



# Reproductive biomarker to identify endocrine disruption in *Clarias gariepinus* exposed to 4-nonylphenol

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## Abstract:

The present study investigated the hormones concentrations and gonads alteration of *Clarias gariepinus* caused by sublethal concentrations of 4-nonylphenol (0, 0.05, 0.08 and 0.1 mg/l). The changes in the activities of the hormones after exposure to these sublethal doses of 4-nonylphenol referred to endocrine disruption in *Clarias gariepinus* in association with histopathological changes in reproductive tissues. The levels of thyroid stimulating hormone (TSH), triiodothyronine (T<sub>3</sub>), total thyroxine (T<sub>4</sub>), follicle stimulating hormone (FSH), luteinizing hormone (LH) and testosterone concentration significantly decreased ( $P < 0.05$ ) in the treated fish in comparison with control. 17-beta estradiol increased significantly ( $P < 0.05$ ) with 4-nonylphenol concentrations increase. Reduction in the gonadosomatic index was evident with increase of sublethal doses of 4-nonylphenol. The histopathological changes of NP-treated were recorded in gonads of *Clarias gariepinus* reflecting their sensitivity to NP-estrogenic like effects.

## Keywords:

Reproductive Endocrine Disruption 4-nonylphenol *Clarias gariepinus*

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