Modified atmosphere conditions to export 'Ataulfo' mangos at advanced maturity

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The Brazilian Northeast is the most important mango-producing region in the country. Harvesting mangos at advanced ripeness stages can guarantee better eating quality to consumers, but it also reduces fruit postharvest life. The objective of this study was to evaluate the effect of new modified atmosphere packages (MAPs) and ethylene absorption technologies to maintain the postharvest quality of 'Ataulfo' ('Honey') mango harvested at advanced ripeness stages. The experiment followed a completely randomized design with four replications and eight fruit per replication. The treatments were unpacked fruit (control), as well as fruit packed in polyethylene bags with BreatheWay (BW) membranes presenting low (BWA) or high (BWB) permeability to O_2, with and without an It's Fresh ethylene absorption filter. Fruit at advanced ripeness (i.e., low peel chlorophyl content) were selected in the packinghouse with a DA-meter. Later, mangos were subjected to each treatment and were stored at 9±0.5 °C with relative humidity of 85-90% for 28 days plus 4 days of shelf life at 20±0.5 °C. Fruit quality during storage and shelf life were determined based on ripeness index and pulp firmness. At 28 and 28 + 4 days, the BWA packaging, with and without an ethylene filter, demonstrated superior delay in fruit ripening and softening, compared to other treatments. This evidence highlights the effectiveness of the BWA packaging in delaying the ripening of 'Ataulfo' mango intended for distant markets.

Keywords: Quality; tree ripe; ethylene; packaging; transport.