

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

BMT/17/11

**Seventeenth Session  
Montevideo, Uruguay, September 10 to 13, 2018****Original:** English  
**Date:** August 31, 2018**CONSTRUCTION OF A EUROPEAN POTATO DATABASE WITH VARIETIES OF COMMON  
KNOWLEDGE AND ITS IMPLEMENTATION IN THE POTATO DUS TESTING SYSTEM  
PART I: CONSTRUCTION, MAINTENANCE AND USE OF THE COMMON DATABASE\****Document prepared by an expert from Germany**Disclaimer: this document does not represent UPOV policies or guidance*

1. The development of an European Potato Database started with a first Community Plant Variety Office (CPVO) co-financed R&D project in 2006-2008 carried out by the United Kingdom, the Netherlands, Germany and Poland. Morphological descriptions, lightsprout pictures and molecular profiles with 9 SSR markers were collected for about 900 varieties from the European Union Common Catalogue. Further projects were carried out to set up, maintain and use a common database with all nine European examination offices (Austria, Czech Republic, Germany, Spain, Ireland, the Netherlands, Poland, Slovakia and the United Kingdom).

2. The following main steps were followed:

- Construction of the database, definition of content
- Molecular profiling of new applications
- Collection and profiling of varieties of the EU Common Catalogue which were still missing in the database
- Development of procedures for feeding and maintaining the database
- Implementation of the database into the DUS systems of examination offices
- Conclusion of agreements on continued contribution to the database, rights and obligations of partners, confidentiality aspects

3. The partners agreed on the varieties and related administrative data to be included in the database. After performance of several ringtests, morphological characteristics with sufficiently harmonized descriptions were identified for the database. In addition, standardized pictures of lightsprouts were included.

4. Procedures for the generation of molecular data including sampling have been developed.

5. The common database was constructed using the GEMMA-software developed by GEVES, France, in the framework of the CPVO co-funded R&D project "Management of peach tree reference collections" (see document TWC/29/24).

6. Each examination office is responsible to upload and update its own administrative, morphological and molecular data as well as the lightsprout pictures. The examination offices can allow specific access to the own data per variety, partner and data type (phenotypic and/or molecular and/or picture).

7. The future implementation of the database depends on the national DUS systems of potato. It was noted that despite the ringtests morphological variety descriptions from different countries are not sufficiently consistent. The national reference collections including the in-house descriptions remain most important. But in general, these reference collections cannot include all varieties of common knowledge.

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\* Part II "Generation of molecular data", prepared by experts from the United Kingdom and the Netherlands, is presented in document BMT/17/12

In particular, the molecular marker information in the European Potato Database provides an efficient tool to identify varieties which should be added to the national reference collection. Varieties not in the reference collection but with a high genetic similarity to a candidate variety can be added to the DUS growing trial. The risk to miss similar varieties will decrease.

8. The CPVO co-financed R&D project ended in 2017. From 2018 onward, the European Potato Database will be maintained, used and improved according to the conditions defined in a partnership agreement concluded between the nine examination offices and the CPVO. The partnership agreement specifies rights and obligations of partners, confidentiality aspects and modalities of cooperation.

9. The maintenance and use of the database comprising most varieties in the common catalogue will increase the quality of DUS decisions and will contribute to strengthen the system. Potential savings in the performance of growing trials depend on the national DUS systems. For the time being, most examination offices do not expect fundamental changes in the field trials.

10. The establishment and maintenance of the European Potato Database activated sustainably the cooperation between the examination offices entrusted by the CPVO for DUS testing of potato. It can be considered as a model for a common Database. The experience in the project shows that cooperation between 10 partners requires continued coordinative work but it enables a better level of harmonization and exchange of information.

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