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This report describes the activities carried out by IPK in 2017 for hosting and maintaining the European search catalogue for plant genetic resources (EURISCO), and for coordinating the EURISCO network.

Content

1   EURISCO development

In 2017, EURISCO was further developed in accordance with its work plan. The following activities were carried out:

1.1   Extension of intranet support mechanisms for National Inventories (permanent activity)

1.1.1   Improved AEGIS support

Based on preliminary works in 2016, the AEGIS support was further improved in 2017. Procedures for checking the AEGIS status in case of an accession removal and/or de-flagging were embedded into the EURISCO intranet. The AEGIS status of accessions is now being checked automatically and in case of de-flagging National Inventory Focal Points (NFPs) are asked to provide a reason to be sent to the ECPGR Secretariat.

1.1.2 Taxonomy checks

In order to improve the quality of taxonomic data, the EURISCO coordination raised additional funding for the one-year project "EURISCO taxonomy" (May 2017 – April 2018). The necessary database structures as well as procedures for mapping taxonomic terms from EURISCO onto taxonomic repositories, such as GRIN and Mansfeld, were developed. Once completed, during each data upload to EURISCO a taxonomy mapping will be performed automatically, thus providing suggestions in case of unclear taxonomic terms. In addition, the taxonomy mappings will also be used for improving the web search functionality in order to enable users to search material on taxa via synonyms, including similarity search. Presently, a prototype of an improved web search functionality is being developed. The project is funded by ECPGR thanks to a contribution from the German Federal Ministry of Food and Agriculture.

1.1.3 How-to documents

How-to documents (handbooks) for both passport and C&E data uploads by NFPs have been developed comprising step-by-step instructions as well as assistance for troubleshooting. These documents are available at the EURISCO intranet only.

1.1.4 Additional C&E data upload procedure

An additional procedure for uploading C&E data to EURISCO, which was developed for and approved by the ECPGR Steering Committee in August 2017, was fully implemented and tested. This procedure provides an additional option of uploading C&E data by enabling data provider institutions to directly submit data to EURISCO.

1.2 Extension of functionality of the public EURISCO application (permanent activity)

1.2.1 Gathering of user feedback

A user survey was conducted among the National Inventory Focal Points/National Coordinators in order to gather structured feedback and to collect new requirements for the public EURISCO web application. Feedback was received from 17 persons, whereby the overall response was quite positive. The main feature requests are

- improvements of the search and filter possibilities,
- adding accession images,
- standardise crop names,
- adding additional reports,
- additional statistics for C&E data.

1.2.2 Implementation of improvements

First improvements of the filter possibilities (e.g. case insensitive searches) were already implemented; more improvements of the search interface are being implemented in the frame of the "EURISCO taxonomy" project (see above).

As requested by the EURISCO Advisory Committee, the date of last update of passport data as well as instructions for obtaining material from the holding genebanks were added to the web interface.

Further feature requests are being evaluated for feasibility and will be included into the work plan for 2018.

1.3 Implementation of MCPD2

This task was one of the main activities of the EURISCO development in 2017. Until then, the EURISCO passport data exchange format was still based on MCPD1 (2001), including some extra fields. However, the MCPD evolved since then; the current version (v2.1) was published end of 2015 and includes several additional descriptors. At the 2016 Advisory Committee meeting in Angers, France, it was decided to implement MCPD2 for EURISCO (including additional descriptors).

In 2017, the EURISCO infrastructure was updated to fully support the MCPD version 2.1. This included changes of the database schema, upload and check procedures as well as the public web interface. After finishing the necessary tests and consultations with FAO with regard to the harmonisation of the MCPD and EURISCO format, the final changeover took place in December 2017. Henceforward, EURISCO will only accept data in the MCPD v2.1 format plus four EURISCO-specific descriptors.

1.4 Documentation and planning of the next steps

The developments described in sections 1.1–1.3 were specified and all developments were documented.

2 EURISCO coordination

2.1 EURISCO network maintenance and coordination of the EURISCO development

As a continuous activity, the contact to (potential) EURISCO stakeholders was also intensified in 2017 in order to demonstrate the potentials of this common European approach.

The third regional EURISCO training workshop was held in Gatersleben, Germany, 12–14 September 2017, and focussed on participants from the Central European region. It was organised in collaboration with the Leibniz Institute of Plant Genetics and Crop Plant Research (IPK) and brought together 14 participants. Besides basic training for National Inventory Focal Points, the focus of the workshop was on increasing the volume of characterisation and evaluation (C&E) data records in EURISCO. The presentations given during the workshop can be found at the workshop website. [link]

The applicability of EURISCO in the context of phenotypic data of *Lolium perenne* was presented at the conference "Breeding Grasses and Protein Crops in the Era of Genomics", Vilnius, Lithuania, 11–14 September 2017.

A talk on EURISCO was given at the 13th International Symposium on Integrative Bioinformatics, 22–23 June 2017, Odense, Denmark, in order to strengthen the connection with the bioinformatics community.

