Effect of storage on physicochemical properties and microbiological stability of osmodehydrated pineapple (Ananas comosus) treated with sucrosesorbitol mixtures

ABSTRACT

Osmotic dehydration (OD) is an effective fruits preservation technique with minimal nutrients loss. The study aimed to determine physicochemical properties and microbial stability of osmodehydrated pineapple. The experiment were conducted using 65 °Brix sucrose-sorbitol mixtures (100:0, 0:100 and 25:75) at 40 °C for 240 minutes OD and continued for hot air drying to 20% moisture content at 50 °C. Samples were vacuum-packed and stored at 4 °C. Textural, physicochemical properties (moisture content, aw), flavonoids, vitamin C and microbial stability were determined. Results showed that samples treated with sucrose-sorbitol mixtures (0:100 and 25:75) able to extend the shelf life of pineapple up to 35 days and 49 days at bacteria count ≤106 CFU/g and yeast and mould ≤104 CFU/g, respectively. While, sucrose (100:0) treated pineapples only able extend the shelf life up to 14 days. In conclusion, reducing water activity of sorbitol able to extend the shelf life of osmodehydrated pineapple.

Keyword: Osmotic dehydration; Sorbitol; Vitamin C; Bromelain; Shelf life