The induction of maturation of female Grey Mullet (*Mugil capito* Cuv.)

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ABSTRACT. This work is a report of the results obtained from a series of laboratory experiments on induced spawning of the grey mullet (*Mugil capito* Cuv.). Migrating females were collected from lake Edku (40 km to the east of Alexandria) during their exodus to the Mediterranean Sea for spawning (October to December 1989).

Females were injected by carp pituitary and Synahorin. Histological studies were carried out to examine egg maturation before stimulation.

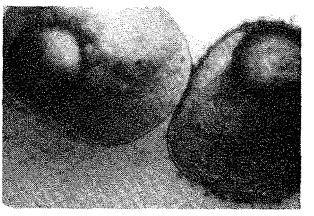

Fig.1. Ripe egg with a single oil droplet.

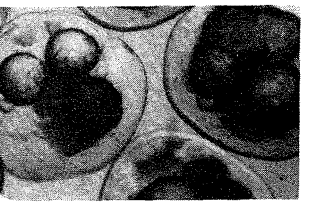

Fig.2. Ripe egg with two or more oil droplets.

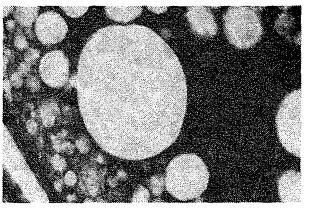

Fig.3. Unripe egg with oil droplets around nucleus.

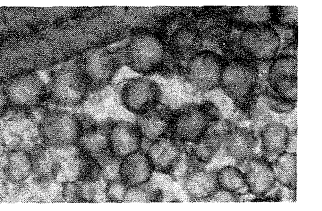

Fig.4. Maturing egg, cytoplasm filled with yolk granules.

Three times injected females gave ripe eggs (Fig. 1) when gently pressed on the belly. Ripe eggs were spherical and transparent. The egg surface smooth and unsculptured. Average egg diameter measured 0.83 mm. A centrally positioned large oil globule measured about 0.33 mm. Most ripe eggs appeared with one prominant large oil globule making them extremely buoyant.

Before release in Petri dish containing sea water many eggs appeared with two or more oil globules (Fig. 2). During examination in sea water, diffusion of oil globules took place. The number of oil globules of mugilids was shown to increase with the manual pressure of artificial stripping (Kuo et al., 1973a). The normal eggs frequently appeared with a single oil droplet (Nash et al., 1974).

The success of the often used induction techniques was extremely connected with the degree of gonad maturation (Hussein, 1982). Not all of the induced females gave positive results when treated with CP and Synahorin. Response to hormonal stimulation was noticed when the histologically examined eggs contained comparatively large oil globules around the nucleus which lost its circularity and began to migrate towards the animal pole. Zona radiata, very thin and externally followed by the epithelial follicle. Connective tissue layer was too thin to observe (Fig. 3).

Negative results were obtained when the eggs contained spherical and centrally positioned nucleus. Cytoplasm filled with yolk granules and surrounded by still thick zona radiata (Fig. 4).

References :

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