

Effect of Ethanol and vacuum packaging on extending storage life of 'Ambul' banana at ambient temperature

K G L R Jayathunge*, M D Fernando and K B Palipane

Institute of Post Harvest Technology, Research and Development Center, Anuradhapura

Banana (*Musa spp.*) is one of the most important and economic fruit crop grown in Sri Lanka. It is a rich source of energy and a fairly good source of vitamin A, B₁, B₂, and C. Moreover, the ripe fruit is prized for its excellent taste and medicinal properties. However, the perishable nature of fruit limits its keeping quality for a few days and leads to 20-80 % of post-harvest loss. This study was conducted to determine the effectiveness of vacuum packaging technique to extend the post-harvest life of fresh banana variety "Ambul".

Fresh mature ('3/4 full'), banana hands were dipped in hot water (50 °C) for 20 minutes and left for air-drying under ambient conditions (30 ± 2 °C, 62 ± 3 % RH). Thereafter Banana hands were treated with 3, 5 and 7% ethanol by spraying, placed in 0.0375 mm low-density polyethylene bags (LDPE) and vacuum packaged. Then vacuum-packaged banana hands were stored under ambient conditions for 30 days. The packages were withdrawn at 6 day intervals and weight loss percentage, total soluble solids (TSS) and firmness of the fruit were measured in triplicate. The subjective measurements on peel colour and disease index were taken according to the scales.

Control treatment turned to full yellow stage after 6 days of storage, while vacuum packaged banana remained green throughout the storage. During storage, there were no significant differences in weight loss, TSS and firmness of banana treated with ethanol. Banana treated with 3% ethanol showed slight infections of disease 24 days after storage, while 5 and 7% ethanol treated banana showed slight infection after 30 days.

Dipping of fresh banana in hot water (50 °C) for 20 minutes, spraying of 5% ethanol followed by vacuum packaging in low-density polyethylene, was a successful method in extending the post-harvest life up to 24 days, under ambient conditions.