

عنوان مقاله:

Research Article: Effect of feeding level on water quality and plankton community structure in the yellow catfish (Pelteobagrus fulvidraco) rearing enclosure ecosystem

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خلاصه مقاله:

Four feeding levels (۴۰%, ۶۰%, ۸۰% and ۱۰۰% of satiation) were designed as the different treatment groups to assess its effects on water quality and plankton community structure in the yellow catfish rearing enclosure ecosystem. The results showed that the weight gain and specific growth rate decreased significantly as the feeding level decreased. The soluble nutrients (except for $\text{NO}_2\text{-N}$) concentrations were significantly affected by the feeding level with the prolonging of rear time. A significant increase in phytoplankton biomass before ۹ days was observed in all the treatments, and then decreased significantly until ۲۱ days, while the zooplankton biomass was significantly increased during the entire experiment. Both the phytoplankton and zooplankton biomass were significantly affected by the feeding level. Our results suggested that the increment of nitrogen compounds before ۹ or ۱۲ days could be explained by the input of compound diets, while the decrement of nitrogen compounds afterward and phosphorous compounds could be explained by the changes of zooplankton biomass. Based on water quality and plankton structure, moderate nutrient restriction (۶۰%-۸۰% of satiation) is a feasible feeding strategy for better growth performance as well as better

water quality and balanced plankton structure. On the other hand, input of moderate phosphorus by dietary supplementation and/or fertilization is necessary in yellow catfish culture both for the better plankton structure and the health of fish. In addition, the polyculture of the minority members of zooplankton filter feeders might be a feasible strategy to control the excessive zooplankton.

کلمات کلیدی:

Feeding, Water quality, Plankton, *Pelteobagrus fulvidraco*, Enclosure ecosystem

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