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INVESTIGATION OF RHODAMINE B PERCENTAGE IN MARKET FOOD PRODUCTS USING SPECTROPHOTOMETRIC ANALYSIS

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Abstract

Rhodamine B (RhB) is a synthetic dye widely used in the textile and paper industries as a colouring agent. Despite its known toxicity and carcinogenic properties, it is sometimes illegally used in the food industry as a colouring additive. This study aimed to detect and quantify RhB in selected food samples from the market food products such as Cotton candy, Rosa gulla, Bundi, Red jelly, Rose flavored syrup, Muscat, Tomato sauce, Faluda powder, Rose coloured pani pori, Dosi and Sweet based on their high market availability in the region. Preliminary tests, including solubility and red fluorescence tests, were conducted to identify RhB contamination in the selected food samples. From the identification test Cotton candy, Muscat and Rose flavored syrup were given positive results. Qualitative analysis was carried out using staining tests and TLC techniques, which indicated the possible presence of RhB contamination in Cotton candy, Muscat, and Rose-flavored syrup. The quantitative analysis was conducted using UV-Vis spectrophotometry to identify the maximum absorbance of RhB at a maximum wavelength of 545 nm. The concentrations of RhB were found to be 0.8084 ppm in Cotton candy, 0.7099 ppm in Muscat, and 0.0201 ppm in Rose flavored syrup. The corresponding percentages were 0.266% for Cotton candy, 0.234% for Muscat, and 0.0066% for Rose flavored syrup. Among the tested samples, Cotton candy exhibited the highest percentage of RhB contamination. These findings indicate the presence of RhB contamination in both Cotton candy and Muscat. Therefore, it is essential to enhance monitoring and regulatory measures in line with the Food Act, to safeguard public health and consumer safety.

Keywords: *Rhodamine B, Staining Tests, TLC, UV-Vis Spectrophotometry, Cotton Candy*