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COMPARETIVE STUDY ON ESTIMATION OF LIPID FROM FRESH WATER BIVALVES LAMELLIDENS MARGINALIS AND LAMELLIDENS CORRIANUS FROM GODAVARI RIVER MAHARASHTRA

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ABSTRACT

In comparative study on Lipid estimation from *Lamellidens marginalis* and *Lamellidens corrianus* result showed that *Lamellidens marginalis* have maximum lipid contents from foot 8.58 ± 1.1262, Mantal 4.71 ± 0.6984gill 3.00 ± 0.5014and Hepatopancreas 2.69 ± 0.8539 as compared to *Lamellidens corrianus.* Whereas *Lamellidens corrianus* having lipid from foot 7.06 ± 0.9990, mantal 3.82 ± 0.4454, Gill 4.11 ± 0.4564 and Hepatopancreas 2.86 ± 0.4741. Comparative study showed that maximum amount of Lipid found from *Lamellidens maginalis* and minimum amount of Lipid from *Lamellidens corrianus.*

Key words- Lipid, *Lamellidens marginalis* and *Lamellidens corrianus*

INTRODUCTION

Freshwater bivalves provide significant ecological benefits and recognized as a source of food for human beings (Malathi and Thippeswamy, 2013). Fresh water bivalves are also used for production of freshwater pearls (Dan and Ruobo, 2002; Englund *et al*., 2008; Janakiram, 2008). The biochemical composition of molluscs mainly studied to estimate the nutritive status and also information of reproductive biology. Protein play a vital role in every aspect of the structural and functional characteristics of the organism (Shaikh, 2011). Glycogen is the primary energy store in bivalves (Naimo *et al*., 1998). Lipids are major sources of metabolic energy and essential

compounds for the formation of cell and tissue membranes and they are important in the process of egg production (Dongre and Kurhe, 2013).

MATERIALS AND METHODS

Lamellidens marginalis and *Lamellidens corrianus* were collected from river Godavari, Nanded Maharashtra. Collected mussels are kept in laboratory condition for acclimatization. After acclimatization mussels were dissected and 1 gram of each tissue such as mantel, Gill, foot and Hepatopancereas were taken for estimation of lipid. Lipid content was estimated by using Menthol- Chloroform method by (Bligh and Dyer, 1959). The amount of lipid present in the samples is determined by using following formula.

