

Antioxidant capacity analysis of red fruits during the pulp process

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Abstract

Fruits are products that are consumed fresh and as processed foods. Processing is performed with the aim of prolonging product life, which causes chemical and physical changes that depend on the nature of the product and influences the soluble solids, vitamin C, and antioxidant contents, among others. Fruit pulp, despite being an intermediate product, has a notable place among horticultural derivatives and is used in juices, jams, and smoothies. In order to obtain pulp, fruit is submitted to several transformation operations that can affect the bioactive characteristics. The importance of bioactive compounds in consumer trends, due to their preventive role in degenerative diseases, marks a stage in the research and development of food; consumers want to know the effects processing has on these compounds, which change the nutritional characteristics. For this reason, it is important to evaluate the antioxidant properties during the process. Fresh, blanched, pulp and pasteurized products of the blueberry (*Vaccinium meridionale* Swartz), strawberry (*Fragaria × ananassa*), andean blackberry (*Rubus glaucus* Benth.) and Isabella grape (*Vitis labrusca* L.) were tested; total polyphenol content and antioxidant properties were analyzed with the DPPH and ABTS free radical methods. The fresh fruits had between 0.48 - 5.14 mg caffeic acid/g of total polyphenols and the finished products had between 0.46 - 6.76 mg caffeic acid/g. The highest value of antioxidant capacity was from the blueberry. The amount of polyphenols in the Isabelle grape was not affected by the process, however in the strawberry, this property decreased but increased in the blueberry and blackberry. The antioxidant power depends on the method of analysis; the blueberry and blackberry did not show changes between the stages and the strawberry and grape decreased their antioxidant power after the pulp stage with the DPPH analysis. On the other hand, the ABTS free radical method showed that the thermal treatments had an effect on the different evaluated fruits.