

ABSTRACT

VALIDATION OF UV-Vis SPECTROPHOTOMETRIC METHOD FOR DETERMINATION OF FORMALIN IN SHELLFISH

Formalin, an illicit additive substance, was added on certain food product as a preservative. Therefore, the determination of formalin in food product such as shellfish is very important. UV-Vis Spectrophotometric method with chromotropic acid as a reagent has been used for determination of formaldehyde in this research. The optimum result were obtained when 1.2 ml solution of 0.5 % disodium chromotropic (as color-forming reagent) and 6 ml concentrated sulfuric acid (as catalyst) were added and the absorbance was measured after 15 minutes at 567 nm. The result shows linear regression was $y = 0.3706x + 0.0480$; $r = 0.9990$ > table $r = 0.9170$ for $n=6$ ($p < 0.01$) and $V_{x_0} = 2.88$ ($V_{x_0} \leq 5$ %), the detection and quantitation limits were found to be 0.0063 ppm and 0.0192 ppm respectively, the recovery percentage was 65.42 % and the coefficient of variation was 1.69 %. The determination of formalin in three shellfish samples which were taken from a market in Surabaya showed that two of these samples were positive of formalin and the concentration was 17.53 $\mu\text{g/g}$ and 25.22 $\mu\text{g/g}$ respectively.

Keyword : Validation, UV-Vis Spectrophotometry, formalin, shellfish