PROPERTIES OF THINNED UNRIPE APPLES OF COREDANA, GOLDEN REZISTENT, REGLINDIS AND REWENA VARIETIES

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Abstract. The aim of this study was to determine the properties of unripe apples obtained after the agricultural thinning operation. Apples of the *Coredana, Golden Rezistent, Reglindis* and *Rewena* varieties harvested in 2020 were studied. Physicochemical indicators were analysed. The quantitative and qualitative determination of organic acids was carried out by the HPLC method, and of carbohydrates by capillary electrophoresis. Determination of antioxidant activity and total polyphenols content was evaluated by spectrophotometric methods. The highest amount of organic acids was obtained in the 45th DAFB of harvest, the predominant being malic acid with a value between 25.35±0.02 g/L and 38.08±0.01 g/L. Sugars had the highest value in 97th DAFB, fructose being the main one (67.79±0.11 g/L – 75.73±0.10 g/L). Total polyphenol content and antioxidant activity showed maximum values at the beginning of fruit harvesting, having 1.54±0.01 g GAE/L – 2.04±0.01 g GAE/L and 28.46±0.02 μg AA/mL – 41.37±0.02 μg AA/mL, respectively. It was concluded that thinned unripe apples represent a natural source of organic acids and carbohydrates, significant amounts of polyphenolic compounds with antioxidant properties.

Keywords: unripe apples, organic acids, carbohydrates, total polyphenols, antioxidant activity.