

**EFFECT OF SOME ENVIRONNEMENTAL AND
PHYSIOLOGICAL FACTORS ON SOME SEXUAL HORMONES
OF *MUGIL CAPITO* DURING THE BREEDING SEASON**

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During the breeding season, experimental changes in some environmental factors were accompanied by hormonal changes in the plasma of *Mugil capito*. The present study includes testosterone as a main androgen and estradiol as a main estrogen. The present study revealed the increase in photoperiod was accompanied by a decrease in plasma testosterone and estradiol levels in *Mugil capito* (table 1). The present work also revealed that the plasma levels of testosterone and estradiol are inversely proportional to the temperature (table 2). KADMON *et al.* (1985) reported that under a constant long photoperiod (16L+8D), estradiol levels were generally low in *Sparus auratus*. The salinity is an important factor for *Mugil capito*, since the fish does not spawn before entering the sea.

From table 3, it is obvious that the increase in the salinity is accompanied by an increase in the plasma testosterone and estradiol levels of *Mugil capito*. The increase in estradiol levels due to the increase in salinity was also observed by QUERAT *et al.*, (1985b). When they place silver eels in a closed system containing artificial sea water, plasma concentration of estradiol were increased greatly in comparison with those of eels kept in fresh water. The plasma levels of the steroid hormones increased greatly after injection with 1 500 IU HCG (table 4).

Table 1. Effect of photoperiod on testosterone (ng/ml) and estradiol (pg/ml) levels of plasma of *Mugil capito* during the breeding season.

Condition	Testosterone ng/ml \pm SD	Estradiol Pg/ml \pm SD
control (6.5L + 17.5D)	0.270 \pm 0.04	59 \pm 20
18L + 6D	0.217 \pm 0.11	29 \pm 13
24L	0.182 \pm 0.03	25 \pm 4
24D	0.183 \pm 0.04	18 \pm 6
L.S.D. at 0.05	0.0123	7.3591

Table 2. Effect of temperature on testosterone (ng/ml) and estradiol (pg/ml) levels of plasma of *Mugil capito* during the breeding season.

Condition	Testosterone ng/ml \pm sD	Estradiol Pg/ml \pm sD
control (17.5 °C)	0.270 \pm 0.04	59 \pm 20
15 °C	0.393 \pm 0.28	59.5 \pm 16
20 °C	0.190 \pm 0.13	41.0 \pm 15
L.S.D. at 0.05	0.0180	2.7352

Table 3. Effect of salinity on testosterone (ng/ml) and estradiol (pg/ml) levels of plasma of *Mugil capito* during the breeding season.

Condition	Testosterone ng/ml \pm SD	Estradiol Pg/ml \pm SD
control 3.4 %.	0.270 \pm 0.04	59 \pm 20
15 %.	0.298 \pm 0.09	58 \pm 32
25 %.	0.311 \pm 0.14	62 \pm 30
35 %.	0.335 \pm 0.06	70 \pm 20
38 %.	0.650 \pm 0.45	71 \pm 47
L.S.D. at 0.05	0.2757	7.9268

Table 4. Effect of HCG injection on the steroid hormones levels. (N.D = not detected)

Condition	Testosterone ng/ml		Progesterone ng/ml		Estradiol Pg/ml	
	F avg. \pm SD	M avg. \pm SD	F avg. \pm SD	M avg. \pm SD	F avg. \pm SD	M avg. \pm SD
Control	0.24 \pm 0.09	0.30 \pm 0.15	2.40 \pm 0.80	0.90 \pm 0.6	71.5 \pm 14.	54 \pm 11.0
Injected	0.48 \pm 0.29	0.67 \pm 0.28	4.60 \pm 2.47	1.60 \pm 0.5	157.5 \pm 23	N.D.

REFERENCES

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