

### **Abstract**

The aim of the study was to investigate organically produced cultivars, as well as integrated ones toward the impact of production technologies on the carbohydrate (sucrose, glucose, fructose), organic acids (malic, citric) and phenolic composition (total phenolics analysed in the pulp and peel) of fruits. The compounds were analysed using high performance liquid chromatography. We can conclude that the type of production did not affect the carbohydrate and organic acid levels in the fruits. The differences observed in the experiment were probably due to different genotypes. With regard to the content of total phenolics analyzed in the apple peel we did not notice differences between different types of production. Organically grown apples, however showed higher contents of phenolic substances in the apple pulp compared to the apple cultivars of integrated production. Higher concentrations of phenolic compounds in organically grown cultivars could be a mechanism of plant response to stress, which occurs due to the avoidance of synthetic chemicals. Due to a higher content of phenolics in organically produced cultivars, these fruits can be considered as beneficial for health, although more research should be performed on the impact of phenolics on human healthiness.