Effect of Modified Atmosphere Packaging on Shelf Life and Quality of Sapota

M Madhava, M Anil Reddy, Sk Haneefa Begum, Ch Rama Krishna
Department of Agricultural Engineering, College of Agricultural Engineering, Bapatla 522 101

ABSTRACT

Sapota (Achras Zapota L.) fruits ripen and may become overripe quickly. It is necessary to retard the deteriorative process to increase the shelf life of the Sapota fruits. Modified atmosphere packaging can extend the self life of perishable and semi perishable by slowing respiration. Sapota fruits are packed in PVC pouches with gas compositions of 5 % O_2, 10 % CO_2 and 85% N_2. The packed sapota fruits were kept at 10^0C, 15^0C and at room temperature.The weight loss, ascorbic acid, total soluble solids (TSS), pH of fruit samples were studied. It was observed that, the respiration of sapota fruits were very slow at 10°C followed by 15°C and room temperature. The O_2 concentration decreased and CO_2 concentration increased during the first few days of storage and reaches the steady state of equilibrium. Weight loss was about 3.1%, 4.1%, 4.3% and 16.7% at 10°C, 15°C, room temperature and unpacked fruits at room temperatures respectively at the end of the storage. The pH increases initially and decrease. Initial TSS value of sapota was 17.83 and reached maximum TSS values 23.830, 23.530, 22.890 and 22.320% brix at 10°C, 15°C, room and unpacked fruits at room temperatures respectively and then decreased. The ascorbic acid content of sapota was 17.56 mg/100g and decreased to 7.692, 7.692, 8.974 and 7.692 mg/100g at 10°C, 15°C, room temperatures and unpacked fruits at room temperature.

Key words : Quality, Modified atmosphere packaging, Sapota, Shelf life