

IDENTIFICATION OF SYNTHETIC DYES IN SELECTED CONFECTIONARIES AND BEVERAGES IN JAFFNA DISTRICT

Dilrukshi P.G.T.^{1*}, Munasinghe D.H.H.¹, Silva A.B.G.² and
De Silva P.G.S.M.²

¹ Department of Botany, Faculty of Applied Sciences,
University of Sri Jayewardenepura, Sri Lanka

² Department of Nutrition, Medical Research Institute, Sri Lanka
thusharani.dilrukshi@gmail.com

Food dyes are commonly used in foods and beverages to improve appearance, enhance the appetizing value and consumer's acceptance. Recently synthetic food dyes have been increasingly used than natural food dyes by food manufactures to attain certain properties such as low cost, more stability, high colour intensity, *etc.* Varied foods and beverages available in the market may contain some non-permitted synthetic dyes and high level of permitted synthetic dyes, which lead to severe health problems such as mutation, cancer, reduced hemoglobin concentration, allergic reactions, irritability, restlessness and damaging body organs. Therefore, Ministry of Health in Sri Lanka made regulations to restrict adulteration of non-permitted synthetic dyes as food colourants under Extraordinary Gazette 2011, Food Act No. 26 of 1980. It states only nine synthetic food dyes are permitted and colour composition cannot exceed 100ppm as a single component or in combination. This study was conducted for the identification of synthetic dyes in most consumable confectionaries and beverages available in Jaffna district. A total of 110 samples were collected from retail shops in each Medical Officer's of Health (MOH) areas in Jaffna district. Samples were analyzed by preliminary treatment, wool extraction, Thin Layer Chromatography (TLC), and UV-Visible Spectrophotometry with permitted synthetic colour standards mentioned in food act, Sri Lanka. The results of the study found that all beverages (100%) and majority of confectionaries (85%) contained only permitted synthetic food dyes. Few confectionaries (7%) did not contain any synthetic food dye and some confectionaries (Instant red jelly) (8%) contained non-permitted dyes which was not complied with any of permitted synthetic food dyes according to the food act Sri Lanka. Tartrazine (41%) was the most used synthetic food dye among both confectionaries and beverages. According to the results, usage of synthetic food dyes is high among confectionaries and beverages and some unidentified dyes were found in some confectionaries in the Jaffna district.

Keywords: *Synthetic food dyes, Non-permitted dyes, Thin Layer Chromatography, UV-Visible Spectrophotometry*