



Welcome to the 5th issue of our AGENT newsletter, which completes - difficult to believe - our third project year!!! In this issue, as usual, we continue to present the project partners, events and publications. This time, you will also get more understanding of the project stakeholders illustrated by the profile of Rete Semi Rurali.

Enjoy the read!

## Project Meetings

### AGENT 3rd Progress Meeting in Poland

On May 23-24, 2023, the H2020 AGENT project partners assembled in person for the 3rd Project Progress meeting. This time, the event was warmly hosted by IHAR-PIB near Warsaw, with almost 60 representatives from the project partners in attendance. The meeting was held as a hybrid event, providing opportunities for attendance to those project scientists who were unable to travel to Poland this time. Moreover, to expand the scientific exchange beyond the project AGENT boundaries, representatives of other H2020 call SFS-28-2019: Genetic resources and pre-breeding communities B: Adding value to plant GenRes (RIA) financed projects as well as of other partnering organizations were invited and presented at the meeting.



The scientific part of the meeting's first day was concluded with a site visit to the IHAR gene bank, including the field area with the multiplications of genebank accessions as well as the phenotyping observations of AGENT material (e.g. precision collections, general check populations).



On the second day of the event, the project partner ICARDA presented results obtained during a Datathon, directly preceding the CRDA meeting at IHAR-PIB, which was designed for capacity building of project partners for statistical analysis of early project results. The AGENT project Progress Meeting was wrapped in a session moderated by the project Coordinator, highlighting the major achievements, but also identifying major action points for the upcoming months, and discussing further steps towards continued successful project implementation.

[Read more about the event](#)

## Spotlight on ... AGENT Partners

### INIA-CSIC

The National Institute of Agricultural and Food Research and Technology (Instituto Nacional de Investigación y Tecnología Agraria y Alimentaria, INIA) belongs to the Spanish Research Council (Agencia Estatal Consejo Superior de Investigaciones Científicas, CSIC). INIA is a reference institution in Agrifood and Forestry Sciences and Technology at a national level, whose objectives are to support sustainable economic growth and the well-being of society through agricultural and food research and innovation.

The INIA holds the main Spanish Genebank, located at the Plant Genetic Resources Center (Centro de Recursos Fitogenéticos, CRF). The CRF is located in an experimental field station (La Canaleja) in Alcalá de Henares (Madrid). The CRF is in charge of the conservation of the germplasm collections, which includes their multiplication, characterisation and supply of the material to the users. The CRF is also responsible for the coordination of the activities of the Plant Genetic Resources Spanish Network, as well as management and publication of the National Inventory of the Spanish germplasm.



Plant Genetic Resources Center  
Main building in the field station



Plant Genetic Resources Center  
Genebank cold chamber with the base collection

INIA scientists participate in the AGENT project, mainly in WP2, WP3 and WP7. These researchers, belonging to the Environment and Agronomy Department, conduct their work in the CRF. Their research focuses on improving the utilization and conservation of the genebank collections through promoting the phenotyping, genotyping and rationalization of this germplasm.

[Read more about the partner](#)

### TAU

#### What is TAU?

TAU stands for Tel Aviv University, Israel, however, to AGENT, contributes mainly the Institute for Cereal Crops Improvement (ICCI), which is part of its Faculty of Life Sciences. It was established in 1974 and holds the Lieberman gene bank of cereal crops wild relatives, which have been collected throughout Israel. Plants in this germplasm contain many beneficial traits, such as biotic and abiotic stress resistance, as well as yield and quality. Currently, we have seeds of over 17,000 single-plant accessions of 20 species, including a large population of wild wheat (*Triticum dicoccoides*) and *Aegilops species*, which are ancestors of modern wheat. Several disease-resistance genes have been transferred over the years to cereal crops, including wheat, barley, and oat. In the past two years, a wheat editing and transformation center has been constructed, which is now fully operative.

