Title Modified ethanol atmosphere to control decay of table grapes during storage

Author Susan Lurie, Edna Pesis, Oxana Gadiyeva, Oleg Feygenberg, Rosa Ben-Arie, Tanya Kaplunov, Yohanan Zutahy and Amnon Lichter

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Abstract

The efficacy of three methods of applying ethanol to prevent storage decay was tested on two cultivars of table grapes, 'Superior' and 'Thompson Seedless'. Ethanol was applied by: (1) dipping grapes in 50% ethanol for 10 s followed by air drying before packaging; (2) placing a container with a wick and 4 or 8 ml ethanol/kg grapes inside the package; (3) applying 4 or 8 ml ethanol/kg grapes to paper and placing this paper above the grapes in the package. The grapes were stored for 6 or 8 weeks at 0 °C and assessed after an additional 3 days at 20 °C. All methods of application controlled decay as well as or better than a SO_2-releasing pad. The ethanol impregnated paper caused high levels of berry browning, perhaps because of high levels of acetaldehyde inside the package. However, the taste of the berries was not impaired by any of the ethanol applications. The taste of 'Thompson Seedless' grapes stored for 8 weeks in modified atmosphere storage was affected by CO_2 levels above 7%. Some methods of applying ethanol used here show promise as alternatives to SO_2 to prevent decay of grapes during storage while maintaining fruit quality.