

The Effect of Soil Contamination on Chemical Composition and Quality of Aronia (*Aronia melanocarpa*) Fruits

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Abstract : A field study was conducted to evaluate the chemical composition and quality of the Aronia fruits, as well as the possibilities of Aronia cultivation on soils contaminated with heavy metals. The experiment was performed on an agricultural field contaminated by the Non-Ferrous-Metal Works (NFMW) near Plovdiv, Bulgaria. The study included four varieties of Aronia; Aron variety, Hugin variety, Viking variety and Nero variety. The Aronia was cultivated according to the conventional technology on areas at a different distance from the source of pollution NFMW- Plovdiv (1 km, 3.5 km, and 15 km). The concentrations of macroelements, microelements, and heavy metals in Aronia fruits were determined. The dry matter content, ash, sugars, proteins, and fats were also determined. Aronia is a crop that is tolerant to heavy metals and can successfully be grown on soils contaminated with heavy metals. The increased content of heavy metals in the soil leads to less absorption of the nutrients (Ca, Mg and P) in the fruit of the Aronia. Soil pollution with heavy metals does not affect the quality of the Aronia fruit varieties.

Keywords : aronia, chemical composition, fruits, quality

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