

Storage stability of jackfruit (*Artocarpus heterophyllus*) powder packaged in aluminium laminated polyethylene and metallized co-extruded biaxially oriented polypropylene during storage

ABSTRACT

Total colour difference (ΔE), rates of adsorbed moisture and sensory attributes of drum-dried jackfruit powder packaged in aluminium laminated polyethylene (ALP) and metallized co-extruded biaxially oriented polypropylene (BOPP/MCPP) pouches stored at accelerated storage (38 °C, with 50%, 75% and 90% relative humidity (RH)) were determined over 12 weeks period. The changes in total colour followed zero order reaction kinetics. Packaging materials, storage temperature and RH values significantly ($p < 0.05$) influenced the rates of adsorbed moisture of jackfruit powder. There was a significant ($p < 0.05$) decrease in the intensities of the fruity odour, taste and increase in the lumpiness of the jackfruit powder stored at 38 °C with 90% RH. The shelf life of jackfruit powder stored at 38 °C and 90% RH was limited by overall acceptability and the intensity of fruity odour, taste and lumpiness at week 8 of storage. Jackfruit powder stored at 28 °C remained stable and acceptable throughout the storage period for all RH values. The powder packaged in ALP significantly ($p < 0.05$) reduced total colour change, rates of adsorbed moisture, lumpiness intensity of jackfruit powder and was rated higher in terms of overall acceptability over BOPP/MCPP. Results of this study suggested that ALP packaging with storage conditions of 28 °C and RH less than 75% was better suited for keeping jackfruit powder.

Keyword: Jackfruit (*Artocarpus heterophyllus*) powder, Accelerated storage, Total colour difference, Adsorbed moisture rates and sensory attributes