

EVALUATION OF LOCAL APPLE VARIETIES IN NORTHERN ITALY AS SOURCES OF SCAB RESISTANCE

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Management strategies for apple scab control are based on intensive chemical treatments or by using scab resistant genotypes, mainly containing *Vf* gene derived from *Malus floribunda*. Unfortunately this monogenic resistance has been overcome, in some cases, by new races of the pathogen and at the same time, organoleptic properties of some *Vf* containing varieties are not always well accepted from the customers. Some apple genotypes, belonging to germplasm collection established in Friuli Venezia Giulia region, have shown characteristics of resistance to apple scab both in field than in artificial infection conditions. In particular, three local varieties (Striato Dolce, Dal Dolç, Di Coròne) demonstrated Mendelian inheritance under single gene control after scab infection. In this work, we focused on the progeny derived from a cross between Striato Dolce and Golden Delicious. Striato Dolce is a local variety of the Carnia region; mother plant is about eighty years old and is located in Arta Terme (Friuli Venezia Giulia). The geographic origin is still unknown, some witnesses would go back to the trade inside the Austro-Hungarian empire. An Illumina bead array of 384 SNPs, based on the GoldenGate assay was developed from a set of 1,679 SNPs mapped in an integrated apple genetic map (<http://genomics.research.iasma.it/>). The 384 SNPs were selected to be evenly spaced throughout the 17 apple linkage groups. The population maps were created with 327 SNP markers. The resistance to apple scab, derived from the autochthonous variety, was confirmed to be monogenic after two years of evaluation in greenhouse. The putative resistance gene was localized in linkage group 9, revealing that the source for this type of resistance is different from all scab resistance genes identified until now.