

Growth Response and Nutrient Utilization of African Mud Catfish *Clarias gariepinus* (Burchell, 1822) Fingerlings Fed Processed Macroalgae and Macroalgae-Based Formulated Feeds

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Abstract : In aquaculture, feed utilization is an important factor affecting growth of the target species, and thus the success of the aquaculture operation. Growth of *C. gariepinus* fingerlings (weight 1.60 ± 0.05 g; length 4.50 ± 0.07 cm) was monitored in a closed door hatchery for a period of 21 days in an experiment consisting of 4 treatments stocked at 20 fish/10 litre tanks, fed in triplicate twice daily (08:30, 17:30) at 4% body weight with weight changes recorded every 3 days. Treatments were: 1) FeedX; 2) 35% crude protein diet + non enriched *Ulva* spp (11.18% crude protein) (CD + NEU); 3) 35% crude protein diet + enriched *Ulva* spp (11.98% crude protein)(CD + EU) and 4) control diet of 35% crude protein (CD). The production of *Ulva* spp. biomass was cultivated for a period of 3 months. The result shows that the fish fed macroalgal enriched diet had good growth, though no significant difference ($p > 0.05$) was recorded amongst the weight gain, %weight gain, specific growth rates and nitrogen metabolism of diets CD + NEU, CD + EU and CD. Significant differences ($p < 0.05$), were, however, found in the food conversion ratio (FCR) and gross food conversion ratio (gFCR) among the fingerlings across all the different experimental diets. The best FCRs were recorded for control diet (0.79 ± 2.39) and the *Ulva* enriched (1.75 ± 1.34) diets. The results suggest that the fingerlings were able to utilize *Ulva* supplemented with control diet better than the FeedX. We have shown that *Ulva* supplemented diets are good substitutes for formulated and commercial feeds, with potential to be successful fish feed in aquaculture systems.

Keywords : aquaculture, *clarias gariepinus*, growth, macroalgae, nutrient, ulva

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