



## Effects of *Balanites aegyptiaca* on tadpoles and *Oreochromis niloticus*

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### ABSTRACT

**Objective:** Fingerlings of *Oreochromis niloticus* and tadpoles were exposed to the acute concentrations of aqueous extract of the bark of *Balanites aegyptiaca* (date palm desert) to determine the 96h-LC<sub>50</sub> (lethal concentration 50, concentration that will kill half of the test animals exposed).

**Methodology and results:** The *O. niloticus* (Nile tilapia) was further subjected to sub-lethal concentrations of the plant extract to determine the effect on growth and haematological indices. The time for toxicity disappearance (TTD) was also estimated. The experiments were conducted using the static renewal bioassay technique at UNAAB Fish Laboratory. The 96h-LC<sub>50</sub> for *O. niloticus* was estimated to be 26.22 mg l<sup>-1</sup> while that of Tadpole (*Rana species*) was 13.77 mg l<sup>-1</sup>. The TTD of *B. aegyptiaca* was estimated to be 48 hours. During sub-lethal exposure, there was a slight decrease in the mean body weight and all the haematological parameters as the concentration of the toxicant increased except MCV, MCH, MHC that were more or less equal. However, statistical analysis on these values of haematological indices did not show any significant difference at 5%. The use of *Balanites aegyptiaca* is recommended in control of predators e.g. tadpoles in pond fish culture system because the product is non-toxic to fish at lower concentration, biodegradable and very cheap. The uncontrolled use in open water body for fishing should be prohibited, as the resultant deleterious effects will subsequently lead to death of not only target fish but also other aquatic organism. Hence, contribute to reduction in the biodiversity.

**Conclusion and application of results:** The results of this study shows the toxic effect of *B. aegyptiaca* on *O. niloticus* and Tadpoles. The lethal doses (96h-LC<sub>50</sub>) obtained are 26.22 mg l<sup>-1</sup> and 13.80 mg l<sup>-1</sup> respectively. So, *B. aegyptiaca* powder can be use in selective eradication of aquatic organism to control unwanted predatory species i.e. tadpoles. *B. aegyptiaca* bark powder can be recommended because it is biodegradable and leave no adverse effect on environment.

**Keys words:** *Balanites aegyptiaca*, *Oreochromis niloticus*, Tadpoles, haematological parameters