EURISCO was presented by a talk at the workshop "Private Public Partnerships for the use of Plant Genetic Resources for Food and Agriculture", Bonn, Germany, 7–9 June 2017.

A poster on EURISCO was presented at the 8th International Triticeae Symposium in Wernigerode, Germany, 12–16 June 2017.

Another poster was shown at the EUCARPIA Conference in Montpellier, France, 8–11 May 2017.

The bi-annual EURISCO newsletter was sent around in August and December 2017, respectively. This is considered very important for providing feedback to the EURISCO users.

In 2017, the update frequency of National Inventory datasets could be increased significantly. In total, 60 productive updates of National Inventory datasets were performed, either completely or in parts.

Within the last 12 months, the number of accessions increased by 121,523, reaching a total of 1,964,062 accessions from 43 National Inventories and 380 individual holding institutions by 31 December 2017. These accessions represent 6,317 unique genera and 42,974 species, respectively.

During the same period, the number of characterisation and evaluation (C&E) data records rose by 197,361, reaching a total of 624,963. So far, C&E data were provided by six countries – Germany, Latvia, The Netherlands, Poland, Romania and the United Kingdom (in alphabetical order).
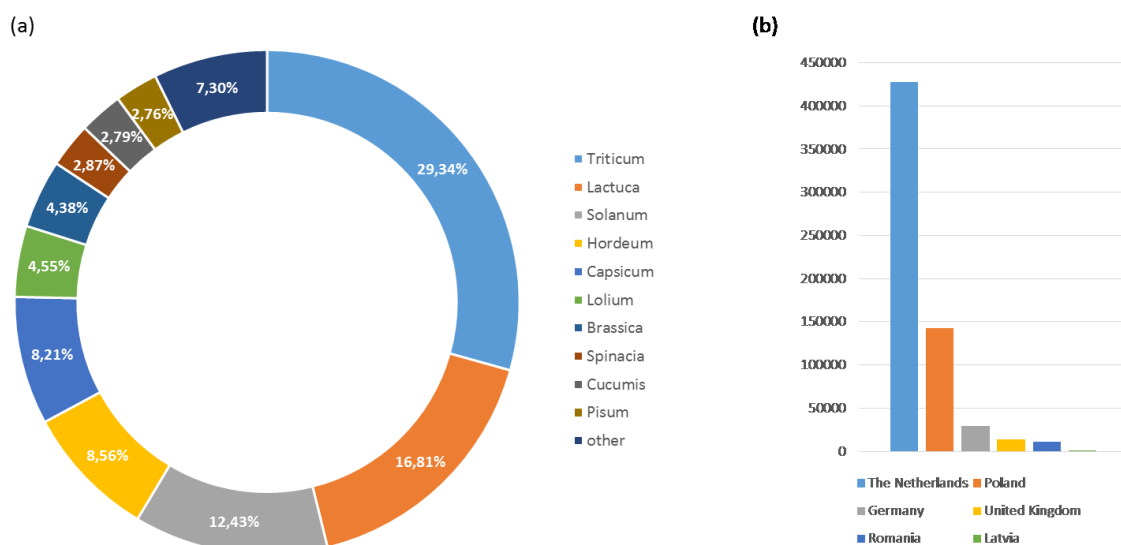

Fig. 1: Overview of C&E data in EURISCO, showing (a) the percentage of C&E data records by genus and (b) the number of records provided by the six countries.

Much effort was invested into providing a helpdesk "behind the scenes". Direct, personal communication took place with National Inventory Focal Points and National Coordinators (e.g. support for updates, provision of specific database queries and special data export formats, discussion about future developments).

2.2 Participation in project proposals

The EURISCO coordination provided substantial legwork to the preparation of project proposals (Horizon2020 and others) aiming at acquiring additional funding for developing certain aspects of EURISCO. The Horizon2020 proposal "Farmer's Pride" with the participation of the EURISCO coordination was approved and officially started in November 2017. This project is being coordinated by the University of Birmingham and focusses on the development of a network of *in situ* sites and stakeholders. The task of the EURISCO coordination will be the development of a concept for the

extension of EURISCO for *in situ* data. Therefore, in 2018 an inventory of data to be integrated will be compiled.

In addition, the EURISCO coordination is involved in the ongoing projects "EURISCO taxonomy" (see section 1.1) and "EUCLEG" (see 2016 activity report).

Further proposals are still under development/evaluation.

In the frame of two ECPGR Grant Scheme (second call) Activities, the European Central Crop Databases (ECCDBs) managed by the ECPGR Forages and Barley Working Groups, respectively, were used to identify potential gaps in EURISCO. The concerned National Inventory Focal Points (NFPs) were informed about the results and asked for checking as well as for providing the missing information. So far, 19 NFPs responded. There are different reasons why those accessions were missing from EURISCO, e.g. accessions already contained in EURISCO but with changed identifiers; accessions not available anymore; really missing accessions. Emerging from these activities, several new datasets were provided and will be provided to EURISCO.