Title	Physicochemical and Enzymatic Properties of Five Kiwifruit Cultivars during Cold
	Storage
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Abstract

Samples of Abbot, Alison, Bruno, Monty, and Hayward cultivars of kiwifruit (Actinidia deliciosa) were obtained from the Iran Research Center of Citrus (Tonekabon, located in north of Iran) and their physicochemical properties were studied during cold storage (at $T = 1 \pm 1$ °C, RH = 80 ± 5%) at 0-, 9-, and 18-week intervals. The mean chemical composition of the fruits were as follows: ash = 0.66-0.96%, moisture = 75.2-84.7%, starch = 0.3-7.0%, and ascorbic acid = 54.8-261.0; K = 125.0-372.0 mg 100 g^{-1} fresh weight, Mg = 18.0–32.0 mg 100 g⁻¹ fresh weight, Na = 1.4–3.1 mg 100 g⁻¹ fresh weight, Fe = 0.17-0.52 mg 100 g⁻¹ fresh weight, Cu = 0.04-0.24 mg 100 g⁻¹ fresh weight, Zn = 0.16-0.49 mg 100 g^{-1} fresh weight, Mn = 0.04–0.10 mg 100 g^{-1} fresh weight, and P = 25.2–49.3 mg 100 g^{-1} fresh weight; glucose = 0.7-2.39%, fructose = 1.20-3.13%, and sucrose = 0.0-5.8%. At the same time, the values of the parameters "Brix = 6.5-14.8% and acidity = 1.8-2.5% of the studied cultivars (mutual effects of cultivar and storage time) were investigated. The increase in peroxidase (POX = 0.0-6.65 U ml¹) and the decrease in pectinesterase (PE; poor activity to 0) activities were also determined. The statistical analysis showed that the Bruno cultivar had the highest content of ascorbic acid (115.0-261.0 mg 100 g^{-1} fresh weight), which is an important compound in fruits during storage, while Hayward had the best overall quality particularly with regards to its resistance to softening. This study confirms that long-term cold storage at 1 ± 1 °C and $80 \pm 5\%$ RH is suitable for maintaining the highest quality of Iranian grown cultivars of kiwifruit.

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