Effects of dietary *Phaeodactylum tricornutum* supplementation on gustation, stomach histology and growth performance of African catfish, *Clarias gariepinus* (Burchell, 1822)

Gbadamosi, Oluyemi K. and W. Obe Bernadine

[1] Fisheries and Aquaculture Technology Department, School of Agriculture and Agricultural Technology, Federal University of Technology, Akure, Ondo State, Nigeria.[2] Department of Fisheries and Aquaculture Management, Ekiti State University, Ado Ekiti, Ekiti State, Nigeria

Abstract

This study assessed the effects of microalga Phaeodactylum tricornutum supplement on the gustation, stomach histology, growth performance and nutrient utilization of Clarias gariepinus juveniles. One hundred and fifty (150) C. gariepinus juveniles of mean weight 20.05±0.05g were distributed into 15 plastic tanks (40×30×35) cm^3. Five graded levels (0.00 (control), 0.50, 1.00, 1.50, and 2.00g/100g of P. tricornutum supplements were included in the diets of C. gariepinus denoted as Control, PT1, PT2, PT4 and PT5, respectively. Fish were fed for 56 days at 5% body weight. Results at the end of the experiments showed that the highest body weight was recorded in fish fed 1.5g/100g P. tricornutum diets. The best feed conversion ratio, specific growth rate, protein efficiency ratio and percentage survival was found in PT3. There was significant difference ($p<0.05$) in the feed intake of fish with PT4 having the highest feed intake. The stomach histology revealed increase in the gustation cells in the stomach of experimental fish with increasing levels of P. tricornutum supplementation. This study showed that the inclusion of P. tricornutum supplement at 1.5g/100g level in the diet of C. gariepinus juveniles improved the gustation, growth performance and nutrient utilization of C. gariepinus.

Keywords: Microalgae, Aqua feed, Nutrition, Gustation, African catfish

Email: okgbadamosi@futa.edu.ng; bernadine.obe@eksu.edu.ng.

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