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Modifications in Protein content of Freshwater molluscs bivalve Corbicula Fluminea all through three seasons from kurla dam Tal- Mahad Dist. -Raigad

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Abstract

The present study aims to investigate the effect of climate change on aquatic ecosystem of Fresh water bivalve Corbicula Fluminea changes or variations that occurs overtime often in a random seasons in protein percentage in soft body connective tissues were collected from kurla dam, tal-mahad Dist raigad. Detected through observations under the throughout three various environmental seasons such as Summer, monsoon, & winter seasons. It occurs changes or variations that in climates in natures. imbalance of the protein content on its impact on various types of tissues are group of similar cells that work together to perform specific function an organism. They are the building blocks of organs and are essential for maintaining overall health. Connective tissues, like, Gill, Gonad, Digestive gland, Mantle, Foot and Mantle connective tissues. The Protein percentage would you like to know more about in highest observed in gonads tissues throughout all the three periods of the year. That characterised summer typically beings around 25march and end 15 june, monsoon or rainy typically beings around 25 june and end 30 November and winter typically beings around 15 December and end 15 march, whereas mantle shows lowest values of protein. There are many things that could variations in the values of proteins assess three seasons.

Keywords: Corbicula Fluminea, Protein assess, seasons, & kurla dam.

Introduction

Freshwater bivalve also known as freshwater mussels are a type aquatic molluscs that play a crucial role in maintaining ecosystem balance introducing non native freshwater bivalve can have significant environmental economic and social impact. Secondary influence. Climatic changes in biochemical composition has been reported by many workers. (Gabbott and Bayne (1973) [4], determined seasonal changes in biochemical composition of adductor muscle, mantle, siphon and foot in Mytilus edulis. From India, relatively very few investigators such as (Dhamne (1975) [1]. Proteins in an impotent organic constituent which play important role in metabolism in organism and metabolic activity. (Nagabhusanam and Mane(1978)[7]. The main conclusion is that properly applied biochemical modulation schedules may lead to successful use in the clinic Mytilus viridis have reported changes the biochemical composition correlating with annual reproductive cycle of bivalves. Protein is a essential organic constituents of animal tissue & it plays a important role in cellular metabolism (Peter, 1991) [10]. They extremely versatile in their action and interaction during metabolism of protein, amino acids, enzymes and co enzymes proteins are the tissue repair and action of drug s or heavy metals in aquatic mediu. (Harper 1977)[5].

Materials and Methods

The aquatic fauna of freshwater bivalve molluscs, Corbicula Fluminea were collected from kurla dam tal mahad dist raigad M.S. Which is about at the distance of 04 K. M. away from mahad and 27 K.M from raigad fort of M.S. In between rainy season (13 August to 20 September), winter (10 December to 10 January) and summer (12 April to 15 May) which is the time of 12 month of duration in year 2022-2023 Selected for laboratory experiments. Immediately after the introduction of the laboratory, these mussels were brushed and washed with fresh, clean water to remove algal biomass, central and other waste. The washed animals were then kept under constant ventilation for 12 hours. For biochemical analysis, animals were dissected and soft body fabrics such as gills, gonads, digestive glands, feet, and coat cloths were removed. 120 mg of all wet connective tissue collected for biochemical analysis. Protein is Lowry et al. (1951) [6]. Use of beef serum albumin (BSA) by default. Results are expressed as milligram content per 120 mg wet connection tissue. Standard deviations were calculated during variations of seasons.

Triplicate values of each biochemical constituents were subjected for statistical confirmation using student 't' test (Dowdeswell, 1957) [2]. The percentage differences were also calculated during every season.

Results

The protein percentage detected on experimental work has been given in table-1. The protein percentage is higher found in gonad in all the three seasons. During monsoon seasons, the protein content from gonad (12.277 ± 0.322) & mantle (5.585 ± 0.187) was found to be maximum & minimum protein content was found and in digestive gland moderate protein assess observed (10.857 ± 0.475). In During winter season, the protein content was found to be minimum in mantle (3.478 ± 0.458) & maximum in Gonad (10.587 ± 0.673). In summer season maximum protein content was found in Gonad (10.587 ± 0.673) maximum and in minimum in mantle (5.486 ± 0.156). The protein content was found to be maximum in the gonad during all season, while gill & mantle shows minimum protein content in all seasons. The maximum protein content was found in monsoon season in all the soft body parts & minimum was found in winter season. In summer season the protein content was found in moderate amount.

