Review of: "The Growth Performance of Nile Tilapia (Oreochromis Niloticus) Fed Low-Cost Fish Feeds Formulated From Fish By-Products, Fishery By-Catch and Pig Blood-Meal"

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Potential competing interests: No potential competing interests to declare.

The Growth Performance of Nile Tilapia (Oreochromis Niloticus) Fed Low-Cost Fish Feeds Formulated From Fish By-Products, Fishery By-Catch and Pig Blood-Meal

In the study, the feasibility of breeding Nile tilapia fish by using easily available and cheap local animal waste instead of costly fish meal was examined. For this purpose, the study was carried out in a total of 24 tanks, 3 replicated, and 8 different feed groups (including commercial feed), for 11 weeks. 20 fish were placed in each aquarium, and the fish were fed twice a day with daily isonitrogenic experimental diets (5% of the biomass). Weekly measurements were made to monitor fish development. Fish feces resulting from aquaculture and unconsumable feed-based solid wastes were siphoned away from the tanks, and the water lost by siphoning and evaporation was replaced with well water. However, it is not clearly stated how much water was changed. Water quality analysis methods are written, but how often they are performed is not specified.

At the end of the study, it was determined that the most successful fish development occurred in the commercial fish feed group and the lowest fish development occurred in the 100% FM group. In the economic analysis, it was calculated that the cheapest feed among the formulated feeds was the blood meal group, the most expensive feed was the by-products group, and commercial tilapia feed was more expensive than the compared feeds.

However, in the research of previous studies, it was seen that many studies on the use of fish processing sector waste and blood meal in tilapia farming were published. In particular, the FCR findings obtained in this study (FCR = 4.9-6.2) were found to be significantly higher than in previous studies. Considering that the effective FCR value is reported to be in the range of 1.2-2.2, it is clear that there may be a significant nutrient loading for the aquatic ecosystem. Ensuring a sustainable environment is vital for successful and sustainable aquaculture.

Some information conflicts were encountered in the study. For example, it has been reported that the temperature of the region where this 11-week trial was conducted in the greenhouse varied between 20-27°C in the Study Area section. However, it was not understood that the water temperature varied between 16-32°C in the trial setup planned with limited water change. Water temperature variation, which primarily affects FCR and fish development, needs to be more clearly justified. It can be explained whether this temperature difference is due to day/night temperature difference or seasonal

difference, and how the water temperature changes in the specified intervals.

The amount of dissolved oxygen was given in the Mat&Met section at a concentration of 5.5-6.7 ppm. The measured value range in Table 4 is presented in the range of 4-5.5 mg/L. It would be appropriate to give a single value for dissolved oxygen throughout the manuscript. How to time dissolved oxygen measurements (e.g., during the day or after feeding) will be helpful to achieve reproducible results.

Paper presentation language has been prepared quite successfully. However, it was concluded that the originality of this study, which aims to use by-products, by-catch, and blood meal in feeding Nile tilapia fish, which has been the subject of many previous studies, is weak and far from obtaining reproducible results.

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