

Title Operating conditions under controlled atmosphere storage to prolong the green life of carabao mango (*Mangifera indica* L.): input to a postharvest protocol

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Abstract

A 1.5 ton chiller equipped with controlled atmosphere (CA) facility was designed to replicate a one-fourth model of a 20-foot container van. Using this facility, a study to prolong the green life of carabao mango was conducted using 400 kg matured green mangoes. The system's average conditions during the experiment were as follows: 5% for CO₂, 85% for relative humidity, 106 deg C for chamber temperature, and 9% for O₂. Improvised hot water treatment with temperature of 50 to 55 deg C of 10 minutes duration was applied to the samples prior to loading. Storage of mango in the CA system was terminated after 21 days. The CA system delayed the ripening of the mangoes with peel color index of 4 (more yellow than green) upon removal from the CA chamber. Visual quality assessment, physical and chemical analyses, and sensory evaluation of mangoes stored in the CA chamber gave mean ratings and scores comparable to mangoes ripened at ambient conditions. CA-stored mangoes had less weight loss and less shriveled appearance than those stored under ambient conditions.