

**STUDY ON BIOCHEMICAL COMPOSITION IN FRESH WATER FISH *ANABAS TESTUDINEUS*,
MASTACEMBELUS ARMATUS. FROM PAITHAN, DISTRICT- AURANGABAD,
MAHARASHTRA STATE, INDIA.**

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ABSTRACT

Biochemical composition such as carbohydrate, Protein and Lipid were estimated in the fresh water fishes *Anabas testudineus*, *Mastacembelus armatus*. The maximum levels of carbohydrate were noted in *Anabas testudineus* and minimum level was noted in *Mastacembelus armatus* fish. The maximum level protein were noted in *Mastacembelus armatus* and low level of protein was observed in *Anabas testudineus*. The maximum level of lipids was present in *Mastacembelus armatus* and minimum level of lipids was noted in *Anabas testudineus*.

KEY WORDS: Biochemical Composition, *Anabas testudineus*, *Mastacembelus armatus*, fish

INTRODUCTION

Fish have rich source of essential nutrients required for supplementary food. Eyo (2001) observed that Carbohydrates are the most economical and inexpensive sources of energy for fish diets Cui and Wootton (1988) explain that protein is a part of fish feed formed by linkages of individual amino acids and helps in the protein requirements for each species. Lipids are high-energy nutrients that can be utilized partially to spare protein in aquaculture feeds. Lipids supply about twice the energy as proteins and carbohydrates. Lipids typically comprise about 15% of fish diets, supply essential fatty acids (EFA) and serve as transporters for fat-soluble vitamins. Huynh (2007) observed that fish is having high poly unsaturated fatty acids than animal fat. The high content of polyunsaturated fatty acids in fish are useful in reducing serum cholesterol. The present work shows that biochemical composition in muscle contents of freshwater fish, *Anabas testudineus*, *Mastacembelus armatus* collected from paithan shows seasonal variation. The fish undergo seasonal changes in growth and energy is reserved for maintenance, somatic growth, and reproduction. The lipid, protein is accumulated during somatic growth. Johansen et al. (1997) reported that depletion in protein and lipid level during gonadal growth. The present work provides nutritive value and significant of food value of *Anabas testudineus*, *Mastacembelus armatus*. Rodriguez Gonzalez et al (2006). Ananthi et al (2015) worked on biochemical content of selected fresh water fishes.

MATERIALS AND METHODS

The fishes were collected from paithan fish market and brought to laboratory without any mechanical injury for biochemical analysis. Biochemical contents like (Protein, Carbohydrates and Lipids) of fishes. The fishes are dissected out and then biochemical were estimated from fresh muscles of fishes. The Protein are estimated by Lowry method Lowry et al. (1951). Carbohydrates are estimated (Glycogen content) by using anthrone method Hedge et al. (1962) and Lipids are estimated by Cox and Pearson (1962) method.

RESULTS AND DISCUSSION

The biochemical composition of fishes collected from paithan shows species specific pattern in their muscle protein, glycogen and lipid contents. The fishes showed successive decrease in protein and lipid contents from June to May. Whereas muscle glycogen content of fishes shows significant increase during June to May are shown in Table 1. Reay (1933), reported that deterioration of protein is linked with denaturation of fish protein are linked with frozen fish. Das (2009) reported that Lipid content of Rohu (*Labeo rohita*), Grass carp (*Ctenopharyngodon idella*) and Tilapia (*Oreochromis mossambica*) were studied in fresh condition as well as freezing condition in different species showed different lipid level at different condition like Temperature, Freezing time, Location size. Padmawati and Prema Kumari (2006) reported that changes in biochemical contents of muscles of fish species may also be attributed to alterations is due to increased glycogenesis in muscles and accelerated conversion of liver glycogen into muscle glycogen. Chamundeshwari Devi and Vijayaragahwan (2001) observed that changes in biochemical parameters in the fishes are linked to their habitat and nutritive values of each species. Shankar and Kulkarni (2006) and Shengde and Mane (2006) studied the correlation of GSI value with increase of protein and lipids contents this increase is occur due to vitellogenesis in ovary and spermatogenesis in testes due to hormones during prebreeding and breeding seasons

of the fish. The biochemical contents of fish provides information on physiological and nutritive values of fishes but also helps in better management practices in inland fisheries and prevention of fish capture in breeding season to maintain the diversity of fishes. The present study concluded that the *Mastacembelus armatus* recommend to diabetes and Heart risk patients for malnutrition people. The availability of these fish in the natural fresh water is low, so we recommend fishing farmer to cultivate these fish in large-scale.

Table 1. Biochemical contents (Protein, Carbohydrates and Lipids) in muscles (mg/gm of tissue) *Anabas testudineus*, *Mastacembelus armatus* collected from paithan.

Sr.No	Months	Protein	Glycogen	Lipid
01	June - Sept	122.4 ± 5.6	18.2 ± 2.7	10.8 ± 5.8
02	Oct - Jan	106.8 ± 1.4	19.3 ± 5.8	9.5 ± 2.6
03	Feb - May	90.8 ± 2.5	21.8 ± 3.5	7.0 ± 4.2

Mastacembelus armatus

Sr. No	Months	Protein	Glycogen	Lipid
01	June - Sept	114.4 ± 2.8	18.8 ± 3.8	15.9 ± 3.8
02	Oct - Jan	94.8 ± 5.8	20.8 ± 3.0	11.8 ± 4.0
03	Feb - May	86.4 ± 3.8	23.48 ± 4.4	9.8 ± 2.0

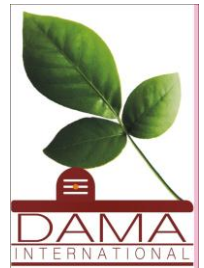
Each figure is Mean ± S.D. of 10 observations.

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