

Chemical Composition and Characterisation of Skin Gelatins from Two Different Freshwater Fish Species in Osun State of Nigeria: A Comparative Study

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Abstract: *In this study, a comprehensive extraction of gelatin from the skin of two fresh water fish species from Osun State of Nigeria (7.5876° N, 4.5624° E), namely: tilapia and catfish by acid extraction was carried out. The extraction was carried out through series of steps involving rinsing in water, dipping in sodium hydroxide (0.1 M), and soaking in 0.1 M acetic acid at room temperature of 25 °C, followed by a final extraction with water at 45 °C for 12 h. The results obtained herein showed that the fish gelatins were comparable to the fish gelatins contained in past reports. The proximate analysis showed that the protein content of gelatin extracted from catfish gelatin contains 7.45% and that of tilapia gelatin contains 72.95%. It was found that tilapia fish skin gelatin is more hydrogen bonded than that of catfish skin gelatin. The foaming properties of tilapia fish gelatin (foaming capacity: 28%, foaming stability: 18%) were higher than the foaming properties of catfish gelatin (foaming capacity: 14%, foaming stability: 10%). The gelatins in this study contained all essential amino acids with glutamate being the most prominent ones. The viscosity at 40 °C was low in catfish gelatin (2.49 cP) compared to tilapia fish gelatin (3.58 cP). From this result, it can be concluded that gelatin from tilapia fish can act as better foaming agent as compared to gelatin extracted from its catfish.*

Keywords: *Fish skin, gelatin, tilapia, catfish, viscosity, amino acid composition*