Title Ethylene action blockade and cold storage affect ripening of 'Golden' papaya fruit

Author Ilana Urbano Bron and Angelo Pedro Jacomino

Citation Acta Physiologiae Plantarum, 31, Number 6, 1165-1173, 2009

Keywords *Carica papaya*; 1-MCP; Respiration; Pectinmethylesterase

Abstract

The purpose of this work was to evaluate the effects of ethylene action blockade and cold storage on the ripening of 'Golden' papaya fruit. Papayas harvested at maturity stage 1 (up to 15% yellow skin) were evaluated. Half of the fruits, whether treated or not treated with 100 nL L^{-1} of 1-methylcyclopropene (1-MCP), were stored at 23°C, while the other half were stored at 11°C for 20 days prior to being stored at 23°C. Non-refrigerated fruits receiving 1-MCP application presented a reduction in respiratory activity, ethylene production, skin color development and pectinmethylesterase activity. Even with a gradual increase in ethylene production at 23°C, fruits treated with 1-MCP maintained a high firmness, but presented a loss of green skin color. Cold storage caused a decrease in ethylene production when fruits were transferred to 23°C. The results suggest that pulp softening is more dependent on ethylene than skin color development, and that some processes responsible for loss of firmness do not depend on ethylene.