

**Technical Working Party for Agricultural Crops**

Forty-Sixth Session

Hanover, Germany, June 19 to 23, 2017

**TWP/1/2****Original:** English**Date:** June 9, 2017**Technical Working Party for Vegetables**

Fifty-First Session

Roelofarendsveen, Netherlands, July 3 to 7, 2017

**Technical Working Party for Ornamental Plants and Forest Trees**

Fiftieth Session

Victoria, Canada, September 11 to 15, 2017

**Technical Working Party for Fruit Crops**

Forty-Eighth Session

Kelowna, Canada, September 18 to 22, 2017

**Technical Working Party on Automation and Computer Programs**

Thirty-Fifth Session

Buenos Aires, Argentina, November 14 to 17, 2017

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**VARIETY DESCRIPTION DATABASES***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 concerning variety description databases since the sessions the Technical Working Parties (TWPs) in 2016.
2. The TWPs are invited to:
  - (a) note the information on presentations on databases made at the BMT, TWC and TWV at their sessions in 2016, and the as set out in paragraphs 9 to 24 of this document;
  - (b) note that the TC agreed that UPOV might be able to facilitate cooperation in the establishment of common databases containing molecular information by the provision of training and sharing of information;
  - (c) note that the TC agreed on the value of inviting the contribution of breeders and academic institutions to UPOV's work on the constitution and maintenance of databases;
  - (d) consider the information provided to the TWPs, at their sessions in 2017, on variety description databases and on existing databases containing morphological and/or molecular data;
  - (e) note that Information collected on existing databases containing morphological and/or molecular data could be included in the GENIE database, subject to the availability of resources for the modification of the GENIE database.
3. The TWC is invited to consider the information provided on experience of members on the application of databases, development of new ideas regarding the management of information and guidance on the management of databases, to be presented to the TWC, at its thirty-fifth session.

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5. The following abbreviations are used in this document:

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
TWPs:	Technical Working Parties
TWV:	Technical Working Party for Vegetables

## BACKGROUND

6. Developments prior to 2016 are presented in documents TWA/45/6, TWC/34/6, TWF/47/6, TWO/49/6, TWV/50/6 and BMT/15/4 “Variety description databases”, respectively.

## DEVELOPMENTS IN 2016

### Working Group on Biochemical and Molecular Techniques and DNA-Profiling in Particular

7. At its fifteenth session, held in Moscow, Russian Federation, from May 24 to 27, 2016, the BMT received a report by the Office of the Union on developments in UPOV concerning Variety Description Databases, on the basis of document BMT/15/4 (see document BMT/15/28 Rev. “Revised Report”, paragraphs 16 and 17).

8. The BMT agreed that it would be important within UPOV to consider how to facilitate cooperation for the establishment of common databases with molecular information. However, it noted that the cooperation would need to be initiated between UPOV members in the first instance.

### *Towards durable DNA databases to support DUS testing*

9. The BMT received a presentation by Ms. Hedwich Teunissen (Netherlands), based on document BMT/15/16 “Towards Durable DNA Databases to Support DUS Testing” (see document BMT/15/28 Rev. “Revised Report”, paragraphs 44 and 45).

10. With regard to confidentiality of molecular data, the BMT noted the guidance on plant material provided in document UPOV/TGP/5, Section 1. It noted that the guidance in TGP/5 might be a suitable basis also for molecular data (see document TWP/1/9 “Confidentiality of molecular information”).

### *Advances in the Construction and Application of DNA Fingerprint Databases in Maize*

11. The BMT received a presentation by Ms. Zi Shi (China), based on document BMT/15/20 “Advances in the Construction and Application of DNA Fingerprint Database in Maize” (see document BMT/15/28 Rev. “Revised Report”, paragraph 46).

### Technical Working Party on Automation and Computer Programs

12. The TWC, at its thirty-fourth session, held in Shanghai, China, from June 7 to 10, 2016, considered document TWC/34/6 “Variety description databases” (see document TWC/34/32 “Report”, paragraphs 60 to 64).

13. The TWC received a presentation by an expert from the Netherlands on “Naktuinbouw application and information database: Integrated IT-tool to manage applications, requests, trials, reports and variety collections”, a copy of which is reproduced in the Annex to document TWC/34/22.

14. The TWC noted that it was important to take the cost of maintenance into account when creating a database.

#### *Management of databases*

15. The TWC noted the experience of France on the construction and management of a platform for DUS data (GEMMA Platform). The TWC also noted the experience of Germany in sharing a database with France and Spain of morphological characteristic data of maize varieties using unique identifiers and the use of an interface to exchange data.

16. The TWC suggested that guidance on the development and management of databases may be of benefit.

17. The TWC agreed to invite presentations from members on experiences with using databases, and proposals for guidance on the management of databases to be presented to the TWC at its thirty-fifth session.

18. The TWC welcomed the “Database to search for TWC working documents” that was developed by the experts from Germany and distributed to participants to the TWC session as a CD-ROM. The TWC noted that the database was updated every year with TWC documents tagged with indexed keywords. The TWC agreed that the database provided a useful search mechanism for scanned TWC documents.

