

## Setting up of a Multicomponent Biological Resource Center for Agroecology at INRA (Dijon, France)

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### Abstract:

An innovative Biological Resource Center (BRC) including different types of microbial and plant resources is being created at Dijon (France) to study agroecology. This BRC aims at promoting technical aspects to preserve the diversity of organisms, to improve identification and characterization tools, to organize databases to merge taxonomic and ecological traits of organisms and to rise up the Quality Standard to provide biological resources on request following exchange of an MTA form.

The components are :

i) Weeds are wild plants in agricultural areas. Weeds are extraordinarily diverse. For research purposes (life history traits, herbicide resistance research, seed identification), the collection includes c.a. 430 weed species (1100 seed samples mostly isolated from France) and seed specimens from c.a. 780 species are stored to serve as references for species identification purposes. Additional seed collections include c.a. 1000 accessions from noxious weeds (containing herbicide-resistant plants).

<http://www2.dijon.inra.fr/bga/phototheque/main.php>

ii) Legumes are strategic crops worldwide, both as sources of dietary proteins for humans and livestock, and to replace synthetic fertilizers as a source of nitrogen in the soil. The INRA-Dijon Grain Legumes Collection harbours 3 main legume species: pea, faba bean, and lupin spp. counting more than 1000 accessions per species including landraces, mutants and wild forms. These resources are the subject of genetic and phenotypic characterization permitting the definition of core collections and the development of association genetics strategies.

<http://193.50.15.18/legumbase/>

iii) Arbuscular mycorrhizal (AM) fungi are plant symbionts which provide ecosystem services to crop production. The International Bank for the Glomeromycota (IBG) is a structure for conservation of AM fungal biodiversity and registration of well-defined isolates in an internationally-accredited database. The activities of the IBG in Dijon are: 1) maintenance of a core germplasm reservoir of fungal diversity (45 accessions/250 cultures) on host plants, 2) development of molecular probes, 3) preservation of commercial fungal lines for industrials, 4) technical training for users.

<http://www.kent.ac.uk/bio/beg/>

iv) poster "MIAE : A collection dedicated to Soil Microbial Diversity and Environment".

<http://www2.dijon.inra.fr/umrmse/spip.php?rubrique47>

**Key words:** agronomical ecosystems, soil-borne microorganisms, weeds, legumes, barcoding