BOOK OF ABSTRACTS

XIV International Scientific Agriculture Symposium

"Agrosym 2023"

Jahorina, October 05-08, 2023

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VARIATION OF NUTRIENTS IN PLUMS ORGANICALLY GROWN IN NORWAY

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Abstract

European plum (*Prunus domestica* L.) is one the most important temperate fruit species, especially in Europe and southwest Asia. Plums are considered as a functional food because of the high content of bioactive compounds such as dietary fiber, sugars, phenolic compounds, and minerals. Plum production in Norway is located in the fjord districts of the southwestern part and around lakes at eastern part of the country at latitude around 60° north. In most cases, levels of nutrients are altered by the genotype, cultivation techniques and pre-harvest conditions. Therefore, the aim of this work was to investigate influence of geographical and botanical origin on chemical composition of organic cultivated Norwegian plum fruits. Besides aroma, fruit color and firmness, sugar content is one of the main traits that influence fruit taste and one of the main benchmarks. A total of eight sugars and two sugar alcohols were quantified in 30 investigated plum samples. The most abundant sugar in all tested samples was glucose, followed by fructose and sucrose. Significant differences in the content of sugars and sugar alcohols were found among the examined samples. In investigated plum, 24 mineral elements were determined. Four macro-elements were quantified in larger amounts: potassium, phosphorus, magnesium, and calcium. Dominant mineral in all investigated plums was K (10922 – 45002 mg kg^{-1}). The contents of toxic elements (mercury, lead, arsenic, and cadmium) were below the limit of quantification (allowable concentration). These findings could be useful as a reference for selecting the plum and cultivar breeding for each location.

Keywords: *Organic production, Plum, Nutrients, Sugars, Mineral elements.*