Report of the EURISCO Training Workshop 2021

National Focal Points Training Workshop

10–12 November 2021, online meeting

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GenRes Bridge

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INTRODUCTION

The European Search Catalogue for Plant Genetic Resources (EURISCO) provides a central entry point for searching for material conserved across Europe and beyond. In addition to passport data, the dataset also includes phenotypic observations. Currently, EURISCO documents more than two million accessions from about 400 collections. EURISCO is based on a network of 43 member countries.

Within the EURISCO network, regular training workshops are held for EURISCO's data providers – the National Focal Points (NFPs). Between 2015 and 2018, four workshops were held on an annual basis, after which it was decided to switch to biennial workshops. A workshop was therefore planned for 2020, to be held in cooperation with the Institute for Plant Genetic Resources 'K. Malkov' in May in Plovdiv, Bulgaria. Within the framework of the EU project GenRes Bridge, funding was obtained to finance the travel costs of a larger number of participants.[1]

Due to the COVID-19 pandemic, the workshop first had to be postponed to autumn 2020 and then cancelled altogether. Unfortunately, it was also not possible to hold the workshop as planned in 2021. However, given the importance of providing regular training opportunities, it was decided to hold a training workshop as an online-only event on a trial basis.

The workshop was organized and hosted by the EURISCO developer, Pragna Kotni, and the EURISCO coordinator, Stephan Weise, and brought together 24 participants. Besides providing the basic training elements, the workshop focused on increasing the volume of phenotypic data records in EURISCO as well as on the data quality and the unique identification of plant genetic resources (PGR) accessions. Moreover, the prototype of the new public EURISCO web interface was presented. The participants mainly comprised newly appointed National Focal Points who did not participate in a EURISCO workshop before, and those who had phenotypic data to contribute.

Stephan Weise opened the workshop and welcomed the participants. Nikolaya Velcheva and her colleagues from the Bulgarian genebank were thanked for the time and effort they put into organizing the workshop, originally planned for 2020. Thanks were also expressed to the EU Commission for funding the workshop within the frame of the GenRes Bridge project and to the ECPGR Secretariat for their assistance in the logistics of the workshop. The meeting was structured in plenary sessions and hands-on sessions, in which the involvement of participants was expected.

All participants were asked to provide a short self-introduction. Stephan Weise then introduced the agenda of the meeting as well as the expectations from the organizers' point of view, and asked for the expectations of the participants. The expectations can be summarized as follows:

- Provision of training on importing both passport data and phenotypic data in the EURISCO system
- Raising awareness of Digital Object Identifiers (DOIs) as a means of uniquely identifying PGR accessions
- Increasing the update frequency and the quality of EURISCO data
- Obtaining feedback from data providers

[1] This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 817580.

- Strengthening collaboration through personal interactions.

PLENARY PRESENTATIONS

The following presentations were given during the workshop. The main points addressed are listed below each title. The presentations are available on the ECPGR workshop webpage.

EURISCO – The European Search Catalogue for Plant Genetic Resources

by Stephan Weise

- Background information about EURISCO – history and intention
- Development of EURISCO and data flow
- Overview about data volume and taxonomic composition
- Architecture of the EURISCO infrastructure
- Search and filter options for end users
- International integration of EURISCO
- Participation in project consortia related to EURISCO
- Results from the EURISCO taxonomy project
- Current and planned developments

Digital Object Identifiers (DOI) for plant genetic resources: Possibilities/benefits and their support through EURISCO

by Stephan Weise

- Unique identification of PGR accessions – background and limitations
- Specific challenges for aggregator systems, such as EURISCO or Genesys
- Need for widely accepted, unique and stable identifiers for PGR accessions → permanent unique identifiers (PUIDs)
- Use of Digital Object Identifiers (DOIs) as PUIDs – advantages and disadvantages
- Assignment of DOIs for PGR accessions – illustration of different options
- Overview of DOI use in EURISCO
- Specific focus on the DOI registration service provided by EURISCO in close collaboration with the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA)

Passport data: Gaps, pitfalls and data quality

by Stephan Weise

- Definition of data quality and metrics for measuring it
- Presentation of four selected metrics
    - Correctness
    - Completeness
    - Reliability
    - User expectation conformity
- Best practices and examples for improving data quality
    - Syntactic and semantic passport data checks in EURISCO
    - Preparatory steps to be performed by the data providers and tools to support
        - Check of coordinates (land or water/within or outside country border)

        - Correctness of taxonomic terms (different taxonomic schools, typos etc.)
        - Completeness of passport information (per descriptor/passport completeness index)
- Development of completeness of passport data in EURISCO over the years
- Data gaps in EURISCO
- Example of EURISCO taxonomy backbone

