Storage behaviour of stabilized lime juice subjected to different preservative treatments

H S Jayawardene*, B M K S Thilakarathna and K B Palipane

Institute of Post Harvest Technology, Research and Development Centre, Jayanthi Mawatha, Anuradhapura

Experiments were conducted to determine the effects of different types of preservatives and different storage conditions on the storage behaviour of thermally stabilized lime juice.

Thermally stabilized (by heating at 90 ° ± 3 °C for 1 min) lime juice samples were first treated with preservatives, 0.05% sodium metabisulphite (SMS) and 0.09% sodium benzoate (SB), and then filled into sterilized glass bottles (190 mL). The effects of those treatments were evaluated under three different storage conditions; sealed-ambient (SA), unsealed-ambient (UA), and unsealed-refrigeration (UR). Chemical (pH. titrable acidity, and vitamin C), microbiological (total plate count), and organoleptic properties (colour, odour, taste, and overall acceptability) were analyzed immediately after the preparation and then at 1 month intervals up to 5 months for SA condition and at 2 week intervals up to 8 and 18 weeks for UA and UR conditions respectively.

Analysis results revealed that SMS was the most effective preservative under all three storage conditions. It maintained the stabilized lime juice with acceptable qualities for more than 5 months, 4 months and 6 weeks under SA, UR and UA conditions respectively. The value for untreated samples was 1 month under all three storage conditions. Although results indicated that SB was much effective as an antimicrobial agent, was less effective on preserving the organoleptic properties under SA and UA storage conditions, compared to the untreated samples.

*hemanthika@hotmail.com Tel: 025 2222344