

Regeneration and safety-duplication of threatened cereal and grain legume accessions

The first year's activity of a two-year project funded by the Global Crop Diversity Trust for the regeneration and safety-duplication of regionally prioritized crop collections was concluded in March 2010. The project, jointly prepared by the ECPGR Cereals Network and the Oil and Protein Crops Network, and submitted for funding through the ECPGR Secretariat, is aiming at carrying out regeneration and safety-duplication of over 5000 threatened accessions identified in ten European countries (Albania, Armenia, Azerbaijan, Belarus, Bulgaria, Georgia, Greece, Hungary, Israel and Portugal). The total grant is nearly US\$130 000 and the ECPGR Secretariat is acting as the backstopping agent for the project. As a result of the first year of activities, the 12 partner institutions involved have successfully regenerated



Sowing of threatened wheat and *Aegilops* accessions for regeneration at the Armenian State Agrarian University (Yerevan) in October 2009.
Photo: Armenian State Agrarian University (ASAU), Yerevan, Armenia

414 grain legume accessions (chickpea, common bean, cowpea, faba bean, grasspea and lentil) and 1522 cereal accessions (*Aegilops*, barley, maize, sorghum and wheat). Low viability of the samples revealed to be a problem in many cases (especially for

grain legumes and wild barley), indicating that the project was timely, if not too late in some cases. All the regenerated samples are planned to be safety-duplicated both at the Svalbard Seed Vault and at a CGIAR centre or at another genebank meeting

the international management standards. All germplasm regenerated under the project will be made available and otherwise dealt with in accordance with the terms and conditions of the Standard Material Transfer Agreement of the International Treaty on Plant Genetic Resources for Food and Agriculture. Suitable regeneration protocols were recommended and the data obtained (passport and characterization) are planned to be made publicly available through international databases. The project was an occasion to raise awareness on the need to use appropriate standard regeneration practices and it has also been able to involve local farmers in the activity and contribute to highlight the richness of certain European collections and the importance of maintaining them.

Surveying and collecting *Avena* wild species in Sicily and Andalusia

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In May 2010, two missions, one to Sicily, Italy, the other to Andalusia, Spain, were carried out in order to survey and collect *Avena* populations of *A. insularis* and *A. murphyi*, *A. hirtula* and *A. longiglumis*, respectively. The missions fulfill the targets set in the AGRI GENRES 057 project "An Integrated European *In Situ* Management Work Plan: Implementing Genetic Reserves and On Farm Concepts" (AEGRO), co-funded by the European Commission, DG AGRI within the framework of council regulation 870/2004, as well as the collecting and *in situ* conservation priorities set during the Second meeting of the ECPGR Cereals Network in Izmir, Turkey (April 2008 – see NL36 page 8).

Avena insularis was first described in 1998 by Ladizinsky (Genet. Res. Crop Evol. 45:263-269). This species was first collected around Lago Comunelli in Sicily and later on was also found in Tunisia. During the present trip we visited the areas where this species was initially collected, to survey the population sizes and collect again, as well investigating areas with a similar habitat, to confirm or exclude its presence. *Avena insularis* is found on uncultivated clay soil, coexisting with *Lygeum spartum*, and sometimes with *A. sterilis* (Figure 1, see page 6). In at least four sites around the lake, *A. insularis* populations were found. One of the sites had a pure (no *A. sterilis* present) large *A. insularis* population, while at least two more populations were found in an area fenced in by the Regione Siciliana, Assessorato Agricoltura e Foreste, planted with pine trees. Another population, mixed with *A. sterilis*, was found at Mt. Giase, also fenced in by the same agency, where eucalyptus and pine trees were planted. A new site with *A. insularis* was found close to Borgo Franchetto. In areas investigated north of Mt. Etna with similar soil types, no *A. insularis* plants were found. Thus, it seems that this species is only present south of the Catania-Palermo highway.

Andalusia, in Spain, was visited mainly to survey *A. murphyi* populations and also to check sites with *A. longiglumis* and *A. hirtula*. Three years ago (in 2007) *A. murphyi* was collected in the southwest part of Andalusia, between Tarifa and Vejer. This year the same sites were visited to survey the populations. In at least one case, where *A. murphyi* coexists with *A. sterilis*, similar proportions of the species were observed compared to three years ago. Moreover, at least two fields, close to the road going to Bolonia, were found with pure dense populations of *A. murphyi*, while in neighbouring fields no *A. murphyi* plants were present (Figure 2, see page 6). In this area all fields are used as pasture land for cows. In the fields where *A. murphyi* was present the cows are brought in for grazing after *A. murphyi* sheds its seeds on the soil, thus large populations are maintained. New sites with small *A. murphyi* populations were located close to Atlantera and Barbate. Another site with this species present was north of Alcalá de los Gazules, a place that was indicated to us during our visit with Guillermo Ceballos of the Consejería de Medio Ambiente of the Junta de Andalusia in Sevilla. This site is interesting because it is not the typical *A. murphyi* habitat. None of the sites where this species is found are protected, but with proper management of the pasture land *A. murphyi* can also thrive in the area, thus recommendations to farmers are needed in order to maintain satisfactory population levels. *Avena longiglumis* was spotted in the Parque Natural Acantilado, west of Barbate and at the Parque Nacional de Donana, while *A. hirtula* was present at the Parque Nacional de Donana, in close distance to *A. longiglumis* plants.