Passport data updates

by Pragna Kotni and Stephan Weise

- Introduction of EURISCO intranet
- Procedure for updating passport data in EURISCO
    - Basic checks and file upload
    - Data integrity checks
    - Review of check results
    - Approve/rework data
- Incremental vs. full updates
- Taxonomy mapping against public repositories
- AEGIS status checks
- Live demo of new uploader interface

Phenotypic data in EURISCO

by Stephan Weise

- Challenges on phenotypic data
- Current EURISCO approach
- Description of data exchange templates
- Procedure for updating phenotypic data in EURISCO
    - File upload
    - Data integrity checks
    - Review of check results
    - Approve/rework data
- Additional upload procedure – delegation of upload to collection curators and approval by NFP
- Overview of phenotypic data in EURISCO
- Towards harmonization of data

EURISCO public web interface – new prototype

by Pragna Kotni

- Presentation of general features
- Search and filter options, e.g. faceted search
- Indices of taxonomic terms and harmonised crop names
- Reports and graphics
- Live demo of new public web interface

HANDS-ON SESSIONS

During the workshop, two hands-on sessions for preparing and uploading data to EURISCO were performed. The aim of the hands-on sessions was to train the National Focal Points for:

- Preparing and uploading National Inventory datasets (passport data, phenotypic data)
- Running integrity checks
- Interpreting the results.

Due to the special situation of a purely online training, it was unfortunately not possible to use a separate training room this year. However, it was possible for participants to upload data via the web interfaces for NFPs and to review the results of the data integrity checks. Via screen sharing, it was possible to assist with difficulties in preparing the input files as well as in evaluating the check reports.

In preparation for the workshop, the participants had been asked to bring some data of their National Inventory datasets in order to practise the upload and to apply the EURISCO data integrity checks onto these data. Some test data was provided on request.

User guides for uploading passport data as well as phenotypic data to EURISCO were prepared beforehand and were provided to the participants. These guides are also available from the EURISCO intranet.

Passport data

The hands-on session started with a presentation about the EURISCO intranet. The procedure for updating National Inventory passport data was explained step by step. Special attention was paid to the newly developed upload tool, which is now fully integrated into the EURISCO intranet. With this, data can be uploaded directly from MS Excel™ files. It was demonstrated how data integrity checks are performed and how their results should be interpreted. In addition, details were given about the automatic checks of the AEGIS status of EURISCO accessions as well as about the automatic mapping of the provided taxonomic terms against two public repositories – GRIN taxonomy and Mansfeld taxonomy, respectively. Finally, it was pointed out once again that the harmonization of the EURISCO data exchange format with the current version of the Multi-Crop Passport Descriptors (MCPD 2.1) has resulted in some changes to the descriptor names.

Over the course of the session, passport datasets of several participants were used for demonstrating EURISCO updates. The participants received assistance in correctly formatting data files as well as in interpreting integrity errors. It was reminded again that the EURISCO intranet supports incremental updates, as a complementary way to upload data when it is not necessary to change all the information contained in the National Inventory.

Phenotypic data

A presentation gave the participants background information on the challenges associated with the exchange of phenotypic data and introduced the EURISCO approach. The data model and detailed information on the fields of the five templates (GENOTYPE, DATASET, EXPERIMENT, TRAIT and SCORE) and their use were explained. The procedure for uploading phenotypic data into EURISCO was demonstrated by showing the individual steps of data import and data checking one after the other, followed by the interpretation of the check results.

Afterwards, the workshop participants actively made use of the possibility of uploading phenotypic datasets. Occurring errors (syntactic and semantic) were explained; solutions were proposed.

DISCUSSIONS AND CONCLUSIONS

The participants engaged in vivid discussions, which are summarized below, grouped by topic.

Digital Object Identifiers

After the presentation of the concept of DOIs for plant genetic resources, there were several questions about the procedure and the responsibility of handling the metadata in the different approaches.

DOIs can be assigned by genebanks themselves, for example through membership in the DataCite consortium. This allows greater freedom in the assignment of DOIs, but also results in higher costs for implementation (registration/update). In addition, the DOI landing pages have to be created and maintained.

A very good alternative is to use the infrastructure of the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA). The ITPGRFA has developed a GLIS-DOI portal that enables genebanks to register PGR accessions for a DOI free of charge. The landing pages are created and maintained by the ITPGRFA, but the genebanks are still responsible for forwarding changes of DOI metadata to the GLIS-DOI portal. This service is being used by more and more genebanks worldwide.

