



ecobreed
IMPROVING CROPS



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AGENDA

ECOBREED 24th EB Meeting

Viterbo, Italy, 30 - 31 of March 2022

Wednesday, 30th of March | 9:00 - 18:00

09:00 – 11:00 | Introduction & general items

11:00 – 18:00 | Amendment

Thursday, 31st of March | 09:00 - 18:00

09:00 – 18:00 | Operational plans for year 2022

❖ *Each WP1 to 9 leaders prepare execution plan*

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Executive Board members present in person: Vladimir Meglič (co-ordinator), Pavol Hauptvogel (WP1 leader), Heinrich Grausgruber (WP2 leader), Peter Dolničar (WP3 leader), Dagmar Janovská (WP5 leader), Werner Vogt-Kaute (WP6 leader), Mario A. Pagnotta (WP7 leader) and Antoaneta G. Kuhar (project manager and WP8 leader).

Executive Board member absent: Vuk Đorđević (WP4 leader)

Day 1

The Co-ordinator welcomed everyone present and explained what the 24th EB meeting is about: the amendment and operational plans for 2022; the agenda was presented and approved; some logistical issues were discussed.

The Project manager gave an overview of the future amendment process and the already accepted amendment dedicated to the partial takeover of UP from SZIU. Work on the amendment letter continued throughout the day. The WP4 leader provided input via email WP4 leader provided input via e-mail. WP leaders agreed to contribute on Part A, Part B and Amendment letter using track changes. Timeline for work on the three documents discussed and agreed.

Day 2

WP1

Pavol Hauptvogel, WP1 leader, gave an overview of the work done in WP1 last three months and presented WP1 workplan for year 2022 of Task 1.3.

Task 1.1 finished; data compiled will be used for Task 1.3.

Task 1.2 finished, and implemented in WP2, WP3, WP4, WP5 and WP6.

Task 1.3 starting in M49. Responsible partner: KIS. Other partners involved: CRI, IFVC, BOKU, and NPPC. The information system built as a portal, will enable the access to information on germplasm used within the ECOBREED. The portal will use passport and descriptive data from the evaluation of selected material.

The information system should have the following criteria: easy accessibility for users via a web browser, user-friendly application interface, possibility of multi-criteria germplasm search and export results.

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Software Requirements: The application will be based on a modern and simple API (Application programming interface) due to the speed and operation, stability, and security of the application, or in the future easy portability to Cloud solutions, server operating systems, database server, ideal software based on Open-source GPL licensing. Advantages: low acquisition costs and low price when IS expansion or technology upgrade is required. Disadvantages: high administration complexity, experienced system admin.

Defining information system structure will consist of 2 parts (June 2022):

- first internal part of IS (back office), a system for data preparation by responsible WP 2, 3, 4, 5, and 6 (code lists, workplaces, crop descriptors, passport, and descriptive descriptors).
- the second external part of the IS (front office) with presentation part of the data is represented mainly by a simple search and subsequent export of the retrieved data.
- Programming and implementation of information system construction (June – September 2022).
- Testing of the proposed information system (October – November 2022).
- Processing of passport and descriptive data-templates by WP leaders 2, 3, 4, 5 and 6 (November – December 2022).
- Processing of passport and descriptive data by WP leaders 2, 3, 4, 5 and 6 (January – March 2023).
- Gradual entry of passport and descriptive data into the information system (April 2023 - by the end of Task 1.3).
- Programming and implementation of information system construction (June – September 2022).
- Testing of the proposed information system (October – November 2022).

WP2

Heinrich Grausgruber, WP2 leader, gave an overview of the work done in WP2 the last three months and presented WP1 workplan for year 2022.

Task 2.1 is ongoing. All trials were established. Despite that some trials (e.g. EARLY nursery in Slovenia) were sown late, they crop established well. Low temperatures and no precipitation in spring hampered the development. The durum wheats of the CRETE nursery were included in the DURUM nursery of BOKU and UNITUS.

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BOKU included also the common wheat landraces of the CRETE nursery in their winter wheat trial. A few partners (i.e. SECOBRA, SELGEN, ATK) reduced the number of genotypes in their trials and discarded the truly wretched germplasm based on the 2-years' results. Harvest of the trials is expected by August 2022. Afterwards, samples are expected to be delivered as soon as possible to NPPC for quality analyses.

Task 2.2 is finished for the experimental work. BOKU is awaiting results from the genotyping of the soil microbiota. Delays in genotyping were caused by lab-supply shortages due to the high demand for COVID-19 testing. Analyses of both BOKU and UNEW data shall be finished by fall/winter 2022.

