this document, including (i) the possible harmonization of terms and definitions; (ii) the results of the survey of UPOV members on molecular markers used per crop; (iii) the possible establishment of common sets of molecular markers for variety identification; and (iv) joint meetings with the three organizations. Each of the cooperation activities is reported separately.

5. UPOV members will be invited to consider the information provided in this document as the basis for further discussing the collaboration activities with OECD and ISTA, including the possible establishment of common sets of molecular markers for variety identification.

6. The structure of this document is as follows:

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7. 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
TWF:	Technical Working Party for Fruit Crops
TWM:	Technical Working Party on Testing Methods and Techniques
TWO:	Technical Working Party for Ornamental Plants and Forest Trees
TWV:	Technical Working Party for Vegetables
TWPs:	Technical Working Parties

CONFIDENTIALITY AND OWNERSHIP OF MOLECULAR INFORMATION

Background

8. Since 2019, discussions on cooperation in relation to the use of molecular techniques include the request to address guidance on ownership and confidentiality of molecular information (see document [TC/55/7](#) “Molecular Techniques”). At its fifty-eighth session¹, the TC noted the concerns expressed by breeders’ organizations that molecular information used during the examination of a variety should not be shared by the authority that received the application without the permission of the breeder. The TC invited members and observers to report on existing policies on confidentiality of molecular information at the TWPs, at their sessions in 2023¹, 2024² and 2025³.

¹ TC, fifty-eighth session, held in Geneva, on October 24 to 25, 2022. See document TC/58/31 “Report”, paragraphs 48 to 50

² TC, fifty-ninth session, held in Geneva, on October 23 to 24, 2023.

³ TC, sixtieth session, held in Geneva, on October 21 to 22, 2024.

Existing guidance

9. The following guidance is currently provided by UPOV on confidentiality of molecular information:

(a) Document [UPOV/INF/15/4](#) “Guidance for Members of UPOV”, paragraph 38:

“38. As stated in Article 12, for the purposes of examination, the authority may require the breeder to furnish all the necessary information, documents or material. In that regard, authorities should give consideration to appropriate measures concerning confidentiality, for example in relation to pedigree information.”

(b) Document [TGP/5, Section 1/3](#) “Model Administrative Agreement for International Cooperation in the Testing of Varieties”, Article 4:

“(1) The Authorities shall take all necessary steps to safeguard the rights of the applicant.

(2) Except with the specific authorization of the Receiving Authority and the applicant, the Executing Authority shall refrain from passing on to a third person any material, including DNA, or molecular information, of the varieties for which testing has been requested.”

Developments at the Technical Committee at the session in 2025

10. The TC⁴, at its sixty-first session, noted discussions on confidentiality and ownership of molecular information at the TWP sessions in 2025, as provided in Annex I to this document.

11. The TC agreed to invite the TWPs to organize future discussions on confidentiality and ownership of molecular information based on concrete cases and specific situations.

12. The TC agreed to invite the TWPs to discuss cooperation on the use of molecular information, such as at the 2025 sessions of the TWO (joint development of molecular markers) and TWV (managing variety collections and variety identification).

13. The TC noted the “Policy on the status of plant material submitted for DUS testing purposes” reported by the European Union at the TWA, as provided in document SESSIONS/2025/6, paragraph 29 (available at: <https://cpvo.europa.eu/en/cpvo-policy-status-plant-material-used-dus-testing-purposes>). The TC noted that examples of policies and contracts for material submitted by the breeder were provided in document TGP/5, Section 11.

14. Following the TC session, the European Union requested the UPOV Office to update the policy currently provided in document TGP/5, Section 11 which will be put forward for adoption by the Council, at its sixtieth ordinary session, to be held on October 23, 2026.

Proposal

15. The TWPs are invited to propose topics and organize discussions on cooperation on the use of molecular information, such as the joint development of molecular markers, selection of molecular markers for variety identification and management of variety collections.

16. The TWPs are invited to propose topics and organize discussions on confidentiality and ownership of molecular information based on concrete cases and specific situations.

17. *The TWPs are invited to:*

(a) *note that the “Policy on the status of plant material submitted for DUS testing purposes” reported by the European Union will be included in a revision of document TGP/5, Section 11 “Examples of Policies and Contracts for Material Submitted by the Breeder”;*

⁴ TC, sixty-first session, held in Geneva, from October 20 to 21, 2025. See document TC/61/8 “Report”, paragraphs 57 to 60

(b) propose topics and organize discussions on cooperation on the use of molecular information, such as the joint development of molecular markers, selection of molecular markers for variety identification and management of variety collections; and

(c) propose topics and organize discussions on confidentiality and ownership of molecular information based on concrete cases and specific situations.

