

Seasonal Variations in The Biochemical Composition of *Johnius Amblycephalus* (Family: Scianidae) And Implications for Nutritional Assessment and Food Preservation

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ABSTRACT

The Scianidae family, also referred to as croakers, is a substantial coastal fisheries resource in tropical and temperate waters (Liting et al., 2022). With 66 genera and 286 recognized species, this perciform family is well-known for having a wide representation worldwide (Froese et al., 2018). The demersal fish *Johnius amblycephalus* stands out among the Scianidae family (Froese and Pauly, 2022). It is commonly caught in Pakistan's coastal areas using gillnet, seine net, and trawl net techniques. Its use as diet among the local population in Pakistan and worldwide due to its affordable price and delicious flavor.

Keywords: Cu (II), Adsorbent, Agricultural Waste, Kinetics

OBJECTIVE

The purpose of this study was to examine the dynamic seasonal fluctuations in the tissue of *Johnius amblycephalus*'s biochemical composition.

MATERIAL METHOD

The four distinct seasons, were examined to understand how the nutritional profile of *Johnius amblycephalus* fluctuates throughout the year. The main biochemical components i.e Proteins, Carbohydrate and Lipids was estimated in *Johnius amblycephalus* through the following prescribed methods: Proteins was analysed by Bradford Method (Bradford, 1976), Carbohydrates according to the procedure of Dubuis, (1956) and lipid estimated with the protocol of Folch et al., (1957) respectively.

RESULT

Analysing the fish's proximate composition provided interesting new information about its nutritious composition. Protein content exhibited notable variation across seasons, with the highest recorded during the Pre-Monsoon (115.30 mg/ml) and Southwest Monsoon (110.2 mg/ml) and the lowest during the Post-Monsoon (32.42 mg/ml). Carbohydrate content also fluctuated seasonally, with the highest concentration in the Post-Monsoon (5.87 mg/ml) and the lowest in the North East Monsoon (2.80 mg/ml). The percentage of lipid content per gram of tissue showed significant differences, with the highest lipid content observed during the Southwest Monsoon (22.07%) and the lowest during the Pre-Monsoon (15.26%). Alongside, the moisture content also displayed variation across seasons, reaching its peak during the Post-Monsoon (95.80%) and its lowest point was observed during the Pre-Monsoon (23.60%).

CONCLUSION

The nutritional value of *Johnius amblycephalus* throughout the year is revealed by this data, which is beneficial for making diets and dietary recommendations. It also affects fisheries management, supporting in the resource's sustainable utilization, and guides food preservation techniques to extend the shelf life and improve

quality. These results emphasize how important it is to take seasonal fluctuations in fish species' biochemical composition into account in order to support sustainable fisheries and maximize the use of fish in a variety of diet and nutritional applications.

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