Task 2.3 is ongoing. UVIGO's plan for 2022 is: (i) finish germination and growth bioassays for 32 varieties (by summer); (ii) finish extraction, quantification and analyses of 20 varieties (by summer); (iii) perform soil solution extraction of at least 5 of the most phytotoxic varieties; (iv) perform raining experiments with at least 10 of the most phytotoxic varieties; (v) write at least one scientific paper with the results of the analysed varieties. UNEW finished the experimental work and will continue with data processing and analysing.

Task 2.4 is ongoing. Field scoring of BOKU's bunt resistant populations A, B and C are scheduled for June/July 2022. Additionally, another population with *Bt11* was developed and will be screened on the field the forthcoming season. Material of the BOKU crosses is also tested by CRI for field resistance after artificial inoculation.

MAS for the *Gpc-B1b* allele was finished by NARDI and ATK. The harvested single spikes were threshed by BOKU and bulked into four populations (i.e. BTX501_Gpc-B1b, BTX501_Gpc-B1a, BTX502_Gpc-B1b, BTX502_Gpc-B1a) which are tested in a field trial in 2022. The four populations shall be distributed among partners in fall 2022 for a multi-environment testing in 2023.

MAS for Cd accumulation in durum wheat will be carried out by BOKU in spring/summer 2022. UNITUS will continue work on the gene expression of durum wheat in response to drought and salinity stress. ATK will continue with MAS for disease resistance genes in the LATE nursery.

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Task 2.5 is ongoing. Partners continue with crossing and selection work of their material developed within ECOBREED. The two MAGIC populations developed by ATK are currently multiplied by ATK and BOKU in small plots. A further multiplication step in 2023 will be necessary to get enough seed material for further distribution among partners. BOKU is testing some multi-parental wheat populations, seeds of which will be available for distribution and testing among partners in 2023. NATUR and RGA continue work on testing and creation of perennial wheat material.

WP3

Peter Dolničar, WP3 leader, gave an overview of the work done in WP3 since last EB meeting. He also presented WP3 workplan for the year 2022.

Within the task 3.1 at UNEW and IHAR whole set of 65 varieties will be planted in 2022, while at MATE and KIS a sub-set of varieties will be planted. AP will be performed at KIS and at UNEW.

There will be no further activities at Task 3.2.

Task 3.3: Cover crop trials at UNEW and KIS successfully overwintered and are ready for potato planting in April 2022 and further evaluations are planned.

Task 3.4: CPB trials with different control strategies at KIS and UNI MATE will be repeated in 2022. At IHAR susceptibility trials of 65 varieties to CPB will be repeated in 2022. Wireworm experiments in past two years gave successful results so no further experiment is planned.

Tasks 3.5 and 3.6: In 2022 new crossings of late blight resistant parents are planned at for both tasks at all three partner institutions. Further selection of resistant progenies will be performed using visual evaluations and Marker Assisted Selection at all three partners. Quality analyses will be performed on advanced breeding lines. Second year of evaluation and selection of advanced breeding lines on organic soils will be done at KIS.

WP4

Task 4.1 Soybean seed samples from RS, RO and AT will be analysing in laboratory for quality traits (e.g. protein content, oil content...) (IFVC). Data set for genotype

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screening (2 years, 3 locations) will be completed and analyses by mix model (IFVC) in order to identify useful traits and germplasm for organic soybean breeding (SZG, IFVC, NARDI). Screening for soybean disease resistance and tolerance will be continued. Trial for soybean-weed competitiveness will be repeated in season 2022. Insect related trials are done and data will be summarised and analysed.

Task 4.2 GEOs work will be redistributed between NATUR and IFVC. Sub-set of soybean genotypes will be tested in field trials for drought tolerance by replacement partner (IFVC) at an alternative site to the already existing Novi Sad. Chilling tolerance will be evaluated at flowering stage (NATUR). Data from previous work will be consolidated and analysed.

Task 4.3 Preparation of the deliverable D4.5: Identification of field, based phenotyping techniques and/or plant traits correlated to increased N fixation efficiency (BOKU/IFVC).

Task 4.4 Genotyping data will be reanalysed according to the new phenotypic data obtained from other tasks (BOKU/IFVC/NARDI).

Task 4.5 Follow up of trial with cover crops (sown in autumn 2021) by IFVC and GS. Preparation for sowing of soybean at two locations (Rimski Sanevi and Curug). Collection of data, processing, and preparation for publication. Further data processing of inoculants trials and experiments.

Task 4.6 Breeding material generation advancing, nursing of segregating populations and line selection (IFVC/SZG).

WP5

Dagmar Janovská reported on the progress in WP5.

Field trials and field evaluations in T5.1. at all localities (AT - SZG, SI - KIS, CZ - CRI) have been already completed. Due to the cyber-attack on CRI's servers at the end of 2021, the analyses of compounds have not yet been completed. The analyses will be finished as soon as all devices are reconnected to the network. Activities in US (WSU) will be discussed in detail at the annual meeting in Martonvasar. Activities in CN (CAAS) will continue to obtain all missing data.

