Title Effect of vacuum cooling and packaging on physic-chemical properties of 'Red' holy basil

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Abstract

The effect of vacuum cooling and type of packaging on the physico-chemical properties of 'Red' holy basil stored at 13 °C, the most proper temperatures to store holy basil from the study, was investigated. The results showed that vacuum cooling had no effect on the loss of fresh weight, the change of color, the amounts of vitamin C and chlorophyll in 'Red' holy basil, but was an important factor in maintaining longer shelf life than those of holy basil not vacuum-cooled. The amounts of phenolic compounds and antioxidant in holy basil after vacuum cooling were significant lower than those found in holy basil without vacuum cooling. Type of Packaging had significant effect on fresh weight loss, phenolic compounds and antioxidant but had no effect on the amounts of vitamin C and chlorophyll. Holy basil packed in PVC film wrapped foam trays suffered a smaller loss of fresh weight and at the same time measured higher amounts of phenolic compounds and antioxidant than that packed in holed plastic boxes. There was no interaction effect between vacuum cooling and type of packaging on the loss of fresh weight, change of color, the amounts of vitamin C and chlorophyll in holy basil but significantly affected on phenolic compounds, antioxidant and shelf life. The research also exemplified that 'Red' holy basil precooled and stored under those optimal conditions are significantly better preserved with longer shelf life of 7 days as opposed to the normal length of 4 days.