

ID: 161

Production and Characterization of Probiotic Mixed Fruit Juice Using Selenium Infused Lactic Acid Bacterial Starter, *Sorghum bicolor* (Poporo) Extract, *Ananas comosus* (Pineapple), *Annona muricata* (Soursop) Juices

Oluwasubomi Ayinke Samson, Alao Omoniyi Solomon, Victor Folarin
Bukola Christianah, Adebayo-Tayo

Department of Microbiology, University of Ibadan, Ibadan, Nigeria

Abstract

Incorporation of selenium and probiotics into dairy products provides the grounds for selenium deficient, lactose intolerant and dairy allergic individuals to have access to probioticated and selenium supplemented foods that can improve their health. This study aimed at production of selenium supplemented mixed probiotic juices from *Sorghum bicolor* extract, pineapple, and soursop juices using selenium infused lactic acid bacteria as starter. Probiotic viability, physicochemical, antagonistic, antioxidant properties were evaluated during four weeks storage. The selenium infused lactic acid bacteria was viable throughout storage time. Increase in color intensity, total soluble solids, vitamin C content, lactic acid production, and antioxidant activity was observed. Also, reduction in pH and specific gravity was observed during storage time. The lactic acid contentment ranged from 8.02 – 72.06 mg/L, 9.08 – 171.15 mg/L, 18.02 – 112.11 mg/L, 9.08 – 126.10 mg/L and 9.08 – 135.12 mg/L (Dy 0, 1, 2, 3 and 4 weeks) respectively. There was significant difference ($p \leq 0.05$) in the proximate composition of the probioticated mixed juice samples during storage. The crude protein and crude fibre at week 0 and 4 ranged from 0.57- 1.84% and 0.26 – 1.53%, 0.30 – 0.65% and 0.15 – 0.80%. The juice samples has antagonistic activity against *Staphylococcus aureus* and *Escherichia coli*. In conclusion, the mixed fruit juice supported viability, vitamin C development, antagonistic and antioxidant potential of the probiotic candidate used. The probioticated selenium supplemented fruit juice can be used as a functional foods and nutraceutical with health beneficial effect.

Keywords: *Sorghum bicolor* extract, probiotication, selenium infused lactic acid bacteria