#### *Bio-informatics*

19. The TWC received a presentation by an expert from the Netherlands on “Bioinformatics”, a copy of which is reproduced in the Annex to document TWC/34/24. The TWC agreed that bioinformatics was a field of work closely related to the mandate of the TWC (see document TWC/34/32 “Report”, paragraph 79).

#### *Experiences in the development of databases*

20. The TWC invited members to present their experiences in the development of databases, including the main elements to be taken into consideration, to be considered during the thirty-fifth session of the TWC (see document TWC/34/32 “Report”, paragraph 80).

#### *Search in multiple databases using a portal*

21. The TWC received a presentation by an expert from the Netherlands on “Search Plant: A search portal to facilitate tracking and tracing of ornamental varieties”, a copy of which is reproduced in the Annex to document TWC/34/20 (see document TWC/34/32 “Report”, paragraphs 81 and 82).

22. The TWC noted that the Search Plant portal ([www.searchplant.eu](http://www.searchplant.eu)) could search three independent databases with a single search function. The TWC noted the data structure and information technology requirements for other databases to join the portal and noted the plans for identification of similar varieties in the future by recognition of images.

### Technical Working Party for Vegetables

23. The TWV, at its fiftieth session, held in Brno, Czech Republic, from June 27 to July 1, 2016, received a presentation on “Facilitating development of databases for DUS examination” by an expert from France. A copy of the presentation is provided in document TWV/50/6 Add. Rev. (see document TWV/50/25 “Report”, paragraphs 114 to 116).

24. The TWV considered the idea on how to develop databases and expressed interest in sharing data between UPOV members within the same geographical region, however expressed some concerns about the efforts needed (e.g. time and cost) for the result expected. Therefore the TWV requested to have more experiences reported at its fifty-first session. The expert from Germany offered to report on the potato database currently under development within European Union, as a CPVO project by 9 Examination Offices.

#### DEVELOPMENTS IN 2017

##### Technical Committee

25. The TC considered document TC/53/9 “Variety description databases” (see document TC/53/31 “Report”, paragraphs 175 to 181).

26. The TC noted the presentations on databases made at the BMT, TWC and TWV at their sessions in 2016, as set out in document TC/53/9, paragraphs 9 to 35.

27. The TC noted that the TWC had invited members to present their experiences in the development of databases, at its thirty-fifth session.

28. The TC noted that the BMT had agreed that facilitating cooperation for the establishment of common databases containing molecular information was an important consideration for UPOV but would need to be initiated between UPOV members in the first instance, as set out in document TC/53/9, paragraph 10.

29. The TC noted the series of challenges for the establishment of common databases containing molecular information and agreed that UPOV might be able to facilitate cooperation in this area by the provision of training and sharing of information.

30. The TC agreed to request the Office of the Union to collect data on existing databases with morphological and/or molecular data. The TC agreed that the information collected should be included in the GENIE database and requested the Office of the Union to plan for the modification of the GENIE database according to available resources.

31. The TC noted that breeders and academic institutions had extensive experience on the constitution and maintenance of databases and agreed on the value of inviting their contribution to UPOV’s work in that regard.

32. The TC agreed that the guidance on plant material provided in document UPOV/TGP/5, Section 1 would be a suitable basis also for molecular data and requested the Office of the Union to propose guidance on confidentiality of molecular information for inclusion in document UPOV/TGP/5, Section 1, on that basis (see document TWP/1/9 “Confidentiality of molecular information”).

33. On May 16, 2017, the Office of the Union issued UPOV Circular E-17/082 inviting members to provide information and/or make presentations to the TWPs, at their sessions in 2017, on variety description databases and on existing databases containing morphological and/or molecular data. Information collected on existing databases containing morphological and/or molecular data could be included in the GENIE database, according to available resources for the modification of the GENIE database.

34. UPOV Circular E-17/082, issued on May 16, 2017, also invited members to present their experiences on the application of databases, development of new ideas regarding the management of information and guidance on the management of databases.

35. *The TWPs are invited to:*

(a) *note the information on presentations on databases made at the BMT, TWC and TWV at their sessions in 2016, and the as set out in paragraphs 9 to 24 of this document;*

*(b) note that the TC agreed that UPOV might be able to facilitate cooperation in the establishment of common databases containing molecular information by the provision of training and sharing of information;*

*(c) note that the TC agreed on the value of inviting the contribution of breeders and academic institutions to UPOV's work on the constitution and maintenance of databases;*

*(d) consider the information provided to the TWPs, at their sessions in 2017, on variety description databases and on existing databases containing morphological and/or molecular data;*

*(e) note that Information collected on existing databases containing morphological and/or molecular data could be included in the GENIE database, subject to the availability of resources for the modification of the GENIE database.*

*36. The TWC is invited to consider the information provided on experience of members on the application of databases, development of new ideas regarding the management of information and guidance on the management of databases, to be presented to the TWC, at its thirty-fifth session.*

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