

The phenolic profile of table grapes

Italy is one of the leading table grape producers. The fruit is cultivated mainly in the southern regions, as it needs hot-dry weather with precipitations around 600 mm/year mainly in winter-spring and with temperatures rarely reaching levels close to 0°C. Just like many other fruits, grape too has anti-oxidant properties and beneficial compounds.

Researchers from Disafa at the University of Turin determined the phenolic profile of Italian table grapes during ripening, which varies according to harvest date and berry heterogeneity.

"Results showed this cultivar in phenolic compounds with beneficial properties. At the beginning of harvesting operations, the total phenol level is 341 and 178 mg/kg in the skin and flesh, respectively. Catearic acid was the most abundant compound in the skin (28.95-51.93 mg/kg), while the content of p-coumaroyl-glucose was highest in the flesh (6.39-17.18 mg /kg)".

Low resveratrol levels (0.11-0.29 mg/kg) were instead detected in the skin 14 days after harvesting started. The Response Surface Methodology (RSM) was used to model the evolution of phenolic compounds during ripening. Regression models were extremely significant for protocatechuic acid, catechin, epicatechin and t-resveratrol in the skin and for total hydroxycinnamoyl acids in the flesh.

This modelling could be a tool to enable a better use of the moment of maximum accumulation of phenolic compounds through the selection of the best harvest date. A suitable harvest strategy could be implemented to have a specific bioactive phenolic compound content that meets consumer preferences, thus promoting the importance of eating fresh table grapes.

Source: Belviso S., Torchio F., Novello V., Giacosa S., de Palma L., Río Segade S., Gerbi V., Rolle L., 'Modeling of the evolution of phenolic compounds in berries of "Italia" table grape cultivar using response surface methodology', 2017, Journal of Food Composition and Analysis, Vol. 62, pag. 14-22.

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