

Title Benefits of treating araza fruit with 1-MCP on a commercial scale in the Colombian amazonic region

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Abstract

Araza has been included in the agroforestry system associated with rubber trees by ASOHECA association growers at the Caqueta Department (Colombian amazonic region). Nearly 350 family growers are associated around this productive system with total production expected for the future of around 400 mT per year. Future commercial process success depends on extending shelf-life quality of araza fruit. In our laboratory, 1-MCP has been successfully used for this purpose. To implement 1-MCP on a commercial scale, fruit were harvested in local growers orchards and then were treated with 1-methylcyclopropene (1-MCP) at 0 or 1000 ppb for 1 h at 27°C, after that they were stored at two temperatures (13 or 27°C and 80±5% RH). The araza fruit remained firm enough in both treatments during storage and shelf-life periods for 10 d and 4 d, respectively. The acidity and levels of organic acid composition in 1-MCP fruit was consistently higher than in untreated fruit irrespective of the storage temperature. The 1-MCP treatment reduced respiration rate and ethylene production at 13°C and 80 ± 5% RH. Consistently, 1-MCP also delayed the typical decrease in Hue angle associated with ripening for 10 d at the same conditions. Additionally, information about specific management of the 1-MCP treatment for this region is provided. In conclusion, the increase in fruit quality and shelf-life will encourage growers to produce araza fruit for the fresh market and deliver it to the rest of the country. Araza use in programs of substitution for illegal crops in other departments of this Colombian region is under way.