Study of Biochemical Composition of *Soleidae* (SOLE) Fish of Delhi –NCR Region

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Abstract—*The fishes are one of the most important vertebrate, provided rich protein sources for human and several animals and important elements in the economy of many countries. Fish diversity of river essentially represents the fish faunal diversity. Rivers conserve a rich variety of fish species which supports the commercial fisheries. India is rich in diversity of fishes. The aim of the study was to explore the biochemical composition especially Lipid, protein, carbohydrate of fish fauna of Delhi-NCR region. In this the biochemical composition of Soleidae (SOLE) is studied.*

1. INTRODUCTION

India is one of the mega biodiversity countries in the world and occupies the ninth position in terms of freshwater mega biodiversity (Mittermeier et al., 1997). In India there are 2,500 species of fishes of which 930 live in freshwater and 1,570 are marine (Kar et al., 2003). Day (1994) described 1418 species of fish under 342 genera from British India. Jayaram (1981) listed 742 freshwater species of fishes coming under 233 genera, 64 families and 16 orders from the Indian region. Talwar (1991) estimated 2546 species of fish belonging to 969 genera, 254 families and 40 orders from India. Recently, Jayaram (1999) grouped and estimated 852 species of fishes belonging to 71 families and 16 orders from the Indian region. Shrinking resource of agriculture, mounting pressure on land is making us to look for new avenues of producing food and ensure adequate nutrition to the masses. India is one of the 17 mega biodiversity hot spots contributing 60-70% of the world's biological resources. With third position in fisheries and second in aquaculture, the country has high potentials in the sector for rural development, domestic nutritional security, employment generation, gender mainstreaming as well as export earnings, that only few other activities can provide.

2. A LOOK AT THE STATE
(Different categories of water bodies in Uttar Pradesh)

Water Resource	Area (Lakh/Ha)	Area under Utilization(Lakh/Ha)	Utilization % (Lakh/ Ha)
Rivers and Canals	7.20	--------	--------
Large and Medium Reservoirs	1.38	1.25	90.50
Lakes	1.33	0.05	3.70
Ponds	1.61	1.09	67.70

Total fish biodiversity of U.P. contributes approximately 14.68% of the national fish biodiversity. According to a report as occurrence of 87 species from eastern part of U.P while 111 fish species have been recorded from U.P. and Bihar described 30 fish species in Allahabad stretches of river Ganga. Out of the total fish diversity reported from Uttar Pradesh, about 57 fishes may be categorized as small indigenous groups which grow to size of 25-30cm in mature or adult stage of their lifecycle. Many of the fishes under small indigenous groups also highly important for food and nutrition, and important source of various products of pharmaceutical and other commercial value.

3. MATERIALS AND METHODS

Samples were collected from different ponds and rivers of Delhi and Noida. The specimens were properly cleaned in the laboratory and the total length, total weight and sex and maturity stages was determined. For biochemical analysis, a portion of the muscle from the widest part of the body (devoid of bones) after removal of skin was taken from males and female separately and used for moisture, protein, fat and carbohydrate determination.

4. ESTIMATION OF MOISTURE CONTENT

Estimation of the moisture content carried out by drying the pre weigh wet samples at 60 - 80 °C in a thermostat until a stable weight is reached. The difference in weight was calculate and expressed as percentage moisture content of the sample. Percentage to be calculated by the following formula:-

Percentage (%) of moisture = Wet weight- Dry weight × 100 Wet weight

5. ESTIMATION OF LIPID CONTENT

Total lipid was estimated by the method of Barnes and Blackstock (1973).

6. REAGENTS

Chloroform – Methanol (2:1) mixture, 0.9% NaCl

7. ESTIMATION OF PROTEIN CONTENT

Protein was estimated by the method of Lowry et al. (1951)

8. ESTIMATION OF TOTAL CARBOHYDRATE CONTENT

The total carbohydrate will estimated by the method of Carroll et al. (1956)

9. REAGENTS

10% Trichloro acetic acid (TCA), Anthrone reagent

10. FINDINGS AND OBSERVATIONS

SAMPLE NAME: SOLE

Analysis	Sample Qty. (gm)	Results	Unit
Moisture	300	70.12	gm/100gm
Protein	300	20.91	gm/100gm
Total Carbohydrates	300	0.63	gm/100gm
Lipid	300	1.38	gm/100gm

It is seen that in Sole fish of Delhi-NCR region the total protein content is approximately around 20.91gm per 100gm , total Carbohydrate content is approximately around 0.63 gm per 100gm and total lipid content is approximately around 1.38gm per 100gm.

11. CONCLUSION

Conservation of fish diversity is essential to maintain ecological/nutritional and socio-economic equilibrium. Species diversity and genetic variability are necessary for the long term maintenance of stable, complex ecosystem and species. Therefore, the conservation policy should promote the management practices that maintain integrity of aquatic ecosystem, endangerment and enhance recovery of the threatened species.

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