

Determination of microbiological and chemical parameters of ready-to-serve fruit drinks and carbonated beverages commercially available in Sri Lanka

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As no previous studies have been reported in Sri Lanka to date related to the above title, this project was undertaken to create public awareness of the hazards associated with ready-to-serve fruit drinks and carbonated beverages. This study evaluated some chemical and microbiological parameters of three popular brands of ready-to-serve fruit drinks and three popular brands of carbonated beverages manufactured in Sri Lanka as per SLS specifications (SLS 729:2010 UDC 663.81 and SLS 183 : 2013 UDC 663.64.057). The ready-to-serve fruit drinks and carbonated beverages were screened quantitatively for the presence of sulphur dioxide and benzoic acid content using titrimetric method (iodometric) and sublimation/titration, respectively. The level of heavy metals such as lead and cadmium were determined using atomic absorption spectrophotometry. The microbiological parameters, aerobic plate count (APC), yeast and molds, total coliforms and *Escherichia coli* were conducted as per ISO (International Organization for Standardization) methods. In this study three different batches from each brand was tested microbiologically and for heavy metals (one sample from each batch) whereas three different batches from each brand was analyzed in triplicate for preservatives (three samples from each batch).

The study showed the presence of sulphur dioxide in all six brands (0-20 mg/kg), which was less than the limit (50 mg/kg). Benzoic acid was also found in all six brands (7-10 mg/kg) which was less than the limit (120 mg/kg). The APC was less than the limit in most samples. Yeast and molds were detected in two brands and coliforms in all six brands. Cadmium, Lead and *Escherichia coli* were absent in all six brands. This proved all six brands were free from fecal contamination and heavy metals.

Since certain microbiological parameters did not conform to SLS specifications we suggest that the manufacturers should improve quality control procedures adopted in their organizations to ensure the product quality.

Keywords

ready-to-serve fruit drinks, carbonated beverages, microbiological parameters, preservatives.

References

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