

#### **OP 44**

### **Analyzing variations of five iced tea infusions in accelerated storage conditions**

Wettimuny DC<sup>1,2\*</sup>, Wickramasinghe I<sup>1</sup>

<sup>1</sup>*Department of Food Science and Technology, Faculty of Applied Sciences, University of Sri Jayewardenepura, Sri Lanka,*

<sup>2</sup>*Department of Biosystems Technology, Faculty of Technology, University of Sri Jayewardenepura, Sri Lanka.*

**Background:** Due to the prominence of tea as a beverage, many other variations of tea have been created and iced tea is one of the leading tea infused beverages in the world. Changes in the quality of iced tea products over time may reduce consumer preference. The quality of iced tea depends on physicochemical parameters such as antioxidant activity, Polyphenol Content (TPC), titratable acidity, Total Soluble Solids (TSS) and turbidity.

**Objective:** The objective of this research was to analyze the physicochemical variations of five iced tea products in accelerated storage conditions.

**Method:** The tested Sri Lankan iced tea types were aqueous extracts of black tea, green tea, peach-pear flavoured black tea, lemon-lime flavoured black tea, and honey-ginger flavoured green tea. The accelerated storage conditions were induced by keeping tea samples in an incubator at 37<sup>0</sup>C for three months. Physicochemical tests were used to analyze the variations in the iced tea types. The free radical scavenging ability was determined by the DPPH assay, TPC was measured via Folin-Ciocalteu method, titratable acidity was measured according to AOAC method, the brix value was monitored using a handheld refractometer, whereas the turbidity was noted using a turbidimeter.

**Results:** Findings showed that antioxidant activity decreased from 20.1-32.5 gallic-acid-equivalent (GAE) µg/ml to 9.1-20.3 GAE µg/ml. Polyphenol content reduced from 10.1-20.9 GAE µg/ml to 9.35-19.25 GAE µg/ml. Acidity levels decreased from 14.4-17.3 g/l to 10.1-11.5 g/l, and turbidity has ascended from 0.8-5.9 Nephelometric Turbidity Units (NTU) to 2.7-10.2 NTU. Brix values decreased starting from 6.6-7.4°Bx and ending with 6.2-7.0°Bx. TSS generally signifies the polyphenolic compounds and added sugar level of the tea, and the turbidity implies the possibility of cream formation.

**Conclusion:** It was concluded that during accelerated storage, antioxidant, polyphenol and organic acid degradation has occurred, cream formation has taken place, and total solid content has decreased in the chosen iced tea types.