Recovery, morphological and molecular characterization of globe artichoke ‘Romanesco’ landraces

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Abstract The ‘Romanesco’ globe artichoke is of substantial economic importance for Italy, its major world producer. The widespread adoption of single early uniform micropropagated clones has led to erosion of local genetic resources. In an attempt to characterise landrace diversity for future breeding activities and/or germplasm conservation, a set of 19 clones derived from plants cultivated in traditional areas of Latium region were typed using a combination of morphological traits (UPOV descriptors) and DNA markers (AFLP and ISSR). Principal Component Analysis and significant correlations among some of the morphological traits showed that a reduced number of descriptors could be used efficiently to discriminate between the clones. Stepwise regression analysis identified a number of significant

and consistent associations between certain morphological characters and marker loci. Heritability for important economic traits were computed; moreover, remarkable clones for future breeding activities were recognized. The variability present within the farmers’ fields is an important factor in the design of a rational strategy of *in situ* germplasm conservation.

Keywords *Cynara cardunculus* L. var. *sativa* · DNA markers · Genetic diversity · Morphological traits · Natural populations

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Abbreviations

TNH	Total number of heads
E	Time of appearance of the central head
LH1	Length of the first order head on the lateral shoots
NH	Number of primary and secondary heads
NH1	Number of first order heads
NH2	Number of secondary heads
WH1	Weight of the primary heads
WH2	Total weight of the secondary heads
DH1	Diameter of the first order head on the lateral shoots
LCH	Length of central head
WCH	Weight of the central head
DCH	Diameter of the central head
MSL	Main stem length
PH	Plant height