ASSESSMENT OF ADULTERATIONS AND QUALITY OF BLACK TEAS AVAILABLE IN SRI LANKAN MARKET

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Adulteration is a critical issue in Sri Lankan tea industry. Black tea is adulterated using sugar, glucose, sodium bicarbonate, and ferrous sulphate to improve its colour and using sand, iron fillings and leather flakes to improve its bulk. Identification of adulterated tea is vital to protect the consumer from adverse health risks and to safeguard the reputation of Ceylon Tea. The present study focused to identify adulterants and to assess the consumer preference for black teas available in the Sri Lankan market. Tea grades BOP, BOPF and Dust were bought from the local market representing both packeted and loose forms. Tea samples were evaluated for sugar and colour adulterants using Phenol sulphuric method and water column method, respectively. The presence of iron fillings and leather flakes were assessed by shaking a magnet through the sample and by flame method, respectively. Adulteration using sand was detected by the presence of sediments in water. Sensory evaluation with 30 untrained panellists was conducted for each tea grade separately. Data were analysed using Minitab software in completely randomized design. Sugar adulteration data were analysed in one-way-ANOVA, while sensory and colour adulteration data were subjected to the Friedman test. Out of 29 tea samples tested, 83% of tea samples showed a clear colour change with normal water, confirming the colour adulteration. Absorbance values of Phenol sulphuric method were significantly different ($p<0.05$) among samples and 07% of tested tea samples were adulterated with sugar. None of the samples was adulterated with iron fillings, leather flakes, or sand. Sensory evaluation scored varying levels of consumer preferences for different tea brands for their external and brew characters. The present study attempts to increase the vigilance of the public on possible adulterants of tea and to make awareness on simple techniques to detect adulterated teas.

Keywords: Colour adulterants, Sugar adulterants, Tea quality