Title Effect of vacuum cooling operation parameters on cooling time and weight loss of 'Red' holy basil

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Citation Abstracts Book, 6th International Postharvest symposium, 8-12 April 2009, Antalya, Turkey. 256 pages.

Keyword Basil; vacuum cooling; pre- cooling

Abstract

The effect of vacuum pressure reserving operation mode on cooling time, weight loss percentage and temperature variation of 'Red' holy basil were investigated. Vacuum cooling of holy basil packed in PVC film wrapped foam trays and holed plastic boxes using different vacuum pressure reserving operation modes were experimented. Cooling holy basil packed in PVC film wrapped foam trays to 13°C consumed longer cooling times than holy basil packed in holed plastic boxes. The different operation conditions resulted more effect on the cooling time of holy basil packed in hold plastic box than in PVC film wrapped foam trays. Lower final pressure caused higher weight loss. The optimum condition for vacuum cooling process of 'Red' holy basil packed in PVC film wrapped foam trays with initial temperature of 21-25 °C was at the final pressure of 12 mbar with pressure reserving of 1 minute. For holy basil packed in hold plastic box with the initial temperature of 21-25 °C, the optimum condition was the final pressure at 12 mbar with pressure reserving of 3 minutes. The cooling time of holy basil packed in PVC film wrapped foam and holed plastic boxes were 14 and 12 minutes and the weight loss percentage during vacuum cooling process were 0.15 and 0.16, respectively.