COOPERATION BETWEEN INTERNATIONAL ORGANIZATIONS

Background

18. The TC⁵, at its fifty-seventh session, agreed to propose the following topics for a future joint UPOV/OECD/ISTA workshop:

- (i) providing information on the use of molecular techniques in each organization;
- (ii) procedure for approval of biochemical and molecular methods in each organization; and
- (iii) possibilities for harmonizing terms, definitions and methods between UPOV, OECD and ISTA.

Harmonizing terms, definitions and methods between UPOV, OECD and ISTA

19. The TWM⁶, at its third session, considered possible joint activities with OECD and ISTA and the possible harmonization of terms, definitions and methods in relation to molecular techniques. The TWM agreed to invite the expert from France to coordinate discussions to organize relevant information on terms and definitions. The TWM noted the expression of interest of the experts from Argentina, China, Germany, Netherlands (Kingdom of the), the United Kingdom, CIOFORA and ISF to contribute to the exercise.

20. The TC⁷, at its sixty-first session, agreed to invite France, in collaboration with Argentina, China, Germany, Netherlands (Kingdom of the), the United Kingdom, CIOFORA and ISF, to advance work towards harmonizing terms and definitions on molecular techniques used in UPOV, for consideration by the TWM and the TC in 2026.

21. The TC noted that the OECD Seed Schemes had endorsed the collaboration with UPOV for possible harmonization of definitions and terms.

22. On March 27, 2026, the expert from France informed the UPOV Office that discussions were being organized to develop a list of relevant terms and definitions used in UPOV, and that a proposal would be developed for consideration by the TWM and the TC in 2026.

23. The TWPs are invited to note developments concerning the possible harmonization of terms, definitions and methods in relation to molecular techniques at UPOV, OECD and ISTA.

Updating the list of molecular markers used per crop

24. The TC⁸, at its sixty-first session, considered a proposal from the TWM and agreed to invite the Netherlands (Kingdom of) to coordinate the updating of the list of molecular markers per crop developed by UPOV, which was available at the webpage of the fifty-eighth session of the TC (see: https://www.upov.int/meetings/en/doc_details.jsp?meeting_id=67786&doc_id=586962).

⁵ TC, fifty-seventh session, held in Geneva, on October 25 to 26, 2021.

⁶ TWM, third session, held in Beijing, China, from April 28 to May 1, 2025. See document TWM/3/29 "Report", paragraphs 20 to 28.

⁷ TC, sixty-first session, held in Geneva, from October 20 to 21, 2025. See document TC/61/8 "Report", paragraphs 61 to 62

⁸ TC, sixty-first session, held in Geneva, from October 20 to 21, 2025. See document TC/61/8 "Report", paragraphs 63

25. On January 19, 2026, the Office of the Union issued Circular E-26/004 to all UPOV bodies with the survey on the use of molecular markers. The results of the survey were prepared in collaboration with the expert from the Netherlands (Kingdom of). A total of 39 members of the Union responded to the survey, from which 21 reported the use of molecular markers and 18 reported not using it. The summary of responses to the survey is as follows:

UPOV member	Use of Molecular markers (YES/NO)	UPOV member	Use of Molecular markers (YES/NO)
Argentina	YES	Latvia	NO
Armenia	NO	Netherlands (Kingdom of the)	YES
Austria	YES	Nigeria	NO
Belgium	NO	Peru	NO
Bolivia (Plurinational State of)	NO	Poland	YES
Brazil	YES	Republic of Korea	YES
Canada	YES	Serbia	NO
China	YES	Slovakia	YES
Colombia	NO	Singapore	NO
Croatia	NO	South Africa	NO
Czech Republic	YES	Switzerland	NO
Ecuador	NO	Tunisia	NO
Egypt	NO	Trinidad and Tobago	NO
European Union	YES	Ukraine	YES
Estonia	YES	United Kingdom	YES
Finland	NO	United States of America	NO
France	YES	Uruguay	YES
Germany	YES		
Hungary	YES	YES	21
Ireland	YES	NO	18
Italy	YES	TOTAL	39
Japan	YES		

26. The detailed results of the survey are presented as Annex II to this document. A report on the survey will be provided to the TWPs, at their sessions in 2026.

27. *The TWPs are invited to note:*

(a) *the results of survey on the use of molecular markers; and*

(b) *that a report on the survey will be provided to the TWPs, at their sessions in 2026.*

Common sets of molecular markers for variety identification

Background

28. The UPOV horizon scanning exercise summarized in the UPOV's Strategic Business Plan (SBP) for 2026-2029 (document C/59/14) has identified the increasing reliance on DNA analysis for variety identification purposes. It has also made a call for action for UPOV to develop standards in this field and explore means for data management and collaborations on data science activities.

