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GROWTH PERFORMANCE OF HYBRID AFRICAN CATFISH *Heteroclarias* CULTURED ON BSF LARVAL-BASED DIETS

Christopher Teye-Gaga[1,2*], Péter István Molnár[1,2], Elshafia Ali Hamid Mohammed[2,3], Milán Fehér[1], Péter Bársony[3]

[1]University of Debrecen, Faculty of Agricultural and Food Sciences and Environmental Management, Institute of Animal Science, Biotechnology and Nature, Department of Animal Husbandry

[2]University of Debrecen, Doctoral School of Animal Science

[3]University of Debrecen, Faculty of Agricultural and Food Sciences and Environmental Management, Institute of Animal Science, Biotechnology and Nature, Department of Nutrition Physiology

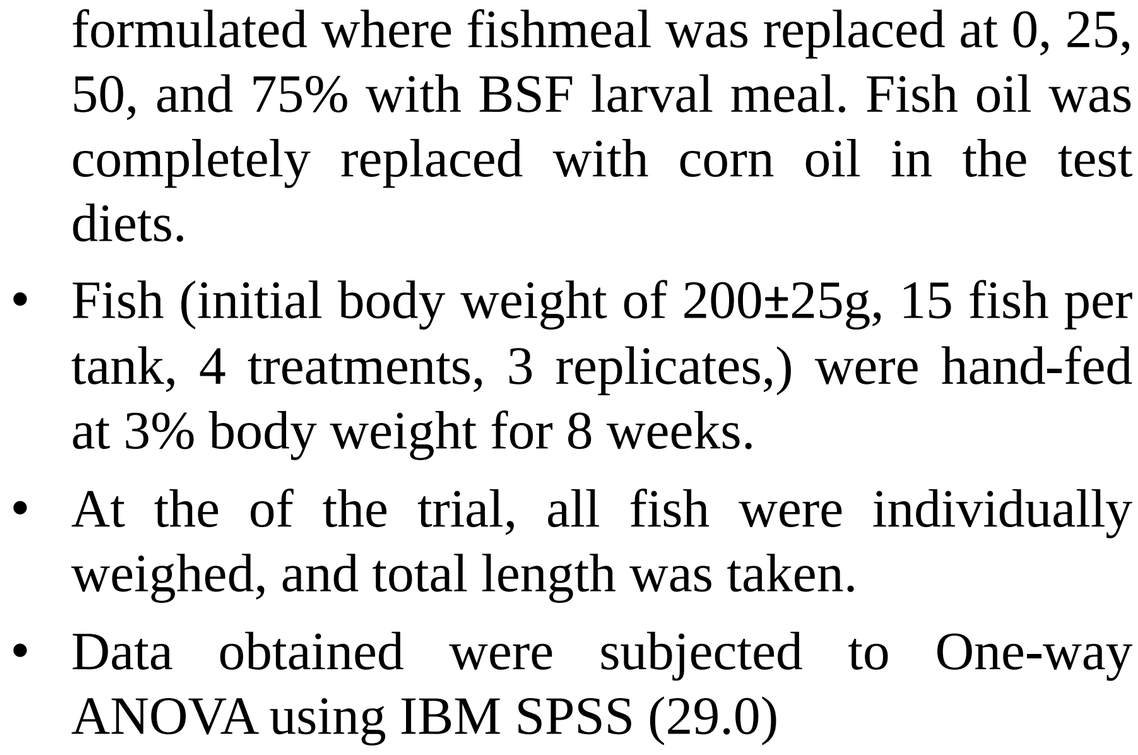
*** christopher.teye.gaga@agr.unideb.hu**

INTRODUCTION AND AIM

- Fish is a crucial source of protein for humanity, accounting for at least 17% of animal protein consumed globally (FAO, 2020).
- Rising demand for fish meat could be met through intensification of aquaculture.
- However, the rising cost of fishmeal and concerns about its sustainability have led to efforts to explore alternative ingredients that could wholly or partially replace it.
- The Black Soldier Fly (BSF), *Hermetia illucens* larvae hold potential due to their high protein and fat contents.
- This study evaluated the growth performance of hybrid African catfish (*Heteroclarias*) cultured on BSF larval-based diets.

MATERIALS AND METHODS

- The experiment was conducted in RAS, circular plastic tanks (350 L) in a completely randomized design.
- Four isonitrogenous (400 gkg^{-1} crude protein) and isolipidic (140 gkg^{-1} crude fat) diets were formulated where fishmeal was replaced at 0, 25, 50, and 75% with BSF larval meal. Fish oil was completely replaced with corn oil in the test diets.
- Fish (initial body weight of 200±25g, 15 fish per tank, 4 treatments, 3 replicates,) were hand-fed at 3% body weight for 8 weeks.
- At the of the trial, all fish were individually weighed, and total length was taken.
- Data obtained were subjected to One-way ANOVA using IBM SPSS (29.0)



