Proceedings of the 50th Italian Society of Agricultural Genetics Annual Congress
Ischia, Italy – 10/14 September, 2006
ISBN **88-900622-7-4**

Poster Abstract – A.18

THE ITALIAN PLANT DNA BANK: TOWARDS AN INTEGRATED SYSTEM FOR CONSERVATION AND UTILIZATION OF GENETIC RESOURCES

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DNA bank, conservation, genetic resources, landraces, model species

Human life is highly dependent on the use of plants, since they represent not only an important component of the diet, but also a source of various by-products, e.g. fibres and medicines. To reduce the risk of a loss of genetic material, particularly wild species and old local varieties, several Institutes are acting all over the world for the *in situ* and *ex situ* conservation of plant germplasm. Conservation possibilities were widened by the recent advances in plant genomics which allow the retrieval of large amounts of information from DNA, in particular on genes, their function and organization, and on possible markers. A DNA bank may represent therefore a reservoir of genes which is useful, both for comparison purposes, in order to monitor the changes in the genetic structure of cultivated material, and for the development of new molecular markers and search for gene variants. In this framework, a DNA bank is an extension of the concept of gene-bank initially implemented in seed genebanks and is not meant as a substitute.

In 2005 the first core of a DNA bank was set up at the Institute of Plant Genetics, CNR, in Bari, where a seed bank exists since 1970. The purposes of this DNA bank are to collect, extract and store genomic DNA from local varieties of Mediterranean crops, and from their wild relatives. This material, in fact, can be of particular interest for the presence of useful genes (e.g. resistance to various stresses), which can be easily retrieved from the DNA available in the bank. For this reason, DNA was extracted from single individuals from several populations of *Eruca sativa, Borago officinalis, Cynara cardunculus* var. *scolymus* and var. *sylvestris, Lens culinaris, Capsicum annuum*, etc. and stored at -80°C. A further aim of our DNA bank is to store DNA from model species, such as *Arabidopsis thaliana* and its relatives, collected in the Mediterranean Basin.

At present we are also implementing a database including the most relevant information relative to the stored samples and are developing a web interface to allow external users access the information and request DNA samples on the basis of a material transfer agreement.