



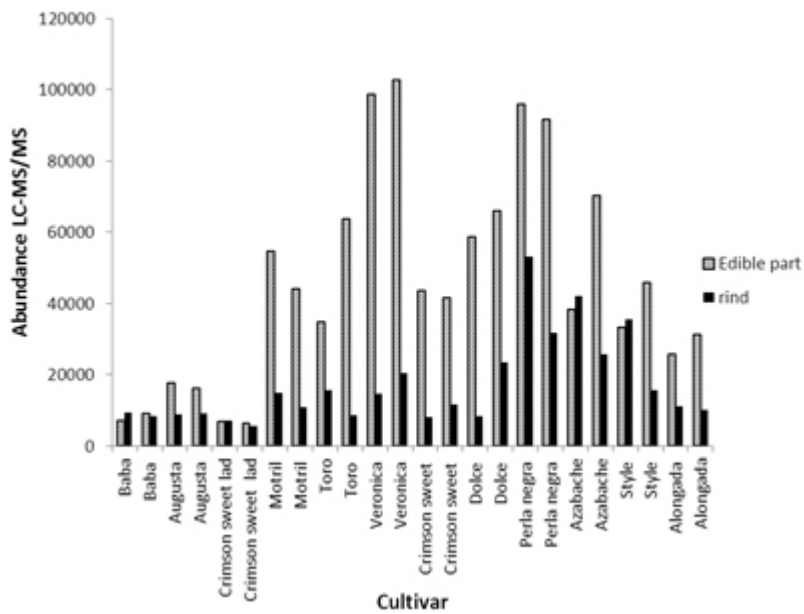
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Identification of citrulline in different parts of watermelon by liquid chromatography with mass spectrometry (LC-MS/MS)

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- [Congress Abstract](#)

Watermelon is one of the commonly consumed fruits in many of countries. This highly consumed fruit, once being only a summer food is currently becoming an everyday fruit [1]. The aim of this work was to identify bioactive compounds in rind and edible part of watermelon from different cultivars (crimson sweet, augusta, baba, motril, toro, veronica, dolce, perla negra, azabache, style and alongada). Quality parameters were also determined (pH, acidity, total soluble solids, lycopene, total phenolic and antioxidant activity). Liquid chromatography coupled with electrospray ionization tandem mass spectrometry was used for the tentatively identification of compounds. Analyzing chromatograms of edible part and rind, we observed distinct profiles and in both rind and edible part we could identify citrulline. Citrulline is used in the nitric oxide system in humans and has potential antioxidant and vasodilatation roles. Based on obtained results citrulline was more abundant in edible part comparatively with rind in the most cultivars (Figure 1). Significant differences were found in citrulline values when comparing cultivars. Principal component analysis was used to evaluate the correlation of citrulline with quality parameters. Citrulline demonstrates negative correlation within pH, total soluble solids and lycopene, in edible part, whereas in rind the citrulline levels were independent from these parameters. In conclusion these results indicate that watermelon is a natural and rich source of the non-essential amino acid citrulline. Furthermore, watermelon rind shown that is a rich source of citrulline and may yield a useful product from an agricultural waste.



Keywords: citrulline, watermelon, LC-MS/MS

References:

[1] Abu-Reidah IM, Arráez-Román D, Segura-Carretero A, Fernández-Gutiérrez A. Profiling of phenolic and other polar constituents from hydro-methanolic extract of watermelon (*Citrullus lanatus*) by means of accurate-mass spectrometry (HPLC-ESI-QTOF-MS), *Food Res Int* 2013; 51: 354 – 362.