RESULTS AND DISCUSSION

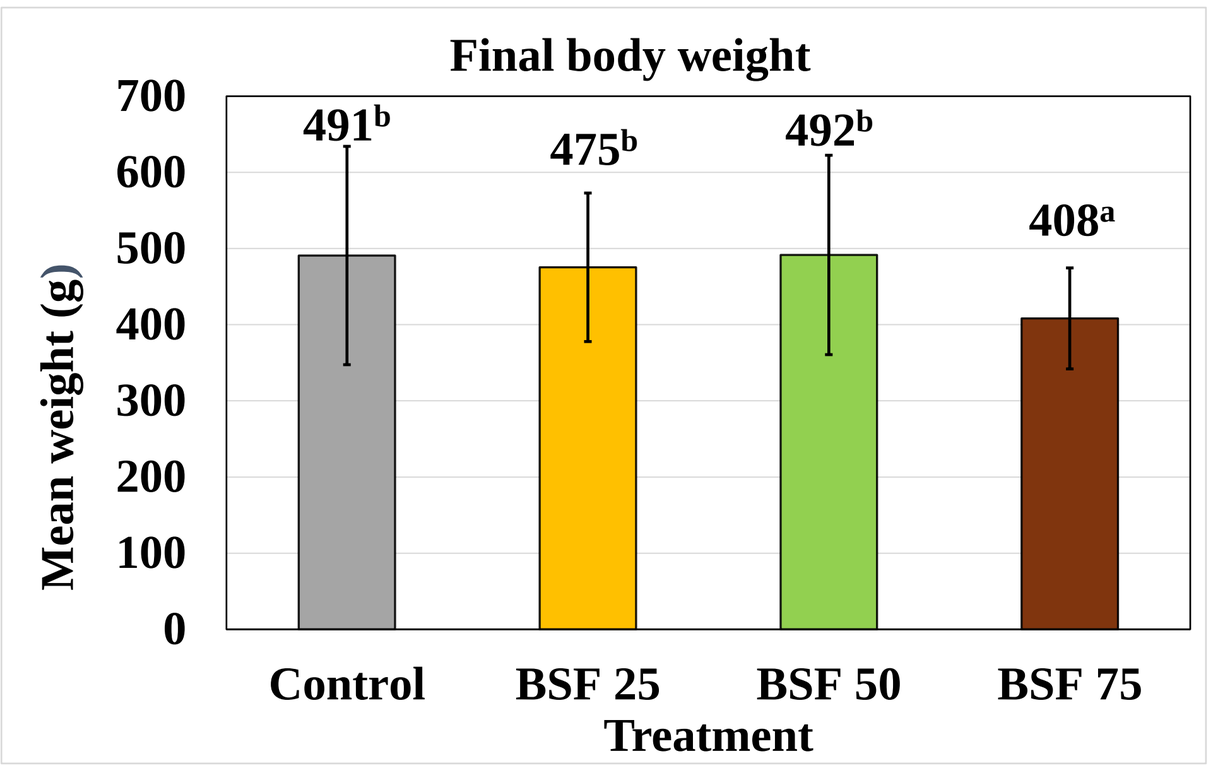


Fig 1. Final body weight (g)

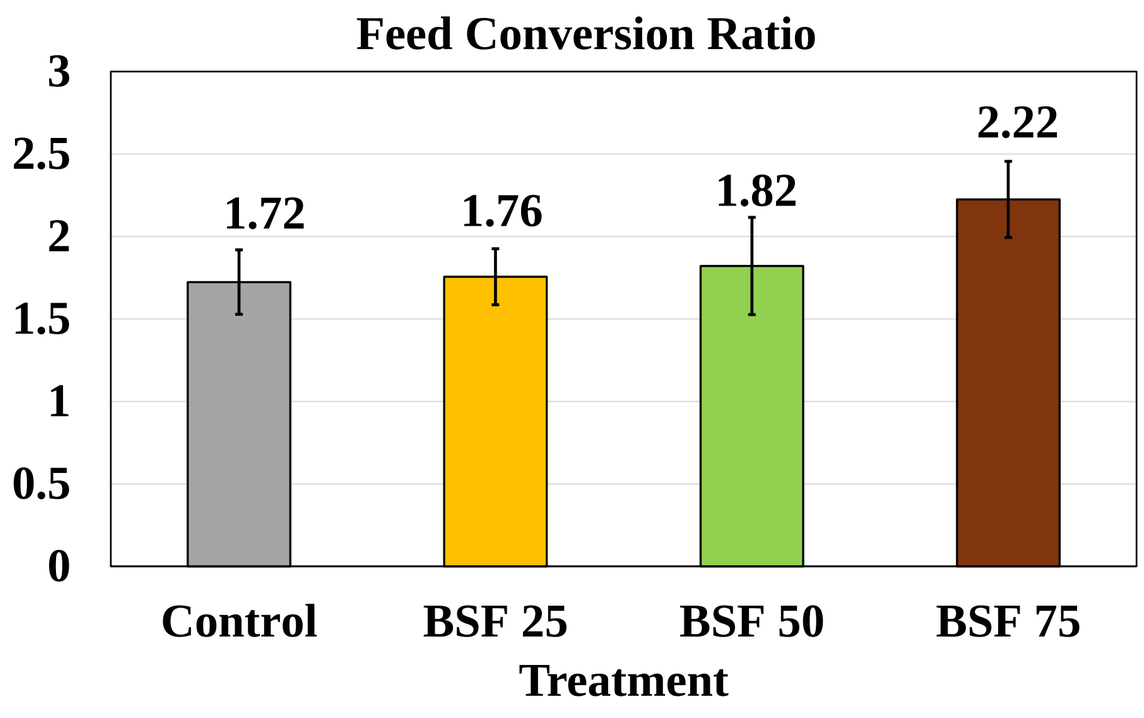


Fig 2. Feed conversion ratio

- Substitution of fishmeal with BSF larval meal up to 50% appears to optimize protein utilization. However, when replaced at a higher level (75%), it resulted in depressed growth.
- This could be due to lower protein quality (imbalances in essential amino acids), lower palatability and higher chitin content leading to lower nutrient uptake (Kroeckel et al, 2012).

CONCLUSION

The findings of this study suggest that BSF larval meal may partially replace fishmeal up to 50% inclusion and corn oil may completely replace fish oil without exerting negative impacts on growth and feed conversion of hybrid African catfish.

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