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Growth performance and genotoxicity effects of *Clarias gariepinus* at varying level of inclusion of walnut shell (*Tetracarpidium conophorum*)

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This study was carried out to evaluate the use of Tetracarpidium conophorum shells on the growth performance, its genotoxic effects, haematological and biochemical parameters of *Clarias gariepinus* juveniles for a period of twelve (12) weeks. Five experimental diets were formulated at 0% (control), 25% (T1), 50% (T2), 75% (T3) and 100% (T4) inclusion of walnut shell respectively. The experiment was carried out in plastic tanks, each treatment having three replicates. The fish in tank T1 (25% inclusion of *T. conophorum*) had the best weight gain with the mean of 33.5±5.8 g and the least was recorded in tank T4 (100% inclusion of *T. conophorum*). The specific growth rate was highest in tank T3 (75% inclusion of *T. conophorum*) with the mean value of 0.46±0.05 g was recorded. The highest feed intake was found in fish fed with 25% inclusion of *T. conophorum*. There was no significant difference in the growth performance of all the treatments. No mortality was recorded in all the experimental tanks. The fish fed with *T. conophorum* showed increased haematological values of haemoglobin, (12.05±1.63 g/dL), red blood cell, (2.785±0.28 µL) and white blood cell, (11.25±4.59 µL) compared to the values of fish fed with control diet with red blood cell, (1.81±1.54 µL) and white blood cell, (5.15±6.57 µL). There was reduction in the haematological value of the fish fed with control feed having haemoglobin, (10.75±8.13 g/dL). The genotoxicity test that was carried out showed that the highest counts of micronucleus were in tank T3 (3057±312.33) while the lowest count of micronucleus was found in tank T0 (1501±346.5^{c}). A significant difference was recorded ($p<0.05$). It was concluded that using *T. conophorum* shells as feed for *Clarias gariepinus* enhances the growth of the fish and has no negative impact on the health status of the fish. Therefore partial replacement of feed with *T. conophorum* should be encouraged.

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