

Selection of best packaging method to extend the shelf life of rice crackers

Thejani M. Gunaratne, Nadeesha M. Gunaratne and S. B. Navaratne

Abstract

In this study, Sweet and Savory rice crackers with a shelf life of 6 months were packed separately under four categories as with desiccant, with oxygen absorber, with both desiccant and oxygen absorber and without any of them. These packets were stored at high temperature (47°C) and room temperature (28°C) with saturated conditions to conduct accelerated shelf life testing. Moisture content, pH and TBA value of these crackers were determined using Moisture analyzer, pH meter, distillation method respectively. Dried silica gel containing triple laminated pouches were stored under normal atmospheric conditions (28°C, 70 – 75% RH) until a constant weight was gained to determine WVTR. A sensory test was done using a five point hedonic scale and was statistically analyzed using MINITAB 14. Results revealed that Moisture content, pH and TBA values increased gradually with time. WVTR was $0.2242 \text{ g m}^{-2} \text{ day}^{-1}$. There was a significant difference of sensory properties with time. The packets containing both desiccant and oxygen absorber was the best and it gained the longest shelf life of 9.2 - 11 months.

Index terms – Accelerated shelf life test, Oxygen absorber, Packaging, Rice crackers, Sensory evaluation, Shelf life, Thiobarbituric acid test