

**DETERMINATION OF TARTRAZINE AND SUNSET YELLOW
IN DIFFERENT BRANDS OF SOFT DRINKS USING HIGH
PERFORMANCE LIQUID CHROMATOGRAPHY DIODE
ARRAY DETECTOR (HPLC-DAD)**

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ABSTRACT

DETERMINATION OF TARTRAZINE AND SUNSET YELLOW IN DIFFERENT BRANDS OF SOFT DRINKS USING HIGH PERFORMANCE LIQUID CHROMATOGRAPHY DIODE ARRAY DETECTOR (HPLC-DAD)

Synthetic dyes are commonly used by manufacturers of beverages including wine, cordial, fruit juice and soft drinks to give colour and to make the products more tempting. However, many studies had reported that synthetic dyes are harmful to human health especially when taken more than the Acceptable Daily Intake (ADI). Besides that, manufacturers do not state the amount of synthetic dyes added into their products. This study was conducted to determine the amount of food dyes which are tartrazine and sunset yellow in five different brands of local carbonated soft drinks; A, B, C, D, and E by using high performance liquid chromatography diode array detector (HPLC-DAD) and to compare the amount of both food dyes in different brands of local soft drinks. Linearity, limit of detection (LOD) and limit of quantification (LOQ) were studied. Linear calibration curves were obtained for tartrazine and sunset yellow in the range of 1.00 mg/L to 200.00 mg/L. The linear regression equation for standard tartrazine was $y = 10.953x + 17.03$ while linear regression equation for standard sunset yellow was $y = 7.934x + 2.94$. The coefficient of determination (R^2) for tartrazine and sunset yellow were 0.9997 and 0.9999, respectively. The LOD for tartrazine and sunset yellow were 0.52 mg/L and 0.41 mg/L, respectively. The LOQ for tartrazine was 1.73 mg/L and for sunset yellow was 1.35 mg/L. Sample B contained the highest amount of the tartrazine which is 19.28 mg/L while the other samples, tartrazine was not detected. Sample D contained the highest amount of sunset yellow which is 57.38 mg/L and sample A contained the lowest amount of sunset yellow which is 30.17 mg/L. This study showed that amount of both food dyes in this study are below the maximum level based on Europe Union (EU) Regulation, thus all the samples in this study are safe to be consumed by consumers.