#### What is the role of your institution in AGENT?

The ICCI contributes germplasm of wild wheat and wild barley:

- A collection of 500 wild emmer wheat (*Triticum turgidum* subsp. *dicoccoides*) and 500 wild barley (*Hordeum spontaneum*) accessions, which will be genotyped and phenotyped.
- The ICCI's phytopathologists will evaluate stripe rust resistance in the wild emmer selection, in the greenhouse, and in the field.
- 100 new single-plant accessions, each of wild wheat and wild barley, will be collected from an in-situ conservation site and multiplied.
- Historical data on rust resistance will be prepared and available to breeders and researchers.



The ICCI building at Tel Aviv University



Moshe Ronen, a curator of the Harold and Adele Lieberman Germplasm Bank, with his family in search of wild plants

[Read more about the partner](#)

## Communication and dissemination activities

### Cooperation with stakeholders

#### Cultivating diversity – AGENT wheat and barley accessions on display during a farmers' field day in the Tuscan hills

On 9-10 June 2023, the Italian seed diversity network Rete Semi Rurali (RSR) organized their annual field days at the organic farm Florida in Tuscany. RSR is participating in the evaluation of selected wheat, barley and durum accessions of AGENT partners' genebanks under organic conditions, involving their network of organic farmers across Italy. Around 50 stakeholders attended the field days, representing farmers, brewers, bakers, researchers and other interested public who visited stations set up in fields dedicated to RSR projects. AGENT partners Patrizia Vaccino (CREA-CI), Sandra Goritschnig and Lorenzo Maggioni (both ECPGR) presented the AGENT project in a station dedicated to plant genetic resources and the evaluation of wheat and barley germplasm in the field.



[Read more about the event](#)

### AGENT Stakeholder Spotlight: Rete Semi Rurali

An important aim of AGENT is the engagement with relevant stakeholders to make use of the materials and tools developed during the project. Through interaction with the ECPGR Wheat and Barley EVA network, AGENT is providing material for field evaluations to breeders and farmers. Our first spotlight is on the organic farming community utilizing AGENT accessions in their fields:

**Rete Semi Rurali (RSR)** is an Italian umbrella organisation, representing over 30 national and regional organisations promoting Community Biodiversity Management and participatory research in organic and agroecological farming systems. Founded in 2007, RSR has been actively promoting on-farm conservation and participatory plant breeding for over ten years, through several regional, National and European research projects. Starting from the dynamic management of local varieties, RSR is now researching and promoting the use of evolutionary populations of cereals, rice, legumes and horticultural crops.

In its facility in Scandicci, Italy, RSR hosts a library dedicated to agrobiodiversity and a Community Seed Bank, where seed of local varieties and evolutionary populations are collected, stored and re-distributed each year through a spring and autumn sowing campaign. RSR's Community Seed Bank also acts as an intermediary between formal gene banks and farmers, facilitating access to germplasm and providing larger amounts of seeds than one normally would receive from genebanks directly. RSR doesn't have its own experimental farm, but relies on a network of organic farms across Italy to multiply, evaluate and research a growing number of accessions each year.

RSR is member of several international networks on seeds and biodiversity: [the European Coordination Let's Liberate Diversity](#), [the European Consortium for Organic Plant Breeding](#), [the Global Coalition of Open Source Seed Initiatives](#), [Agroecology Europe](#) and [the EVA Wheat & Barley network](#).

Thanks to its multi-actor and action-research approach, RSR is considered a dependable representative of the rural community and a competent advocate with relation to conservation and sustainable use of plant genetic resources and seed legislation, both at National and European level. In the past few years RSR has been engaging in awareness-raising and education activities with local authorities and citizens, who are the ultimate link and beneficiary of agri-food systems, with the aim of embedding seed diversity in urban food policies.

Within the AGENT project, RSR is involving their Italian organic farmer's network to evaluate barley, bread wheat and durum wheat accessions for traits relevant in organic production, such as ground coverage, plant height, lodging and disease resistances. Fifty accessions of each crop will be evaluated across nine locations in Italy over two years, generating data on adaptability and usefulness for breeding and cultivation.

