

Comparative assessment of preeminent sugars and organic acids in fruits of several apple cultivars

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Soluble sugars and organic acids have a strong impact on the overall sensory quality of fruits. Organic acids also facilitate in stabilization of anthocyanins, and they extend the shelf-life of fresh fruits and their processed products. The production of new apple-based products with health beneficial properties is leading to agronomical and chemical re-evaluation of old apple cultivars.

In this study the mesocarp samples of five conventional, five resistant and fifteen autochthonous apple cultivars from a single growing season were deliberated. Assessment was based on contents of four sugars, one sugar alcohol and five organic acids that were determined by the usage of HPAEC-PAD and HPAEC-CD systems. Fructose was detected as dominant sugar in all cases (50.4 – 77.9 mg/kg FW) and malic acid as dominant acid (1.1 – 4.5 mg/kg FW). Regarding the average values, xylose and sorbitol were in higher amount in autochthonous cultivars compared to others. In resistant cultivars shikimate and malate were found in lower concentrations compared to other cultivar types. Among the obtained data, highest correlation values were found between citrate and isocitrate, and also between citrate and malate (0.905 and 0.839, respectively).

References

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