### Abstract

Potato (*Solanum tuberosum* L.) belonging to the Solanaceae family which produce tubers as storage of carbohydrates, vitamins, proteins and minerals. This plant is the world’s fourth staple food, after wheat, maize and rice. Research had aim to determine, the content of mineral substances in % and amount of iron (Fe), magnesium (Mg), potassium (K), sodium (Na), calcium (Ca) and phosphorus (P) in mg kg⁻¹ of potatoes cultivars for processing, and their relationship depending on cultivars and yield. This research included four cultivars imported from Netherland: Agria, Mustang, Sinora and Marlen, Field experiment was placed as randomized blocks system (RBS), with four replications in two different agro-ecological regions of Kosovo. After harvesting was measured yield than by random method were taken samples from each cultivar and locality (5 kg). Mineral substances where determined, by combustion at temperatures 700°C for one hour, with Flame Photometric method were determinate calcium, potassium and sodium, ASS method for iron and magnesium, and Spectrophotometers of coloring reaction for phosphorus were used. The mean concentrations of mineral elements were 1.26 mg kg⁻¹, 16.75 mg kg⁻¹, 502.22 mg kg⁻¹, 79.27 mg kg⁻¹, 33.13 mg kg⁻¹ and 71.23 mg kg⁻¹ for Fe, Mg, K, Na, Ca and P, respectively. The mean of yield was 42.28 t/ha. Through assessments, were found statistical distinctions in different levels of signification regarding factors cultivar, locality and yield. The highest levels of content of mineral substances (%) were found in cultivar Agria and lowest in cultivar Sinora. Analyses of T-test showed high significant statistical values on level p<0.01 for varieties in concentration of mineral elements compare with yield. Data were analyzed in statistical software STATISTICA 9 Eng.

Key words: potato cultivars, yield, mineral concentration