

## ABSTRACT

### VALIDATION OF UV-Vis SPECTROPHOTOMETRIC METHOD FOR DETERMINATION OF BORAX IN PALM SUGAR

Borax is often misused as a preservative on certain food product such as palm sugar. Therefore, it is necessary to determine borax content in palm sugar. UV-Visible Spectrophotometric method with curcumin 0,125 % as a reagent has been used for determination of borax in the present study including some parameters i.e selectivity, linearity, limit of detection and quantitation, precision and accuracy. Optimalization of method is required to find the optimum condition before validation. The optimum condition of UV-Visible Spectrophotometric method was performed in the wavelength of 547 nm. It was needed 1,0 ml curcumin 0,125 % and 1,0 ml glacial acetic acid-concentrated sulfuric acid. Then the absorbance was observed after 70 minutes. In that condition, the equation of regression was  $y = 1,3127x - 0,0994$  ( $r = 0,9690 > r$  table 0,878), ( $p = 0,007$ ;  $p < 0,01$ ) and  $V_{xo} = 15,51\%$ . The limit of detection and quantitation were found to be  $9,7 \times 10^{-4}$  ppm and  $2,94 \times 10^{-3}$  ppm respectively, while the accuracy gave average recovery of 102,32 % and the precision gave variation coefficient of 0,140 %. The determination of borax in palm sugar was carried out in three sample which was taken from a traditional market in Surabaya. The result showed that three samples was positive of borax and the concentration was 9,69-12,3 mg/g in wet sample.

Keyword : Validation Spectrophotometric UV-Vis method, preservative, borax, palm sugar