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# MOLECULAR CHARACTERIZATION OF ITALIAN HAZELNUT CULTIVARS AND SELECTION OF NEW GENOTYPES

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The cultivation of hazelnut (*Corylus avellana*) is relevant in the regions Pimonte, Lazio, Campania and Sicilia and the main production is addressed to the food industry, with a local market for the nut consumption. In the typical regions of cultivation, several varieties are present with a large number of local genotypes and consequent heterogeneity of morphological traits and problems related to the presence of synonyms or homonyms. In the last few years some of the major Italian cultivars (Tonda Romana from Lazio, Tonda di Giffoni from Campania and Tonda delle Langhe from Piemonte) have obtained the quality certification from the European Community. Traditional methods for cultivar identification are usually based on phenotypic observations; however, this is a slow process for the long juvenile period of the trees and the presence of environmental factors. The aim of this work is the molecular characterization of Italian genotypes using AFLP technique and the development of markers able to distinguish each cultivar. The study included the main Italian varieties (Tonda delle Langhe, Tonda Gentile Romana, Tonda Ghiffoni, Tonda Bianca, Tonda Rossa), local genotypes and Mediterranean cultivars. The second objective of the study was the evaluation of the clonal variability among genotypes of TGR, collected in different locations of the typical areas of cultivation.

The results show a distinct fingerprinting for all the main cultivars. A phylogenetic analysis points out the relationships among genotypes and the presence of cultivars of different origin in the regions Campania and Sicily. The AFLP markers were also used to explore the genetic variability present in clones of the cultivar Tonda Gentile Romana.