

EFFECT OF TEMPRETURE ON BIOCHEMICAL CONTENTS OF FRESH WATER MUSSELS LAMELLIDENS MARGINALIS FROM NANDED REGION MAHARASHTRA.

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ABSTACT

This investigation evaluate that there is relation between changes in temperature which directly affects the biochemical contents of mussels *Lamellidens marginalis* such as Protein, glycogen and lipid. With increase in temperature Protein, glycogen and lipid was found maximum in summer and it was minimum in winter.

Key words- temperature, protein, glycogen, lipid and *Lamellidens marginalis*.

INTRODUCTION

In freshwater bivalves, are economically important animals, they are consumed as a food and used for pearl culture. They are the high source of protein, essential minerals and vitamin. The shell consists of two calcified valves which are united dorsally by a hinge. The shell is bilaterally symmetrical and margins are distinguished into anterior, posterior, dorsal and ventral sides. In *L. marginalis* the shell is oblong-ovate, thin and smooth. . Bivalves are filter feeder constitute high food value and having maximum amount of biochemical constituents of body tissue in terms of quantity and quality. (Rivonker, C.U. and A.H. Parulekar, 1995).

MATERIALS & METHODS

The bivalves, *Lamellidens margianlis* was collected monthly from Nanded region, Maharashtra. Estimation of protein, glycogen and lipid were monthly from foot, gill, and hepatopancreas. Water temperature was measured by using Celsius Thermometer (from 0°C - 50°C) **Trivedy & Goel, (1986) and APHA (2000). Estimation of protein** by using **Lowry method** (Lowry *et al.*, 1951). **Estimation of glycogen** Glycogen by using anthrone reagent method (De-Zwaan and Zandee (1972). **Estimation of lipid** by using Menthol- Chloroform method by (Bligh and Dyer, 1959).

RESULT & DISCUSSION

Maximum water temperature was found in May (30°C) and minimum in December (18°C). Range of variation of water temperature was 12°C. Average water temperature was 23.9 °C in the year 2013. Table shows maximum protein content in summer from *Lamellidens marginalis* and minimum in winter, maximum protein content was found in hepatopancreas that is 304± 0.0065 mg/gm and minimum in foot 20± 0.0104 mg/gm. Glycogen content was more during summer season in all tissues. It was increased gradually from March to May and from July onwards it was decreased gradually and reached to lowest level in winter. It was again gradually increased. maximum glycogen was found during summer season in hepatopancreas (309.62± 0.5184 mg) Minimum amount of glycogen was found in foot 31.32± 0.0023 in winter season. The lipid content was maximum in foot and mantle during summer and minimum in monsoon and winter seasons. maximum values of lipid observed in foot 14.74 ± 0.6228, in gill 7.87± 0.1528 and in hepatopancreas 4.4± 0.5477. Minimum value of lipid observed in foot 2± 0.4472, in mantle 2.6± 0.5477, in gill 2.1± 0.2683 and in hepatopancreas 0.92± 0.10463 show in table. This study showed that as temperature rises it increase protein, glycogen and lipid content and when temperature decrease it decreases protein, glycogen and lipid from different tissue. This study showed the direct relation between the biochemical content of mussel with the temperature. Because availability of adequate quantity of food during summer.

TABLE: SHOWS MONTHLY CHANGES IN, PROTIEN, GLYCOGEN AND LIPID CONTENT DUE TO TEMPRETURE FROM LAMELLIDENS MARGINALIS.

| MONTH | PROTIEN | | | GLYCOGEN | | | LIPID | | | TEM °c |
|-------|----------------|----------------|----------------|-------------------|-------------------|-------------------|-------------------|-----------------|----------------|-----------|
| | F mg/gm | G mg/gm | HP mg/gm | F mg/gm | G mg/gm | HP mg/gm | F mg/gm | G mg/gm | HP mg/gm | |
| Jan | 26± 0.0178 | 29± 0.0054 | 41± 0.0148 | 36.27± 0.0079 | 36.27± 0.0136 | 50.59± 0.0230 | 2.6± 1.5165 | 3.4± 0.5477 | 3± 1.3416 | 20 |
| Feb | 26± 0.0228 | 41± 0.0089 | 50± 0.0650 | 46.00± 0.0005 | 47.29± 0.0035 | 53.37± 0.0029 | 4.2± 0.9898 | 7.87± 0.1528 | 4.2± 0.8366 | 24 |
| Mar | 103± 0.0924 | 187± 0.6507 | 287± 0.0258 | 71.32± 0.3687 | 58.32± 0.2429 | 93.40± 0.1714 | 13.28± 0.04472 | 4.4± 0.5477 | 4.4± 0.5477 | 25 |
| Apr | 271± 0.0367 | 298± 0.0030 | 304± 0.0065 | 121.14± 0.1959 | 143.98± 0.4481 | 214.77± 0.4548 | 14.4± 0.8944 | 6.6± 0.5477 | 4.2± 0.4472 | 26 |
| May | 263± 0.0206 | 295± 0.0657 | 298± 0.0083 | 137.22± 0.0009 | 275.57± 0.0778 | 309.62± 0.5184 | 14.74 ± 0.6228 | 4.8 ± 0.4472 | 2.8± 0.4472 | 32 |
| Jun | 261± 0.0155 | 288± 0.0499 | 294± 0.0532 | 71.27± 0.0181 | 80.34± 0.0151 | 285.11± 0.0277 | 12.62± 0.9311 | 4.6± 0.5477 | 2.6± 0.5477 | 30 |
| July | 164± 0.0576 | 200± 0.0310 | 229± 0.1353 | 36.27± 0.0131 | 36.27± 0.0048 | 50.29± 0.0004 | 12.58 ± 0.3834 | 4.3 ± 0.1028 | 2.6± 0.5477 | 28 |

| | | | | | | | | | | |
|------------|-----------------|----------------|----------------|------------------|------------------|------------------|-------------------|------------------|------------------|----|
| Aug | 57± 0.1175 | 133± 0.0593 | 162± 0.6035 | 34.59± 0.1046 | 35.72± 0.0005 | 40.40± 0.0004 | 11.66± 0.01788 | 3.6± 0.5477 | 2.4± 0.5477 | 27 |
| Sep | 55.8± 0.0106 | 123± 0.0011 | 142± 0.0025 | 34.59± 0.0016 | 34.59± 0.1046 | 36.27± 0.0005 | 8.48± 2.5014 | 3.23± 1.1303 | 2.4± 1.6431 | 26 |
| Oct | 46.5± 0.0136 | 65± 0.0853 | 88± 0.1790 | 33.48± 0.0011 | 33.48± 0.001 | 38.02± 0.0010 | 6.44 ± 3.1033 | 2.6± 05477 | 1.6± 0.5477 | 25 |
| Nov | 20± 0.0104 | 45± 0.0193 | 88± 0.1790 | 33.48± 0.001 | 32.95± 0.0038 | 39.20± 0.0005 | 6.54± 2.0628 | 2.36± 0.08944 | 1.23± 1.7474 | 22 |
| Dec | 20± 0.0104 | 29± 0.0452 | 29± 0.0054 | 31.32± 0.0023 | 26.23± 0.0081 | 32.39± 0.0048 | 2± 0.4472 | 2.1± 0.2683 | 0.92 ± 1.0463 | 20 |

(F- foot, G- gills, HP- hipatopancreas)

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