

Abstract

In order to improve storage life of sapodilla, the effect of chitosan coating on sapodilla fruit quality was studied. The mature sapodilla fruits were coated with 0.5, 1.5 and 2.5% chitosan. Half of the sapodilla from each of the above groups was stored at ambient temperature ($30\pm 2^{\circ}\text{C}$, 50-60 %RH) while the other half of the sapodilla was stored at low temperature (15°C , 45-50 %RH). Each group was analyzed for the following quality parameters: weight loss, firmness, tannin content, titratable acidity, soluble solid content, sugar content and external color. Microbiological quality and sensory evaluation were also investigated. Chitosan coating delayed changes in most of the ripening parameters during storage. A combination of chitosan coating and low temperature storage was the most effective method for preservation of sapodilla. At 6-day storage, chitosan coating at 0.5% was effective in reducing weight and firmness loss of the yellow-green sapodilla by 28% and 87% at $30\pm 2^{\circ}\text{C}$, respectively and by 7% and 68% at 15°C , respectively. Furthermore, disease development of chitosan coated fruits was also effectively inhibited compared to the non-coated control. Increasing the concentration of chitosan coating markedly enhanced the beneficial effects. The results indicated that application of chitosan coating could be an alternative method in extending shelf life and maintaining quality of sapodilla during storage and marketing by retarding the ripening process and inhibiting the growth of the spoilage-causing microorganisms.