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Growth of *Clarias gariepinus* fingerlings fed on fixed ration level at different feeding frequencies

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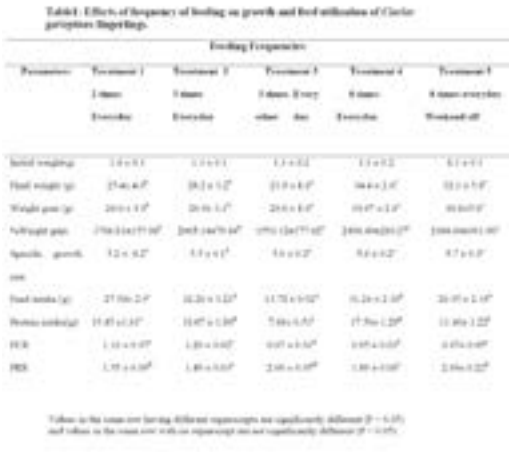
Statement of the Problem: The optimal feeding frequency for *Clarias gariepinus* fingerlings has not been defined and this has led to uncertainty in the feeding routines used by fish culturists. This may lead to overfeeding or underfeeding of fish, which may cause poor feed utilization and reduced growth. Feeding frequency has a major role to play on the success of African catfish culture.

Methodology: *Clarias gariepinus* fingerlings were subjected to five feeding frequencies: 2 times a day, 3 times a day, 3 times every other day, 8 times a day and 8 times a day (weekend off) for 56 days. Ten fingerlings of mean weight 1.3±0.2 g were stocked into each of the fifteen 45 L aquaria with 3 replicates per treatment. Fish were fed on commercial diet containing 56% crude protein at 5% body weight per day.

Findings: The highest percentage weight gain and specific growth rate were observed in fish fed 8 times a day which were significantly higher ($p<0.05$) than all treatments except fish fed 8 times a day (weekend off). The best feed conversion ratio (FCR) was recorded for fish fed 8 times a day (weekend off) and 3 times every other day with values of 0.67±0.05 and 0.67±0.01 respectively. There were no significant differences ($p>0.05$) in the proximate composition of fish carcasses among the treatments.

Conclusion & Significance: This study suggests that *Clarias gariepinus* fingerlings could be fed at a frequency of 8 times a day (weekend off). The two days off feeding will save about one week of feeding and labor cost per month, translating to about 25% saving. These off feeding days may improve the overall quality of the culture water, thus supporting environmental sustainability.



Recent Publications:

1. Yubo Wu, Hua Han, Jianguang Qin and Yan Wang (2015) Effect of feeding frequency on growth, feed utilization, body composition and waste output of juvenile golden pompano (*Trachinotus ovatus*) reared in net pens. Aquaculture Research 46(6):1436-1443.
2. Muhammad Hafeez-ur-Rehman, Khalid Javed Iqbal, Farzana Abbas, Mirza Muhammad Haroon Mushtaq, Fayyaz Rasool and Shakeela Parveen (2015) Influence of feeding frequency on growth performance and body indices of goldfish (*Carrassius auratus*). Journal of Aquaculture Research and Development 6:336.

3. Menghe H Li, Edwin H Robinson, Daniel F Oberle and Penelope M Lucas (2012) Effects of feeding rate and frequency on production characteristics of pond-raised hybrid catfish. North American Journal of Aquaculture 74(2):142-147.
4. Qing Huang, Kai Huang, Yanqun Ma, Xi Qin, Yanhong Wen, Lei Sun and Lining Tang (2015) Feeding frequency and rate effects on growth and physiology of juvenile genetically improved farmed Nile Tilapia. North American Journal of Aquaculture 77(4):503-512.

Biography

Adewolu Morenike Adunni is a Professor of Fish Nutrition and Aquaculture at the Department of Fisheries, Lagos State University, Lagos, Nigeria. She has her expertise in feed management and fish feeding practices. Based on her 34 years of research and teaching experience, she has been able to establish the crude protein requirements of the catfish *Chrysichthys nigrodigitatus* at different stages of growth. She discovered that growth of African catfish, *Clarias gariepinus* were improved when cultured in darkness and feeds were better utilized in monoculture system. She identified local feed ingredients that are suitable for the formulation of catfish diet. Feed costs were reduced by 50% when fishmeal in fish diets was substituted by feed local ingredients. Her current research has established the feeding frequency for the fingerlings of African catfish, *Clarias gariepinus*.

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