

Endocrine Disrupting Effects of Nonylphenol Ethoxylates on Plasma Testosterone Levels in Zebra Cichlid (*Cichlasoma nigrofasciatum*)

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Abstract

Hormone disruptors are chemicals that interact with endocrine system in human and especially water aquatic animals. In this study, the effects of nonylphenolethoxylates on plasma testosterone have been investigated in Zebra Cichlid (*Cichlasoma nigrofasciatum*). Fishes were exposed to three concentrations of nonylphenolethoxylates, 10, 50 and 100 µg / l compare to control (0 µg / l) and blank (Ethanol control) in three different size classes (average weight 3±0.1g., 4±0.3g., 5±0.1g.) with 3 replicates. Zebra fish (n= 840) were examined during 60 days in glass aquariums. Blood testosterone levels were analyzed by radioimmunoassay technique. The results showed that all 10, 50 and 100 µg / l nonylphenolethoxylates concentrations have affected the blood plasma testosterone levels. Also, there were significant differences between testosterone concentration in different weight groups (P<0.01). Nonylphenolethoxylates can disrupt plasma testosterone levels with more than 10 µg / l concentration via hypothalamus-pituitary axis.

Keywords: *Nonylphenolethoxylates, Hormone disruptors, Zebra cichlid, Testosterone.*
