

CHARACTERIZATION AND CONSERVATION OF EMILIA ROMAGNA MAIZE LANDRACES

STAGNATI L.*, BORRELLI V.M.G.*, SOFFRITTI G.*, DI PASQUALE G.M.*, MARTINO M.*, LANUBILE A.*, ROSSI G.***, CANESTRALE R.***, TABAGLIO V.*, MAROCCO A.*, BUSCONI M.*

*) Department of Sustainable Crop Production, Università Cattolica del Sacro Cuore, Via Emilia Parmense 84, 29122 Piacenza (Italy)

**) Department of Earth and Environmental Sciences, University of Pavia, Via S. Epifanio 14, 27100 Pavia (Italy)

***) CRPV, Via Tebano 45, 48018 Faenza (Italy)

landraces, conservation varieties, biodiversity, population genetics, Zea mays

The project aims at the characterization and conservation of regional maize landraces. Genetic material, consisting of 32 accessions, was retrieved both from recent surveys in Emilia Romagna, 11 accessions, and from the germplasm bank of CREA-MAC (Bergamo), 21 accessions. In particular, these last samples derive from the whole Italian collection of maize landraces carried out in the 50's by Brandolini and Fenaroli. In the first two years of the project, we carried out the landrace census and field characterization of the different materials according to UPOV guidelines and prepared, for each accession, a descriptive sheet. For each landrace, 100 seeds were sown and, from each plant, leaf samples were collected for DNA analysis. Approximately 2,000 plants, around 60 plants per landrace, were sampled. Each landrace is maintained in field by controlled random-intermating. For genetic analyses, 80 SSR markers were tested to identify the 10 most polymorphic to be used for the genetic characterization of all samples. . In parallel to these activities, an agronomic trial has been set up with the 32 landraces on four replicates to investigate production potential and resistance to mycotoxigenic fungi, with a special focus on *Fusarium verticillioides*. Considering that landraces can be exploited in conditions of low input agriculture, one of the objectives of the project is the identification of the best performing landraces suitable for cultivation nowadays (with a particular interest at mountain and disadvantaged areas). With this purpose, seeds, obtained from the propagation carried out in the first year, were distributed to partner farms and fields have been set-up in different hilly and mountainous areas of the region Emilia Romagna. These fields are presently underway with the double aim to evaluate the landraces in low input conditions and to propagate seeds for the future cultivation. The work was supported by PSR 2014-2020, Emilia Romagna Region.