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Effect of packaging film of different thicknesses on shelf life and quality of minimally processed onion

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Minimally processed onion is a ready- to- use onion product which offers consumer a fully usable product without much change in the freshness of the produce. The effect of packaging film thickness on the shelf life of minimally processed onion was studied, as packaging film thickness plays an important role in the shelf life of minimally processed onion. The onion pieces of size 8-10 mm thick (approximately) cut with plain sharp knife was subjected to dip treatment with firming agent calcium lactate (2%) for 5 minutes. The samples were surface dried and packaged in polypropylene bags of size 250 X 125 mm with different thicknesses namely 25 µm and 50 µm and stored at low temperature of 10oC and 81% RH. The shelf life of fresh cut onion samples packaged in polypropylene bags of 50 µm and stored at 10oC was 12 days with rings intact, less moisture loss and dryness than those packaged in polypropylene bag of 25µm. The physico chemical analysis of the sample showed that lesser weight loss (2.51%) was observed when the samples treated with calcium lactate (2%) dip and packed in polypropylene bag of 50µm thickness had lesser weight loss (2.51%), more firmness (1.42 kgf/cm^2), less respiration rate and better retention of pyruvic acid content (6.47 µmol/g) compared to those packaged in 25 µm thick at the end of the storage period of 12 days at 10oC. It was also observed that there was no significant difference in the total soluble solids and sugar content of the sample packed in polypropylene bag of 25µm and 50µm thicknesses. It was found from the studies that onion cultivar Arka Sona sliced with plain sharp knife, pre-treated with 2% calcium lactate, surface dried and packaged in polypropylene bag of size 250X125 mm of 50 µm thick and stored at 10oC with 81% RH retained freshness, nutritive value and acceptable with a shelf life of 12 days of storage.

Biography

S Bhuvaneswari is having 12 years of research experience in the field of Post Harvest Technology. Her research contributions are in the area of post harvest management of fresh fruits and vegetables as well as in small scale processing of fruit juices and beverages. She has published research papers in reputed journals as well as presented her research work (both oral and poster papers) in national and international seminars.

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