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.

[DO1] Fish of 0.6 grams should have been fed at least 40% CP diet and at least 4 times, not only twice a day. Feeding rate should have been at least 15% of their body weight (20 would have been better). Of course, as the fry grew, the feeding ration should reduce. Explain clearly if you adjusted the feeding ration as the fish grew bigger.

[DO2] *Locally available low-cost fishery by-catch, fishery by-products, and pig blood meal can be used to replace the expensive commercial feed.* How diverse was the bycatch? Would you get the same relative proportion/ratio of species in weight terms when you collect the bycatch several times over? If not, the results of this study may not be repeatable, especially if the species composition of the bycatch, and thus its nutrition profile, could change from time to time.

[DO3] *The experiment was carried out in a greenhouse so as to maintain* ***warm temperatures during the day.*** Note that I replaced *constant* temperature with *warm temperatures* during the day. It is unlikely that the temperature would remain warm even during the night in a greenhouse if the tanks are not equipped with aquarium heaters.

[DO5] *It was carried out using 30-litre rectangular aquariums placed in a greenhouse to maintain constant temperatures.* See the last comment.

[DO6] Fish of 0.6 grams should have been fed at least 4 times a day, and this rate should have been reduced to three times a day for the rest of the experimental period. It is advisable to feed twice a day only for tilapia of at least 60 grams.

[DO7] *Several references to DM*: Write in full.

[DO8] *Seven iso-nitrogenous diets of 35% crude protein for O. niloticus were formulated using the Animal Feed Optimization Software (AFOS). The ingredients were used to replace soya bean meal in the formulated diets as follows: 100% Fishmeal (diet 1), 50% blood meal (diet 2), 100% blood meal (diet 3), 50% by-products (diet 4), 100% by-products (diet 5), 50% by-catch (diet 6), and 100% by-catch…..* This part is not clear. Please show the treatments (actually, the seven formulations) with a list of all ingredients used in a table.

[DO9] *The feeds were prepared by mixing the macro-ingredients first, which included fish meal, blood meal, by-products*

meal, by-catch meal, with soybean meal, maize meal, and wheat bran, before adding oil. Show these in a table:

[DO10] *The binder was added at an inclusion rate of 2% to increase pellet firmness, improve ……* Name the binder:

[DO11] *(The findings of this research are in agreement with other studies since the crude protein content of fishery by-products ranged from 33.27 – 74.20%)* This is a very wide range. (The industry needs a product with clearly defined and fairly invariable nutritional values to ease feed formulation)

[DO12] *The FCRs in this study were higher than 2, and this may be due to the fact that the experiment was done in winter. The fish did not feed well because the temperatures were lower, ranging from 16 – 32^{0}C.* Looks like the fish were actually underfed, and the nutritional content (protein) of the diets was also sub-optimal

[DO13] ***Table 1.*** *Mean (± SD) proximate composition of feed individual ingredients*

Whereas the data in this table is useful and informative, the major purpose of analyzing the proximate composition of experimental diets is to obtain information for use in formulation. Please add a table of the formulated feeds and how the ingredients were combined in each of the 7 diets to achieve isonitrogenous feeds. To really realize the 35% formulations, you shouldn't have analyzed only the alternative protein sources, but also the other ingredients used like maize, wheat bran, and soybean meal

[DO14] ***Table 6.*** *Initial, Final, and mean weight (±SD) gain of O. niloticus reared in aquariums for 11 weeks.* In my opinion, this growth performance was not satisfactory. In my opinion, this growth performance was not satisfactory.