

Contents of some Minerals (P, K, Ca, Mg) in Beetroot under Different Fertilization and Postharvest Treatments

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Abstract

Vegetables are important in human diet because they contain high concentrations of minerals, vitamins, proteins and amino acids. Beetroot has a very important role among vegetables since its regular consumption prevents development of cancer and thus contributes to human health. The research objective was to determine the influence of different fertilization and postharvest treatments on dry matter content and concentrations of important minerals such as phosphorus, potassium, calcium and magnesium in the edible part of beetroot (*Beta vulgaris* var. *conditiva*). A field trial was set according to the Latin square method with four types of fertilization (control, 5 t ha⁻¹ stable manure, 500 and 1000 kg ha⁻¹ NPK 5:20:30), while post harvest treatments involved fresh, boiled and stored beetroot. According to research results, dry matter content ranged from 6.20% in fresh beetroot to 11.24% in stored beetroot. Phosphorus content in the edible part of beetroot ranged from 12 to 22 mg P 100 g⁻¹ fresh matter in all three treatments. Regardless of the treatment, the highest content of phosphorus was recorded with the application of stable manure. In fresh and stored beetroot, potassium ranged from 245 to 302 mg K 100 g⁻¹ fresh matter while about 50% potassium was lost by boiling (152-167 mg K 100 g⁻¹ fresh matter). Calcium content ranged between 38 and 85 mg Ca 100 g⁻¹ fresh matter and magnesium between 39 and 64 mg Mg 100 g⁻¹ fresh matter, which is significantly higher compared to literature data. Values of all the studied parameters in boiled beetroot were lower and in stored beetroot higher compared to fresh beetroot.

Key words: *Beta vulgaris* var. *conditiva*, fertilization, minerals

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Količina nekih minerala (P, K, Ca, Mg) u cikli pri različitoj gnojidbi i postupcima poslije berbe

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Sažetak

Povrće je važno u ljudskoj prehrani jer sadrži velike količine minerala, vitamina, proteina i aminokiselina. Među povrćem osobito važno mjesto pripada cikli jer njezina redovita konzumacija pridonosi ljudskom zdravlju prevenirajući razvoj i nastanak raka. Cilj ovog istraživanja bio je utvrditi kako različita gnojidba i postupci nakon berbe utječu na količinu suhe tvari te količinu važnih minerala poput fosfora, kalija, kalcija i magnezija u jestivom dijelu cikle (*Beta vulgaris* var. *conditiva*). Poljski pokus postavljen je po metodi latinskog kvadrata sa četiri tipa gnojidbe (kontrola, 5 t ha⁻¹ stajskog gnoja, te 500 i 1000 kg ha⁻¹ NPK 5:20:30), a postupke su predstavljali svježa, kuhana i skladištena cikla. Prema rezultatima istraživanja količina suhe tvari kretala se od 6,20 % u svježoj cikli do 11,24 % u skladištenoj. Količina fosfora u jestivom dijelu cikle u sva tri postupka kretala se od 12 do 22 mg P 100 g⁻¹ svježe tvari. Neovisno o tretmanu najviše fosfora zabilježeno je pri gnojidbi sa stajskim gnojem. U svježoj i skladištenoj cikli kalij se kretao od 245 do 302 mg K 100 g⁻¹ svježe tvari dok se kuhanjem oko 50 % kalija izgubilo (152-167 mg K 100 g⁻¹ svježe tvari). Količina kalcija kretala se između 38 i 85 mg Ca 100 g⁻¹ svježe tvari, a magnezija između 39 i 64 mg Mg 100 g⁻¹ svježe tvari što je značajno više od literaturnih navoda. Vrijednosti svih promatranih parametara u kuhanoj cikli bile su niže, a u skladištenoj cikli više, nego u svježoj.

Ključne riječi: *Beta vulgaris* var. *conditiva*, gnojidba, minerali

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