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ABSTRACT BOOK

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P-191 HPLC-DAD-ESI/MS ANALYSIS OF PHENOLIC COMPOUNDS IN FOUR TOMATO VARIETIES AND EVALUATION OF THE ANTIOXIDANT CAPACITY

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Tomato (*Lycopersicon esculentum* L.) is the second most important vegetable crop worldwide and a key component in the so-called “Mediterranean diet”. In the Northeastern region of Portugal, local populations still prefer to consume traditional tomato varieties which they find very tasty and healthy, as they are grown using extensive farming techniques. A previous study of our research team described the nutritional value of the round (batateiro), long (comprido), heart (coração) and yellow (amarelo) tomato varieties [1], but the phenolic profile was unknown until now. Thus, the objective of this study was to characterize the phenolic profiles of these four tomato farmers’ varieties by using HPLC-DAD-ESI/MS and evaluate its antioxidant capacity through four *in vitro* assays based on different reaction mechanisms.

A *cis p*-coumaric acid derivative was the most abundant compound in yellow and round tomato varieties, while 4-*O*-caffeolyquinic acid was the most abundant in long and heart varieties. The most abundant flavonoid was quercetin pentosylrutinoside in the four tomato varieties. Yellow tomato presented the highest levels of phenolic compounds, including phenolic acids and flavonoids, but the lowest antioxidant activity. In turn, the round tomato gave the best results in all the antioxidant activity assays. This study demonstrated that these tomato farmers’ varieties are a source of phenolic compounds, mainly phenolic acid derivatives [2], and possess high antioxidant capacity [1]; being thus key elements in the diet to prevent chronic degenerative diseases associated to oxidative stress, such as cancer and coronary artery disease.

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