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In T5.2., germination and growth bioassays have been finished and the extraction, quantification, collection and analysis of all information and data obtained (UVIGO, UNEW) were completed.

In T5.3, the spring (KIS, SI) and summer (CRI, CZ) field trials will be repeated due to missing data (failed trials). All other analyses and field trials were completed last season. All DNA analyses were finished and genome resequencing data analysis is ongoing.

In T5.4., genotyping of the whole collection using SSR and functional markers and data analysis will also be completed.

In T5.5. the breeding activities will continue (RGA, KIS, SZG).

WP6

Task 6.2./6.3.

2022: Number of trials stay the same as 2021. Trials in the USA are replaced by one trial in the Czech Republic (wheat), one trial in Germany (potato) and one trial in Austria (soya).

2023: Trials are continued on at least 3 farms per country. Trials are based on populations/early lines of potatoes. Total number of varieties in the trials can be reduced.

WP7

Mario Pagnotta (WP7 leader) reported on the status of training activities.

Task 7.1: we have conducted two workshops, one 5-day and one 1-day, organized by UNITUS and BOKU respectively. Both were moved on-line due to COVID -19 restrictions of. If the change is accepted, this 6-day workshop would fulfil 50% of the planned activities. The other workshops are planned for autumn 2022 by IFVC and NCPP. Announcements will be made soon.

Task 7.2: we should conduct workshops for a total of 12 days. We have already held activities for 7 days and events for another 8 days are on the agenda. In particular, UNEW, BOKU and KIS have events prosed/planned for July 2022, July 2022, June and September 2022 respectively.

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Task 7.3: this task was the most affected by the pandemic and only two events were held. All partners have planned activities for this year to fulfil the Grant Agreement. However, there will be overlap of events and if an extension is approved, the 7.3 activities would be spread out over a longer period of time with greater benefit.

WP8

Antoaneta G. Kuhar (WP8 leader) reported that social media outreach continues to be very promising. Special attention should be paid to zenodo, which has stalled somewhat recently. Heinrich Grausgruber reported that the proceedings of the Gumpenstein conference will be available in mid-April. In addition, the proceedings of the satellite bunt workshop held online in May 2021 will be available by the end of April. Werner Vogt-Kaute opened the discussion about the Organic Farming Platform, where Practise Abstracts could be uploaded. The proposed financial offer is quite high, so the Co-ordinator suggested to use the national possibilities to publish the ECOBREED Practise Abstracts. Heinrich Grausgruber suggested uploading them to the organic e-prints. Werner Vogt-Kaute also opened the discussion on the use of the project's trademark, registered in 2018, saying that this could have positive impacts and outcomes. A short on-line meeting will be organised together with Helena Valas, Vladimir Meglič, Werner Vogt-Kaute and Antoaneta G. Kuhar. Further possibilities for Helena's participation in the annual meetings were discussed.

WP9

The Project manager announced that internal financial reports for the period from May 1, 2021 to April 30, 2022 will be requested from partners. Special attention is required for the partner UVIGO, which had already used 70% of its budget (as of Month 36). Actions were discussed on how to ensure delivery of the tasks and deliverables which are attached to UVIGO.

An overview of upcoming and unmet milestones and deliverables was provided and WP leaders reported on the status.

Later, the Agenda for the 4th annual meeting (May 31 – June 1/2) was discussed and agreed upon:

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- Day 1 (Tuesday) will be dedicated to general topics, WP6, 7 and 8 in the morning and two parallel sessions in the afternoon (WP 4 soybean at the same time as WP 3 potato; with WP2 wheat at the same time as WP 5 buckwheat). During the parallel sessions, the KIS Finance Manager and Project Manager will be available to meet individually with partners. Each partner should make an appointment in advance. The joint dinner will be held in the ATK's cellar.
- Day 2 (Wednesday): wrap-up sessions of WP2-5 in the morning; after lunch: Visit to the organic field and ECOBREED small plot trials (1.5 hours); parallel visits to the Cereal Quality Lab (30-40 minutes) and Phytotron climate chambers (30-40 minutes); visit to the Agroverzum Agro-science exhibition (30-40 minutes).
- Day 3 (Thursday) will be dedicated to the meeting with SAG and EC (hybrid mode). Each WP leader will have 10 to 15 minutes to shortly present the progress of work. Later SAG members and EC would provide feedback.

The next, 25th in person EB session will be held on Monday, May 30 in the afternoon in Martonvasar, Hungary. A hybrid meeting due to Mario's absence will be discussed with local organisers.

The 26th EB meeting will be held in Prague: arrival on Monday, September 26; visit to PROBIO on Tuesday, September 27; EB meetings on Wednesday and Thursday (possible location is downtown Prague); departure on Friday, September 30.

3m reports for January through March 2022 are due April 20.