

## Histometrical and histophysiological evaluation of female gonad in two fish species yellowfin seabream (*Acanthopagrus latus*) and sole (*Euryglossa orientalis*) from the Mussa creek

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Received: 29.05.2018

Accepted: 23.01.2019

### Abstract

This study aimed to investigate the gonadal tissue structure and sexual hormones in the yellowfin seabream (*Acanthopagrus latus*) and sole (*Euryglossa orientalis*) collected from the Mussa creek. For this purpose, about 1200 fish (10fish/species/station) were collected from five selected stations in Mussa creek including Petrochemical, Gafari, Majidieh, Ghazaleh and Zangi stations and Genaveh Port station (as control). After the biometrical assay, bleeding was conducted from the fish caudal vein and blood samples were moved to heparinized microtubes and serum was separated after centrifuging. Also, tissue samples were taken from the ovary and fixed in formalin. Tissue samples passed through a routine histological process and the tissue sections were prepared and stained with H&E. later, histological sections were studied under light microscope and microphotographs were prepared using Dino lite with Dinocapture software. The steroid hormones including 17- $\beta$ -estradiol (E2) and testosterone (T) were measured using the radioimmunoassay (RIA) method and gonadotropin hormones (GTHI and GTHII) were also measured by IRMA method. The most follicles observed in the ovarian samples of both species from different stations were in previtellogenic stages including chromatin-nucleolus, prenucleolus and cortical alveoli follicles. Also an increase in the interstitial connective tissue and atretic follicles were recorded in the ovarian samples from some stations especially Petrochemical station. The results showed that the level of steroids (E2 and T) was lower in fish from the Petrochemical station than others, while GTHs reached the highest level in these fish. Generally, the most alterations in gonadal tissue structure in both fish species were recorded in the petrochemical station, probably due to waste waters released into the water in this station from various petrochemical and color alkali industries surrounded this station.

**Key words:** *Acanthopagrus latus*, *Euryglossa orientalis*, 17- $\beta$ -estradiol, Mussa creek, Ovary, Testosterone

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