Title 1-Methylcyclopropene (1-MCP), a new approach for exporting 'Kent' mangos to Europe and Japan

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Abstract

Mexico is the main mango exporter in the world. Annually, 200,000 tons are exported mainly to USA and Canada. 'Kent' is a mango cultivar with good external appearance, pulp with almost no fiber and high sugar content. Because of these attributes 'Kent' mangos are highly demanded by European and Japanese customers. However, Mexico exports only 7,500 t because of high shipment costs due to air transportation. Some commercial attempts have been made to export 'Kent' mangos by sea transportation with negative results because 20 to 24 days are needed to reach the market. Under commercial postharvest handling (refrigerated sea transportation without controlled atmosphere), mangos arrive almost ready for consuming or over ripe having only a few days left to be sold causing high losses and commercialization problems. To overcome these problems, in this assay we evaluated the effect of 1-Methylcyclopropene (1-MCP) on shelf life and quality of 'Kent' mangos for export. Two experiments were set during the mango season 2003 in order to compare six 1-MCP doses (0, 100, 200, 300, 600 y 900 nl L^{-1}). In addition, a semi-commercial trail was conducted considering only the best dose (300 nl L^{-1}) obtained from the previous trial, plus an untreated control. It was found that 1-MCP delayed the ripening process and maintained pulp firmness longer and extended the shelf life of 'Kent' mangos by four days. Moreover, it was concluded that 1-MCP could be a viable technology for exporting 'Kent' mangos from Mexico to Europe and Asia by sea transportation, because it reduces over ripening risks at the destination markets and lowers shipment costs.