A third option is to use the DOI service provided by the EURISCO coordination in close cooperation with the ITPGRFA. The EURISCO coordination can register PGR accessions for DOIs with the GLIS-DOI portal at the request of an NFP and on behalf of a genebank. Due to the regular updates of passport data in EURISCO, it is possible to automatically forward changes of DOI metadata to the GLIS-DOI portal without the respective genebank having to take action separately. This service is limited to accessions documented in EURISCO.

In addition, there was positive feedback from users who have already used the EURISCO DOI service.

Improvement of data quality

Following the presentation on the quality of passport data, the completeness and correctness of the data were discussed in particular. Among other things, the group discussed about collecting site coordinates and for which type of material (biological status) these are useful and for which they are not.

There was also some discussion about indicating the country of origin of accessions when these countries no longer exist (e.g. former Soviet Union or former Yugoslavia). It was pointed out that in EURISCO, in addition to the currently valid ISO3 country codes, a list of outdated codes is also maintained. This makes it possible to continue to work with formerly valid codes if it is not clearly possible to assign current codes, especially in the case of older accessions.

In connection with the taxonomic backbone implemented in EURISCO, it was asked why the mapping of taxonomic terms is done against GRIN taxonomy and Mansfeld taxonomy but not against World Flora Online. This is because World Flora Online was not yet available in its current form when the taxonomic backbone was implemented in EURISCO.

Passport and phenotypic data

The main discussions were devoted to passport and phenotype data and took place during the hands-on sessions; they are not reproduced here.

Public web interface

The EURISCO public web application is currently undergoing a major overhaul. The reason for this is that both technologies and user behaviour are subject to change over time. Therefore, even established information systems need to be revised on a regular basis. The EURISCO developer, Pragna Kotni, presented the prototype of the new user interface. The focus of her work is on the implementation of a responsive design with a clearer layout as well as on the improvement of the search functionalities. For example, an automatic mapping of genus and species names to a harmonized vocabulary of crop names is being carried out for the new portal, thus simplifying the search.

After the presentation, the workshop participants were very pleased with the new implementation. It was agreed to provide a link to the prototype so that participants could test it after the workshop and provide feedback and change requests.

Workshop feedback

To improve the training for future workshops, the participants were asked for feedback. The workshop was considered very interesting and helpful. Participants said that the workshop had the right balance between lectures and practical training elements. Regarding the question of whether a purely online training workshop is a fully adequate alternative to in-person training, several participants said that they had been very sceptical about this beforehand. However, they were positively surprised by the course of the workshop and very satisfied with the result.[2]

Nevertheless, there is a clear preference for in-person training workshops because they offer participants in particular the opportunity to exchange with each other on various aspects of cooperation outside of the training agenda. There was consensus that a two-year interval for the training workshops is appropriate. It was pointed out again at this point that small, additional training sessions for e.g. the data providers of a country can be organized at relatively short notice and conducted online.

The organizers are very pleased with the positive feedback and would like to take this opportunity to expressly thank the participants once again for the open and productive atmosphere.

[2] It should be noted here that several participants started production updates of their datasets (passport and phenotypic data as well as DOIs) in EURISCO shortly after the end of the workshop.

ANNEXES

Agenda

All times are in CET

DAY 1 (10 NOVEMBER 2021)		
10:00 – 10:05	Welcome	S. Weise
10:05 – 10:30	Round of introductions	All participants
10:30 – 10:45	Introduction of agenda and expectations	S. Weise
10:45 – 11:15	EURISCO catalogue • General presentation • Developments in recent years • Outlook on planned developments in the near future	S. Weise
11:15 – 11:30	**Break**	
11:30 – 12:00	DOIs for plant genetic resources and their support by EURISCO	S. Weise + all participants
12:00 – 13:00	Passport data • Data gaps and pitfalls • How to improve data quality?	S. Weise + all participants

DAY 2 (11 NOVEMBER 2021)		
10:00 – 10:30	Passport data • Data templates and upload procedure • How to interpret data integrity checks? • Taxonomy • AEGIS status	P. Kotni + S. Weise
10:30 – 11:15	Hands-on session passport data (bring your own data)	All participants
11:15 – 11:30	**Break**	
11:30– 12:30	Hands-on session passport data (cont.)	All participants
12:30 – 13:00	C&E data • Well-known challenges • Data templates • Upload procedure	S. Weise

DAY 3 (12 NOVEMBER 2021)		
10:00 – 11:15	Hands-on session C&E data (bring your own data)	All participants
11:15 – 11:30	**Break**	
11:30– 12:00	Hands-on session C&E data (cont.)	All participants
12:00 – 12:30	Presentation of new EURISCO search interface prototype	P. Kotni
12:30 – 13:00	Feedback + general discussion	All participants

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