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Poster Abstract – G.12

GENETIC DIVERSITY AND RELATIONSHIPS IN APPLE ITALIAN GERMPLASM AS REVEALED BY SSRs

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The primary difficulties in apple breeding are the long period of juvenality marking seed-derived plants and the species genetic make-up in that apple varieties have a high degree of heterozygosity, a fact that is also dictated by the marked gametophytic incompatibility that distinguishes this species.

With the aim to identify different allelic forms of functional genes putatively controlling apple fruit quality traits (as colour, firmness, crispiness, juiciness, balance of taste in sugar-acid ratio, aroma perception), a characterisation of more than 300 apple varieties of Italian germplasm, chosen among those in the varietal collection housed at the DCA-BO, has been conducted. The necessity to evaluate the genetic variability inside the apple Italian germplasm leaded us to study the relationships among the different accessions by SSRs. The related cluster analysis made it possible to solve practical doubts between synonymy and homonymy of genotypes with similar behaviour and similar morphological traits and, more important, to describe the relationships among the Italian apple germplam varieties that represent a marvellous source of genetic diversity in which discover advantageous allelic forms of functional genes to select and use for breeding.