Developments at the Technical Working Party on Testing Methods and Techniques in 2025

29. The TWM⁹ discussed the establishment of common sets of molecular markers for variety identification and agreed to invite UPOV, OECD and ISTA to further consider the challenges and opportunities of this initiative, such as crop(s), scale of harmonization (e.g. regional, global); and molecular marker-related aspects.

⁹ TWM, third session, held in Beijing, China, from April 28 to May 1, 2025. See document TWM/3/29 "Report", paragraph 28.

The TWM agreed that working with breeders could facilitate selecting marker sets representing those breeding programs.

30. Following the TWM session, the Annual Meeting of the OECD Seed Schemes, approved for the OECD Seed Schemes to collaborate with ISTA and UPOV to start working on the establishment of common sets of molecular markers for variety identification. The OECD Seed Schemes agreed to invite National Designated Authorities (NDAs) to provide the names of experts to start working on this topic.¹⁰

Developments at the Technical Committee in 2025

31. The TC¹¹, at its sixty-first session, endorsed the collaboration with OECD and ISTA to establish common sets of molecular markers for variety identification and invited the TWM to advance discussions on this topic.

32. The TC noted that OECD had approved the start of work to establish common sets of molecular markers for variety identification, in collaboration with ISTA and UPOV.

Proposal:

33. UPOV members are invited to present their experiences at the TWM with selecting and using molecular markers for variety identification. The experiences reported by UPOV members could be considered along with information from the survey on the use of molecular markers for discussion on possible objectives, milestones and the role of UPOV on the selection and validation of molecular markers for variety identification.

34. *The TWM is invited to consider:*

(a) *the experiences of UPOV members with selecting and using molecular markers for variety identification, along with information from the survey on the use of molecular markers; and*

(b) *possible objectives, milestones and the role of UPOV on the selection and validation of molecular markers for variety identification, in collaboration with OECD and ISTA*

35. *The TWA, TWF, TWO and TWV are invited to note discussions on the possible establishment of common sets of molecular markers for variety identification, in collaboration with OECD and ISTA.*

Information on the use of molecular techniques in each organization: possible joint meeting

36. The TC¹², at its sixty-first session, endorsed the proposal from the TWM¹³ to organize a joint meeting with participants from the UPOV, OECD Seed Schemes and ISTA Variety Committee to discuss cooperation on the use of molecular markers for the purposes of each organization. The TC agreed that the arrangements for a possible joint meeting would be consulted with future hosts of TWM sessions.

37. A joint workshop with OECD and ISTA is scheduled to be held during the fourth session of the TWM, to be held in Cambridge, United Kingdom, from June 2 to 5, 2026.

38. *The TWPs are invited to note that a joint workshop with UPOV, OECD and SITA is scheduled at the fourth session of the TWM, to be held in Cambridge, United Kingdom, from June 2 to 5, 2026.*

¹⁰ OECD Seed Schemes Annual Meeting, June 12-13, 2025. See document "Confirmation of outcomes".

¹¹ TC, sixty-first session, held in Geneva, from October 20 to 21, 2025. See document TC/61/8 "Report", paragraphs 64 to 65

¹² TC, sixty-first session, held in Geneva, from October 20 to 21, 2025. See document TC/61/8 "Report", paragraphs 66

¹³ TWM, third session, held in Beijing, China, from April 28 to May 1, 2025. See document TWM/3/29 "Report", paragraphs 27

MATTERS FOR INFORMATION

Guidelines for the validation of a new characteristic-specific molecular marker protocol as an alternative method for observation

Background

39. The TC¹⁴, at its sixtieth session, agreed to request the TWPs, at their sessions in 2025, to consider the proposal for guidelines for the validation of new characteristic-specific molecular marker protocol for DUS examination.

Developments at the Technical Committee in 2025

40. The TC¹⁵, at its sixty-first session, considered the methodology proposed and agreed on the importance of harmonized validation for new molecular markers proposed for inclusion in Test Guidelines as alternative methods. The TC agreed that guidance should allow for other methods that achieve the same result, provided they are also validated.

41. The TC discussed the situation described in paragraph 31 of the draft guidance on matters to be considered on the use of molecular markers that might be trade secrets and agreed that these situations should be considered on a case-by-case basis when developing characteristics for Test Guidelines.

42. The TC agreed to propose to the Council adopting the guidance for the validation of characteristic specific molecular markers as alternative methods for the assessment of characteristics in Test Guidelines, as set out in the Annex to document SESSIONS/2025/6, subject to linguistic checking by the Enlarged Editorial Committee (TC-EDC).

43. The TC-EDC, at its meetings held on January 13 and 15, 2026, considered the draft guidance and recommended for adoption by the Council, at its sixtieth session, to be held in Geneva on October 23, 2026, subject to editorial clarifications. The full text of the draft guidance is provided in document TWP/10/1 "Development of Guidance and Information Materials".

