

## IMPORTANCE OF SICILIAN GENETIC RESOURCE IN AGRICULTURE

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Sicily is the largest Mediterranean island located in Southern Italy. This island was a cultural and a commercial port, and one of the most important centre of origin and differentiation of vegetables. During the centuries, the farmers obtained many genotypes for each species, adapting them to the pedoclimatic requirements, and don't caring them to the genetic purity. For this reason, it was estimated a presence of 2,650 taxa (Raimondo et al., 1992) in Sicily on an extension of 26,000 Km<sup>2</sup>. This selection criteria allowed to obtain an inter-specific variability that brought other genotypes perfectly integrated with the cultural environment and with positive effects on the qualitative and organoleptic characteristics (Schiavi et al., 1991). The production of high quality vegetables is often linked to the use of local ecotypes (Piergiorganni and Laghetti, 1999; Rao et al., 2006). These local populations are subjected to low environmental impact agricultural techniques, typical of the areas from which they are selected, and this allows qualitatively high levels to be reached, often

higher than registered varieties. Breeding activity is always depended on the availability of genetic variability, and thanks to the selection criteria applied by the farmers the biodiversity was saved (Schippmann et al., 2002).

Unfortunately, modern varieties are replacing the highly diverse local cultivars and ecotypes for maintaining higher income as a consequence of increased productivity and quality. Nowadays, most of the landraces and local cultivars are grown for self consumption in home gardens or in small lands where the modern agricultural applications are impossible. Almost 100% of commercial production is conducted with F1 hybrid cultivars. In Sicily, there are many uncharacterized local cultivars and landraces which are morphologically diverse in terms of fruit, plant, flower, and agronomical performance (D'Anna and Sabatino, 2013). Such ecotypes may include important genetic sources of biotic and abiotic stress resistance and also quality, yield and disease resistance genes that can be beneficial to

improve modern varieties adapted to changing environments for the further uses (Heslop-Harrison 2002; Sabatino et al., 2013). From this point of view, more emphasis must be given to conserve these genetic resources for maintaining the genetic diversity in order to ensure its availability in the future for plant breeders. In addition, some vegetables such as winter pumpkin *Cucurbita maxima* Duch., particularly hybrid of *C. maxima* x *C. moschata*, and the bottle gourd *Lagenaria siceraria* [Mol.] Standl., are able to be rootstocks of important cultivated species, therefore this genetic variability might be exploited in order to create an panel of alternative new rootstocks suitable for vegetable crops such as watermelon (Halit Yetisir et al., 2006; Kuniyasu, K., 1980; Ekaterini Traka-Mavrona et al., 2000).

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