

RECOVERY, CHARACTERISATION AND VALORISATION OF IN SITU PRESERVED LOCAL MAIZE VARIETIES FROM EMILIA ROMAGNA REGION

STAGNATI L.*, SOFFRITTI G.*, MARTINO M.*, LANUBILE A.**, ROSSI G.***, RAVASIO A.***, MAROCCO A.**, BUSCONI M.**

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

**) BioDNA Research Centre, Università Cattolica del Sacro Cuore, Via Emilia Parmense 84, 29122 Piacenza

***) Department of Earth and Environmental Sciences, Università degli Studi Pavia, Via S. Epifanio 14, 27100, Pavia.

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The spread of maize (*Zea mays* L.) in the Italian peninsula has been reported since the middle of the 16th century. From that time onwards, the species started a diversification process according to agroclimatic conditions, food preferences, sowing and harvesting times in the different cultivation areas. The genetic variability of Italian germplasm, as the result of cultivation and selection, led to the establishment of a vast complex of local varieties characterised by high genetic variability.

Local varieties, highly cultivated until the Second World War, were subsequently replaced by hybrid varieties with better agronomic performances.

In some cases, cultivation of local varieties continued confined to small areas by farmers and hobbyists, often in marginal hill-mountain areas where intensive agriculture has never developed.

From a recent in loco survey in the Apennine areas of the Emilia-Romagna region it was possible to identify 7 new local maize accessions, previously not reported, that were maintained in in situ cultivation by farmers as a kind of "family inheritance" rather than for production purposes.

These varieties are: Tagliolino (EMR01- RE), Cinquantino Rosso (EMR03 - RE), Rosso di Rasora (EMR04 - BO), Mais da scoppio (EMR06 - RA), Santa Sofia (EMR07 - FC), Principe di Scavolino (EMR10 - RN) and Piacentino (EMR13 - PC).

The accessions were morphologically characterised by using the UPOV descriptors, and well differentiated according to: kernel type, flint (EMR10 and EMR13), flint like (EMR03 and EMR07), dent like (EMR01), popcorn (EMR06); ear colour, whitish in EMR06, yellow-orange (EMR01, EMR07), orange to dark red (EMR03, EMR04, EMR13).

The agronomic characterisation, carried out in experimental field with replicated plots, showed that the materials under examination are characterised by different maturity groups and good yield. In particular,

EMR04 presented higher yield than a modern hybrid of similar type (FAO300).

The evaluation of the resistance to *Fusarium verticillioides* ear rot revealed that EMR03 and EMR07 are very tolerant to ear rot. Concerning fumonisin accumulation in kernels there were not significant differences.

Genetic characterisation was carried out using 10 SSR molecular markers. The genetic analyses showed good levels of heterozygosity and high levels of inter- and intra-accession variability, allowing a clear separation between the different varieties analysed.