[Annex I follows]

¹⁴ TC, sixtieth session, held in Geneva, from October 21 to 22, 2024. See document TC/60/8 "Report", paragraphs 51

¹⁵ TC, sixty-first session, held in Geneva, from October 20 to 21, 2025. See document TC/61/8 "Report", paragraphs 54 to 56

OWNERSHIP AND CONFIDENTIALITY OF MOLECULAR INFORMATION
DEVELOPMENTS AT THE TECHNICAL WORKING PARTIES AT THEIR SESSIONS IN 2025

1. The TWO¹⁶, at its fifty-seventh session, agreed on the importance of utilizing DNA-based information for international cooperation in variety testing. The TWO considered how DNA-based information could be shared among UPOV members and noted the offer from breeders' organizations for the joint development of molecular markers that would not reveal the breeding strategies of individual breeders.
2. The TWO noted existing guidance on confidentiality of molecular information in UPOV documents UPOV/INF/15 "Guidance for members of UPOV" and TGP/5, Section 1 "Model administrative agreement for international cooperation in the testing of varieties". The TWO noted the proposal from the breeders' organizations for considering the document "Policy on the status of plant material submitted for DUS testing purposes" developed by the European Union as example for the future development of a common model.
3. The TWM¹⁷, at its third session, recalled UPOV guidance on confidentiality of molecular information provided in documents TGP/5, Section 1 "Model Administrative Agreement for International Cooperation in the Testing of Varieties" and INF/15 "Guidance for Members of UPOV". The TWM noted that no reports on confidentiality of molecular information had been reported to the TWM and agreed on the importance of safeguarding the confidentiality of parent lines and hybrid formulas. The TWM noted that a similar discussion was being held at OECD.
4. The TWV¹⁸, at its fifty-ninth session, noted that no reports on existing policies on confidentiality of molecular information had been reported in advance of the TWV session.
5. The TWV noted the report from Japan that was considering the use of DNA-based information as part of the information to be provided for plant variety protection. The TWV noted that Japan considered this information useful to support the exercise of breeders' rights.
6. The TWV noted the concern expressed by the breeders' organizations about revealing the sources of germplasm used by breeders in different breeding programs. The TWV agreed that breeders should be involved when selecting molecular markers for variety identification and managing variety collections, in particular when such information would be made publicly available.
7. The TWV recalled that the development of UPOV guidance was based on examples and experiences from UPOV members and observers. The TWV agreed that different approaches for discussion on confidentiality of molecular information should be considered, such as concrete cases and specific situations identified by the breeders' organizations.
8. The TWA¹⁹, at its fifty-fourth session, noted the reports from the European Union, Germany and the United Kingdom that their domestic policies on plant material and data used in DUS examination covered molecular information. The TWA noted that in the European Union, the technical questionnaire provided the opportunity for applicants to select information to be treated as confidential and that the policy on plant material in DUS testing was available online, as reported in document TWA/54/2 "Reports from members and observers" (see: <https://cpvo.europa.eu/en/cpvo-policy-status-plant-material-used-dus-testing-purposes>).
9. The TWA noted the reports from Brazil and Canada that no specific policy existed in those countries in relation to confidentiality of molecular information of plant material and data used in DUS examination. The TWA noted that Brazil and Canada did not request DNA based information from applicants.
10. The TWA discussed the possibility of issuing a survey for UPOV members to report on existing policies on confidentiality of molecular information. The TWA agreed that further discussion would be required on the scope and objectives of a survey, such as identifying relevant scenarios for increased engagement in discussions.

¹⁶ TWO, fifty-seventh session, held in Roelofarendsveen, Kingdom of the Netherlands, from March 31 to April 3, 2025. See document TWO/57/10 "Report", paragraphs 24 to 27.

¹⁷ TWM, third session, held in Beijing, China, from April 28 to May 1, 2025. See document TWM/3/29 "Report", paragraphs 63 to 64.

¹⁸ TWV, fifty-ninth session, held via electronic means, from May 5 to 8, 2025. See document TWV/59/19 "Report", paragraphs 27 to 32.

¹⁹ TWA, fifty-fourth session, held Arusha, United Republic of Tanzania, from May 19 to 22, 2025. See document TWA/54/7 "Report", paragraphs 17 to 21.

11. The TWF²⁰, at its fifty-sixth session, noted that UPOV members and observers were invited to report examples of policies on confidentiality and access to molecular data at the TWP sessions in 2025.

[Annex II follows]

²⁰ TWF, fifty-sixth session, held Bursa, Türkiye, from June 23 to 26, 2025. See document TWF/56/7 "Report", paragraphs 37 to 38.

TWP/10/4

ANNEX II

SURVEY ON THE USE OF MOLECULAR MARKER TECHNIQUES BY CROP

Please see the Excel spreadsheet for all the responses received

[End of Annex II and of document]