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“Development on the margin”

Utilisation of Graded Levels of Ripe and Unripe Banana in the Diet of African Catfish

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Abstract

Fingerlings of *Heteroclaris* (*Heterbranchus* x *Clarias*) (7.60 ± 0.00 g) were fed ripe and unripe bananas at different dietary levels for a period of 70 days. Nine isonitrogenous (41.0%) diets were formulated; four dietary levels were tested by substitution with four levels of ripe banana (5, 10, 15 and 20%) and the other four with unripe banana, while the control was without the test ingredients. A total of 270 fingerlings were distributed in twenty seven plastic tanks (52.5 cm x 33.5 cm x 21 cm), they were hand-fed *ad libitum* twice daily and the water was changed every other day. The weight gain and feed intake by fish were determined at the end of every week and evaluation of the growth parameters showed that the mean weight gain (MWG) and specific growth rate (SGR) of fish fed diets with banana inclusion performed better than the control except at 20% inclusion of the unripe banana. There was however a decrease in MWG and SGR with increased inclusion of the test ingredients. The feed conversion ratio (FCR), and protein efficiency ratio (PER) recorded significant ($p < 0.05$) reduction in values up to 15% inclusion of the two test ingredients. The evaluation of haematological parameters showed the haemoglobin (Hb) decreased up to 15% inclusion, while the white blood cell (WBC) significantly decreased ($p < 0.05$) up to the highest inclusion level except in the unripe group. The cost of feed increased as the level of the test ingredients increased and there was a significant decrease ($p < 0.05$) in the incidence cost and profit index across the test diets with increased inclusion of the test ingredients. However, banana could be used to replace maize during a season of over abundance. The inclusion of ripe banana in the diet of African catfish fingerlings at different levels tested would not have any negative effect on growth and blood parameters, while unripe banana should not be included beyond 15%.

Keywords: Banana, haematology, *Heterobranchus*, *Heteroclaris*