

GERMPLASM CHARACTERIZATION AND FOOD TRACEABILITY OF VACCINIUM USING MOLECULAR MARKERS

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Blueberry is currently cultivated in Italy on a relatively small scale, it is highly adapted to the Alpine regions and in Trentino (Northern Italy) commercial orchards the most important species are *V. corymbosum*, *V. angustifolium* and in a low portion *V. ashei*. The high concentrations of antioxidants and other beneficial health compounds in blueberries has increased the demand for this crop among health-conscious consumers and may further increase in the near future.

In commercial orchards, mismatched of blueberry accessions are very common, and quality techniques of fingerprinting are useful in order to guarantee the provenience given by nurseries and, at last, the quality standards of the production and yield.

To discriminate cultivars, using molecular markers, DNA was extracted using a commercial kit and amplified with a microsatellites primer set (30 loci) developed on EST (Expressed Sequence Tag) and genomic libraries. Standard microsatellite data analysis was carried out in order to classify all accessions and to have a reference for growers which can be used to prevent them from fraud.

To protect not only the growers but also the final consumers we extended the impact of our study even to food products which contains blueberry. A protocol developed on difficult matrices rich in polysaccharides, was used to extract DNA from food in order to detect the blueberry presence. The quality and quantity of specific DNA extracted and the discrimination from other genera was achieved using traditional PCR and Real Time PCR approach based on the application of microsatellites and other specific molecular markers.

Future work will be focused on the integration of molecular and pomological data in order to detect any association between loci and traits of interest which can be useful for MAS and breeding.