

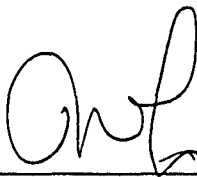
**EXTRACTION AND CHARACTERIZATION OF  
COLLAGEN EXTRACTED FROM THE WASTE OF SIN  
CROAKER (*Johniecop sina*)**

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This Final Year Project Report entitled “Extraction and characterization of collagen extracted from the waste of sin croaker(*Johniecop sina*)” was submitted by Maidzatul Afiqah binti Mahadzir in partial fulfillment of the requirements for the Degree of Bachelor of Science (Hons.) Food Science and Technology, in the Faculty of Applied Sciences, and was approved by



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## ABSTRACT

### EXTRACTION AND CHARACTERIZATION OF COLLAGEN EXTRACTED FROM THE WASTE OF SIN CROAKER (*Johniecop sina*)

Fish waste is major by-product of the fish processing industry, causing wastage and pollution, thus utilizing the waste of sin croaker which is mainly used in the fish processing industry could provide a valuable source of collagen. The primary objective of this study was to determine the yield of collagen and physicochemical characteristic of collagen sin croaker waste at different duration of extraction time which is three and five days. The extracted collagen were also compared with the commercial collagen. Collagen was extracted from the waste of sin croaker using acid solubilisation method. The yields percentages obtained from the three and five days of extraction were 2.74 and 3.36% respectively. Both collagen was most soluble in low pH (pH 1-2) and low salt concentration (2% NaCl). Diffrential Scanning Calorimetry (DSC) and viscosity measurement were used to determine the thermal stability of the collagen. The extracted collagen for three and five days showed good thermal stability as it denatured at 31.31 and 32.10<sup>0</sup>C for the three and five days of extraction, respectively. SDS-PAGE indicated that both collagens are type I collagen as they contain  $\alpha 1$ ,  $\alpha 2$  chains,  $\beta$  and  $\gamma$  components. As a conclusion, collagen extracted for five days are better than three days due to high yields and higher thermal stability.