

# EFFECT OF SOME ENVIRONMENTAL AND PHYSIOLOGICAL FACTORS ON THE GONADAL HISTOLOGY OF *MUGIL CAPITO* DURING THE BREEDING SEASON

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During the breeding season, experimental changes in some environmental factors were accompanied by histological changes in the gonada of *Mugil capito*. In an attempt to evaluate the role of environment in reproduction of *Mugil capito*, photoperiod, temperature and salinity controlled experiments were conducted between mid October and late December, during the breeding season.

Histological changes were observed in the present work due to the effect of the studied factors. In the female, the control group which was subjected to the natural conditions showed that the ovary of *Mugil capito* was filled with hyalin oocytes and some immature oocytes in the period of study (spawning season). By increasing the photoperiod, the atretic oocytes predominated and many vacuoles appeared. At continuous darkness, the ovary also became atretic with many large vacuoles.

The oocytes were also affected by the temperature. At 15°C, the yolk was resorbed and a big vacuole was observed in the middle of most oocytes. At 20°C, resorption of the yolk was observed, the oocytes became collapsed with the appearance of a very big vacuole in the middle of the oocytes.

The salinity developed the oocytes at 25‰ salinity. At higher salinity, the immature oocytes became developed. The HCG injection developed the oocytes within one week of the injection. Most of them were observed in the hyaline form. After 10 weeks of the injection, the yolk resorbed and the atretic oocytes predominated.

The result of the present investigation is in agreement with many results, as KADMON *et al.*, (1985) who studied the effect of 2 photoperiod regimes on the gonada of *Sparus auratus* (L.). They found a clear inhibition of gonadal recrudescence under long photoperiod (16L+8D). On the other hand, short photoperiod (6L+18D) initiated vitellogenesis in *Mugil cephalus* (KUO *et al.*, 1974).

In the present investigation, the acclimation of *Mugil capito* to different degrees of salinity or even to the sea water without hormonal intervention was not sufficient for the spawning of this species in captivity. Hence, the present investigation suggests that the *Mugil capito* cannot breed without a combination between more than one factor.

## REFERENCES

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