Table 1: Variation of protein content of *Corbicula fluminea* from Kurla-Damm in different seasons of tissues from 2022 to 23

Tissues	Monsoon		Winter		Summer	
	August	September	December	January	April	May
Gill	6.127 ± 0.755	6.456 ± 0.179	4.655 ± 0.147	4.685 ± 0.235	6.123 ± 0.148	5.123 ± 0.148
Gonad	12.277 ± 0.322	12.062 ± 0.272	10.587 ± 0.673	10.754 ± 0.585	10.587 ± 0.673	15.647 ± 0.476
Digestive system	10.857 ± 0.475	10.468 ± 0.217	7.582 ± 0.357	7.758 ± 0.256	10.154 ± 0.655	7.774 ± 0.172
Foot	8.789 ± 0.985	8.121 ± 0.785	5.179 ± 0.658	5.985 ± 0.985	8.487 ± 0.588	9.765 ± 0.859
Mantle	5.585 ± 0.187	5.485 ± 0.785	3.478 ± 0.458	3.247 ± 0.677	5.486 ± 0.156	4.123 ± 0.148

Discussion

The existing take a look at said because the freshwater bivalve *Corbicula Fluminea* there is enormous changes in the protein content in exclusive frame tissues consistent with seasonal versions. Organic parts like protein act as key materials for exceptional metabolic activities. Proteins are the most complicated and maximum plentiful natural molecules inside the living cellular, making up greater than half the dry mass of the mobile. Although the fundamental structure of all proteins is comparable, a giant array of different proteins with diverse function is found in the organic gadget. Proteins are composed of linear chain of amino acids, which can be amphoteric molecules containing at the least one carboxyl group and one amino agencies. It detected proteins percentage length in monsoon season, that is correlated with maximum physiological activities of animal length this season. All the frame organs display minimal protein values in the course of wintry weather season, which can be due to sedentary existence without tons sports. The quantity of protein present in extraordinary tissues that is closely related with food availability and gonadal improvement that is due to boom in drift and turbidity of water environmental factors are accountable for growth of animals. Comparable results are discovered by using (Pandit (2005) [9] by means of *Corbicula Fluminea* of kurla dam at mahad due to publicity of mantle and foot to high temperature. The have a look at revealed that during term of electricity conservation. The organic would be exported to make compensatory adjustments to both the components of energy gain and energy loss fate of changes in the environmental conditions (Dr. Vedpathak, 1989) [3]. The physico chemical environment has profound impact on its biotic components in aquatic ecosystem. It controls diversity, biomass & spatial distribution of biotic communities with respect to time & space. Change in environment cause stress to the aquatic organism (Newell, 1973) [8]. Most of the animal faces nutritional uncertainties, marked seasonal variations which alerts rates of metabolism & activity. In the present study in *Corbicula Fluminea* protein level was significantly changed during different seasons. The protein content was maximum in gonads due to presence of gametes in them. In winter the protein content was found low in all soft body parts of *Corbicula Fluminea* due to sedentary life without much activity. Due to gametogenesis in monsoon, the protein content was found maximum. The amount of protein present in different tissues is closely linked with food availability and gonadal development. In the present study of *Corbicula Fluminea* it is observed that biochemical components present in different soft body tissues, shows seasonal fluctuations and more correlated with fluctuations in the environmental conditions along with developments of fertility rate.

Conclusion

Proteins are complex molecules made up of amino coessential for numerous parts of body building and repairing connective tissues which includes muscle pores and skin and bone generating enzymes, hormones and different biomolecules and preserving immune device consisting of assist cell growth and department in mollusca bivalve high protein demand of gonadal tissue are found in throughout tissues in entire seasons due to the fact gonads are exceptionally precious tissues of boom, fecundity fee and development of bivalves.

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Conflicts of Interest

The authors declare that there are no conflicts of interest regarding the publication of this paper.

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