#### Recent publications

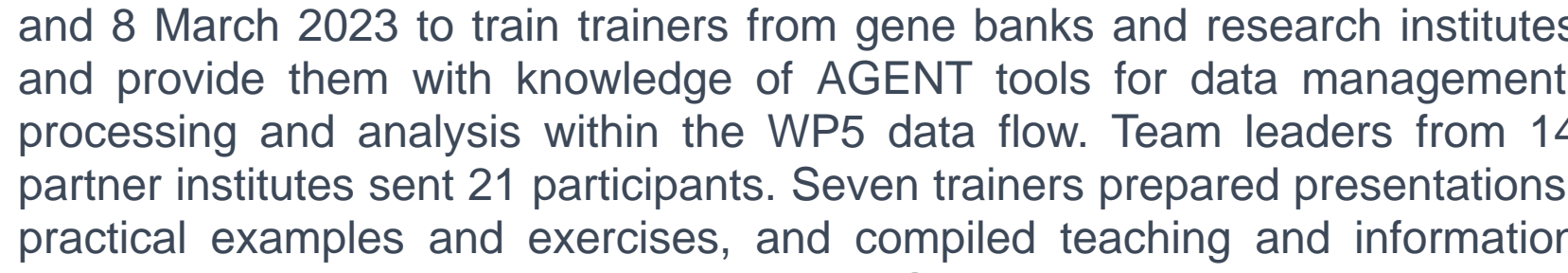
We are pleased to present here the current scientific publications from the consortium.

- Liliana VASILESCU, Eugen PETCU, Alexandrina ȘIRBU, Cătălin LAZĂR, Lenuța Iuliana EPURE, Elena PETCU, Lidia CANĂ, Maria TOADER. Barley yield response to agroclimatic indices variability. *Scientific Papers. Series A. Agronomy*, Vol. LXV, No. 1, 2022, November 2022, <https://doi.org/10.5281/zenodo.7139879>

#### Events

##### AGENT train-the-trainer workshop

The AGENT partner IPK Gatersleben hosted the first AGENT training on 7 and 8 March 2023 to train trainers from gene banks and research institutes and provide them with knowledge of AGENT tools for data management, processing and analysis within the WP5 data flow. Team leaders from 14 partner institutes sent 21 participants. Seven trainers prepared presentations, practical examples and exercises, and compiled teaching and information material to serve as input for a library of AGENT training material. In a very productive atmosphere, knowledge was imparted on the implementation of standards and tools for phenotypic and genotypic data, their adoption in the data flow and the data infrastructure.



##### AGENT wheat trials visit

On January 27, 2023, within the framework of the exchange of experience between the scientists, the representatives of the Plant Breeding group of the School of Agricultural, Food and Biosystems Engineering (ETSIAB) of the Technical University of Madrid visited the INIA-CSIC La Canaleja Farm. The main focus of the visit was to observe the wheat trials of the AGENT project, including the 'standard check' genotypes trial and the 'precision collection' drought response trial of WP3 of the project.

#### Upcoming events

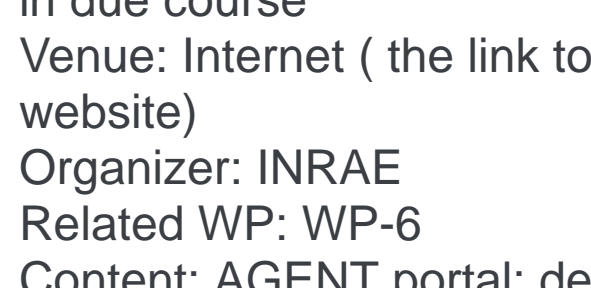
##### AGENT General Assembly

Date(s): Tentatively November 21-22, 2023.  
Venue: Internet (the link to the event will be communicated via email)  
Organizer: IPK, EURICE  
Related WP: WP-1  
Content: Review of the project progress, exchange of ideas on further activities, and best practice experiences.  
Target audience: project partners, representatives of other projects interested in the event.

##### Training on AGENT Portal

Date(s): December 2023, precise date to be determined and communicated in due course  
Venue: Internet (the link to the event will be communicated via the project website)  
Organizer: INRAE  
Related WP: WP-6  
Content: AGENT portal: demonstration and exercises; Introduction to use of AGENT analysis container: demonstration and exercises; Discussion of use of community needs.  
Target audience: anyone with an interest in genomic approaches to the management and use of genebanks through the use of genomic data, especially (but not exclusively) those with an interest in European collections of wheat and barley.

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