

**BIOCHEMICAL CHANGES IN THE OVARY OF *Liza abu* DUE TO
INFECTION WITH *Myxobolus pfeifferi* (Chidosporida: Myxosporida)
FROM BASRAH, IRAQ
2- Moisture, Total Protein, Fat and Glycogen**

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ABSTRACT

The changes in the biochemical composition of the ovary of *Liza abu* infected with *Myxobolus pfeifferi* were studied. The changes in the ovary are marked by a significant increase in moisture and total protein content concurrent with a significant decrease in fat and glycogen.

In general, the changes in the biochemical composition occurred by the infection are same to those occurring during starvation of fishes.

INTRODUCTION

Only very little information are available on the changes in the biochemical composition of fish tissue in relation to diseases. The few available publication are those of (1, 2, 3, 4, 5a, 6b, 7, 8, 9 and 10. Such accounts were seems to be limited in Iraq, (11) and (12). In the present study an attempt has been made to determine the changes in the biochemical composition of the ovary of *Liza abu* caused by the Myxosporida *Myxobolus pfeifferi* in Basrah province.

MATERIALS AND METHODS

Thirty specimens of *Liza abu* were collected from Garmat - Ali river located near Basrah University in Garma. The fishes transport a live to the laboratory in plastic containers during August 2000. The biochemical analyses were carried out on fish ranging from 14.5 - 16.5 Cm total length. Six uninfected and six infected were used for the analyses.

Moisture content of the ovary was determined according to ⁽¹³⁾ and fat content by using the soxhelet method using Dichloromethen and methanol according to ⁽¹⁴⁾. Glycogen content was determined according to ⁽¹⁵⁾ which was adapted by ⁽¹⁶⁾. Total protein content was calculated from total nitrogen content estimated by Micro-Kjeldahl method⁽¹⁷⁾.

RESULTS

It is clear from the results presented in Table 1 that the conspicuous change in the biochemical composition of the ovary of infected fish increase in moisture content ($p < 0.05$) and a concurrent decrease fat and glycogen content ($P < 0.05$). It is also clear increase in total protein content ($p < 0.05$).

Table 1.: showing the Biochemical composition of the ovary of *Liza abu* infection with *Myxobolus pfeifferi* (mean \pm S.E)

		*	**	
PO.05 PO.01	Uninfected fish	Infected fish	T value	Biochemical +
Moisture	70.73 \pm 0.606	73.75 \pm 0.391	4.2705926**	
Total protein	16.045 \pm 0.264	17.616 \pm 0.225	2.78062 *	
Fat	3.898 \pm 0.199	2.826 \pm 0.059	5.257**	
Glycogen	0.321 \pm 0.016	0.085 \pm 0.01	12.633374**	

+ Moisture Glycogen Fat and total protein

DISCUSSION

Decrease in fat, glycogen content and increased in moisture, total protein content of fishes (Table 1) as a result of protozoan infection were reported by workers^(8,9). The changes in the biochemical composition of the ovary of *Liza abu* associated with the ovary infection by *Myxobolus pfeifferi*, simulating the picture of depletion of energy reserves during starvation⁽¹⁸⁾. Depletion of the basic energy reserves may be related to the energy requirements of both the parasite and host⁽⁷⁻⁸⁾.

There is likely to be an increased demand for the energy reserves for the normal activities of fish weakened by infection^(5b). The impaired function of such vital organs as the ovary, is prone to incapacitate the infected fish to effectively replenish the required energy reserves that could be obtained by way of food, despite of its availability^(5a, 6b). The observed increase in total protein content of the infected fish is attributable to the hypertrophy fish of the connective tissue of the infected ovary as a result of the inflammatory reaction on the part of the host to encapsulate the invading element. This connective tissue cyst remains firmly attached to the ovary tissue and it had, therefore, to be included in the biochemical analysis^(6b).

التغيرات الكيموحياتية في مبيض سمك الخشن المصابة بلطفيلي الابتلي البوغى *Myxobolus pfeifferi* بصرة، عراق

٢-الطوية، البروتين الكلي، الدهن والكالكوجين

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الخلاصة

تم دراسة التغيرات الكيموحياتية في مبيض سمك الخشن *Liza abu* نتيجة لاصابتها بلطفيلي *Myxobolus pfeifferi* وقد لوحظت زيادة معنوية في محتوى لارطوية والبروتين الكلي مع نقصان معوي في محتوى الدهن والكالكوجين بصورة عامة التغيرات التي تحدث في التركيب الكيموحياتي بسبب الإصابة يمكن ان يشبه تلك التي تحصل خلال تجويع الاسماك.

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