ONLINE ISSN : 1881-3984
PRINT ISSN : 1344-6606

Food Science and Technology Research
Vol. 14 (2008) , No. 6 pp.565

[PDF (408K)] [References]

Combined Effect of Mustard and Hop Extract Agents with Emulsifier on Microbial Quality and Physiology of Fresh-cut Vegetables

Daisuke HAMANAKA[1)2)] and Hidemi IZUMI[1)]

1) School of Biology-Oriented Science and Technology, Kinki University
2) Present address: Faculty of Agriculture, Kyushu University

(Received: May 3, 2008)
(Accepted: August 25, 2008)

Cabbage shreds and cucumber slices were dipped in water or solution of mustard extract agent (MEA) and hop extract agent (HEA) with or without sucrose fatty acid ester (SE) and stored in an MA package at 10°C. With cabbage shreds, counts of mesophiles and coliforms were 0.3 to 0.7 logs lower in samples treated with MEA with or without SE than with the water-dipped control for the first 2 days of storage. However, MEA accelerated the growth of lactic acid bacteria. When HEA was combined with MEA and SE, growth of all bacteria on treated cabbage shreds were retarded for 5 days of storage relative to that on control shreds. Treatment with MEA and HEA reduced the depletion of O_2 and accumulation of CO_2 and ethylene in the MA package containing cabbage shreds and the reduction was greater when combined with SE. In contrast, cucumber slices treated with MEA with or without SE accelerated respiration and ethylene production and did not retard any bacterial growth during MA storage at 10°C.

Keywords: cabbage shreds, cucumber slices, mustard extract agent, hop extract agent, sucrose fatty acid ester

[PDF (408K)] [References]

doi:10.3136/fstr.14.565

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