Amount of lipid =

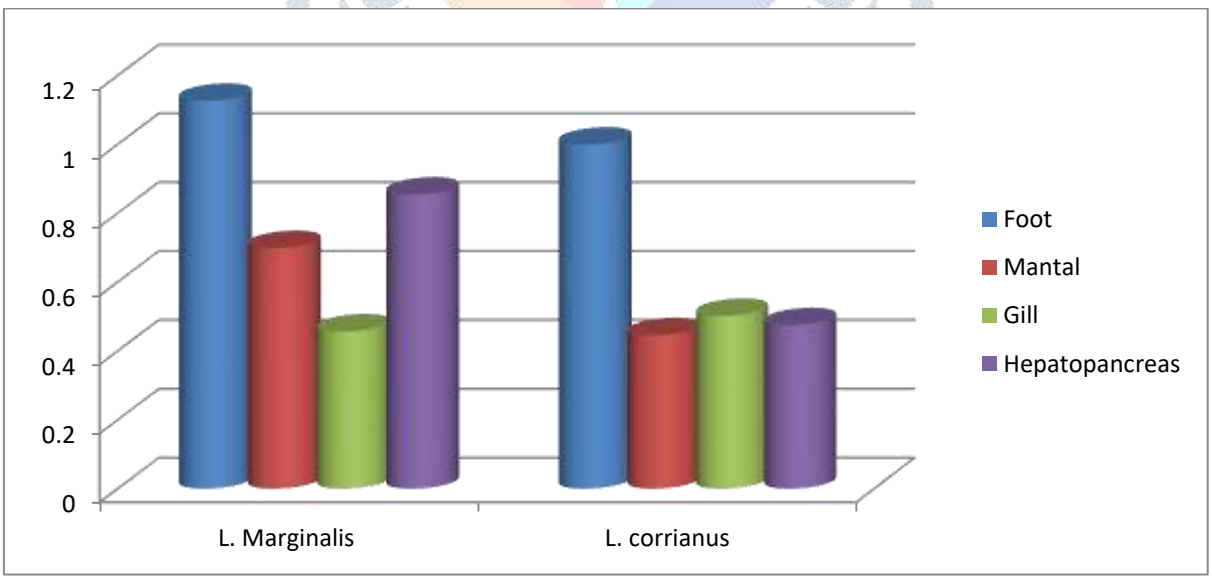
RESULT AND DISCUSSION

Lipid content in foot, mantel, gill and hepatopancreas of *Lamellidens marginalis* and *Lamelliudens corrianus* were studied and expressed as mg of lipid per gm weight wet tissue and are shown in table no.1 and graph no. 1 . The lipid content was maximum in foot and mantle during summer and minimum in monsoon and winter seasons. In comparative study on Lipid estimation from *Lamellidens marginalis* and *Lamellidens corrianus* result showed that *Lamellidens marginalis* have maximum lipid contents from foot 8.58 ± 1.1262, Mantal 4.71 ± 0.6984, gill 3.00 ± 0.5014 and Hepatopancreas 2.69 ± 0.8539 as compared to *Lamellidens corrianus.* Whereas *Lamellidens corrianus* having Lipid from foot 7.06 ± 0.9990, mantal 3.82 ± 0.4454, Gill 4.11 ± 0.4564 and Hepatopancreas 2.86 ± 0.4741. Comparative study showed that maximum amount of Lipid found from *Lamellidens maginalis* and minimum amount of Lipid from *Lamellidens corrianus.* Chart gives the clear idea about the differences in Lipid content from different tissue of *Lamellidens marginalis* and *Lamellidens corrianus*. Both the mussels were from same environmental condition shows difference in Lipid content from different body parts.

Table 1: shows changes in Lipid content from different tissues of Lamellidens marginalis and Lamellidens corrianus

Tissue	L. Marginalis	L. Corrianus
foot	8.58 ± 1.1262	7.06 ± 0.9990
Mantal	4.71 ± 0.6984	3.82 ± 0.4454
Gill	3.00 ± 0.5014	4.11 ± 0.4564
Hepatopancreas	2.69 ± 0.8539	2.86 ± 0.4741

Chart 1: shows comparative Lipid content from different tissues of Lamellidens marginalis and Lamellidens corrianus



REFERENCES

Beninger Peter G. and Albert Lucas (1984): Seasonal variations in condition, reproductive activity, and gross biochemical composition of two species of adult clam reared in a common habitat: *Tapes decussates* J. *Exp. Mar.* Biol. *Ecol.,* 1984, Vol. (79): 19-37p.

Bligh E.G. & Dyer W.J. (1959): A rapid method of total lipid extraction and purification. *Canadian Journal of Biochemistry and Physiology*, 37(8): 911-917p.

Chinanna B. D. (1981): Some aspects of biology of Snail Gyraulus. *Thesis submitted to Ambedkar University Aurangabad.* 264p.

Dan, H. and Ruobo, G. (2002): Freshwater pearl culture and production in China. *Aquacul. Asia.* **7:** 6.

Dongre S. B., A. R. Kure (2013): change in lipid content, in the hepatopancreas of cerebralectomied freshwater bivalve mussel *Lamellidens corrianus. The Ecoscan* Special issue, Vol. IV: 75-78p: an international quarterly journal of environmental sciences.

Dongre S. B. And D.L.Sonwane (2014): Seasonal Changes In Lipid Content, In The Adductor Muscles Of Cerebralectomied Freshwater Bivalve Mussel *Lamellidens Corrianus*. *IOSR Journal of Pharmacy and Biological Sciences (IOSR-JPBS)* Volume 9, Issue 1 Ver. II: 29-32p.

Dongre, S. B. and Kurhe, A. R. (2013): Change in lipid content, in the hepatopancreas of cerebralectomied freshwater bivalve mussel *Lamellidens corrianus*. *The Ecoscan.* **IV:** 75-78.

Englund, D., Brunberg, A. and Jacks, G. (2008): A case study of a freshwater pearl mussel (*Margaritifera margaritifera*) population in central Sweden. *Geogr. Ann.* **90:** 251.

Haldar Ankhi, Tanmoy Kumar Dey, Pubali Dhar1and Jana Chakrabarti (2014): Exploring the Nutritive Values of the Fresh Water Mussel *Lamellidens marginalis* as Potential Functional Food. *IOSR Journal of Environmental Science, Toxicology and Food Technology* Volume 8, Issue 8 Ver. III, 01-07p.

Jadhav M. R., A. R. Gulave and A. N Vedpathak. (2012): Changes in the lipid contents of freshwater bivalve, *Lamellidens marginalis* from Godavari river during different seasons (M.S) *Journal of Experimental Sciences*, 3(9): 27-29p

Janakiram, K. (2008): Freshwater Pearl Culture Technology Development in India. *J. Applied Aquaculture*. **13(3-4):** 341-349

Khalua Ranajit Kumar, Satyajit Tripathy, Bhagyasree Paul and Debabrata Bairy (2014): Seasonal Variation of Carbohydrate, Protein and Lipid of Common Freshwater Edible Gastropod (*Bellamya bengalensis*) of Medinipur District, West Bengal. *Research Journal of Biology*, 2: 49 – 52p.

Malathi, S. and Thippeswamy, S. (2013): The proximate and mineral compositions of freshwater mussel *Parreysia corrugata* (Mullar, 1774) from Tunga River in the Western Ghats, India. *G.J.B.A.H.S.* **2(3):** 165- 170.

Naimo, T. J., Damschen, E. D., Rada, R. G. and Monroe, E. M. (1998). Non lethal evaluation of the physiological health of unionid mussels: methods for biopsy and glycogen analysis. *J. North American Benthological Society.* **17(1):** 121-128.

Shaikh, M. J. (2011): Seasonal variations in biochemical constituents in different body tissues of freshwater bivalve mollusc, *Lamellidens marginalis* (Lamark) from Pravara River in Maharashtra. *The Bioscan.* **6(2):** 297-299.