VALIDATION OF UV-VISIBLE SPECTROPHOTOMETRIC METHOD FOR THE DETERMINATION OF TETRACYCLINE CONCENTRATION IN SHRIMP

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ABSTRACT

The use of Tetracycline to treat bacterial diseases in aquaculture with excessive amounts has the potential to encourage the emergence of antibiotic-resistant bacteria. The purpose of this study is to ensure that this method can be used as an option to determine the concentration of Tetracycline in shrimp. UV-Visible spectrophotometer instruments are used to measure the absorption of electromagnetic radiation at several Tetracycline concentrations. The optimal wavelength obtained for Tetracycline analysis was 273 nm. The parameters of the validation methods used in this study are selectivity, linearity, precision, accuracy, the limit of detection, and limit of quantitation. The proposed method showed good selectivity that the maximum absorption of Tetracycline was not affected by the absorption of other compounds contained in the sample. Linearity test with a range of analytes concentrations of 0.375 ppm to 3.75 ppm produced r = 0.9982. The accuracy (%recovery) of Tetracycline was 111.52%, while the precision (CV) was less than 16%. The limit of detection value was 0,288 ppm, and the limit of quantitation value was 0,96 ppm.

Keywords**:** Tetracycline, UV-Visible Spectrophotometer, Method validation, Shrimp

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