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Incorporation of *Tagelus adansonii* Bosc 1801 (Bivalvia, Mollusca) meat meal in the diets of *Tilapia Oreochromis niloticus* fry: effects on growth, feed efficiency, survival and flesh composition

Sokhna Khady Lo FALL¹, Jean FALL², Abdoulaye LOUM³, Mariama SAGNE², Jeanne Elisabeth DIOUF¹, Selemene THIAW², Saloum JATTA⁴, Diegane NDONG⁵, Malick DIOUF⁶, Shyn-Shin SHEEN⁷

¹ Faculté des Sciences et Techniques, Ecole Doctorale ED-SEV/ UCAD. BP 5005

² Institut Universitaire de Pêche et d'Aquaculture, UCADII Bâtiment Pédagogique, Rez de chaussée, BP: 5005.

³ Département Aquaculture, Université Gaston Berger Saint-Louis, Sénégal

⁴ Department of Fisheries, 6, Marina Parade, Banjul, The Gambia

⁵ Direction des Ressources Animales et Halieutiques, Département de l'Agriculture, des Ressources en Eau et de l'Environnement, Commission de l'UEMOA, 380 Av. Pr. Joseph KI-ZERBO, 01 BP 543 Ouagadougou 01-Burkina Faso.

⁶ Faculté des Sciences et Techniques, Département Biologie animale/UCAD. BP 5005

⁷ Department of Aquaculture, National Taiwan Ocean University, Keelung, 20224, Taiwan, ROC

Corresponding authors: Jean FALL, E-mail: kagoshima77@yahoo.com

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ABSTRACT

Objective: The objective of this study was to investigate whether *Tagelus* meat meal could completely or partially replace fishmeal in the diet of *Oreochromis niloticus* fry without affecting the growth and feed efficiency parameters. Furthermore, to also check whether the incorporation of *Tagelus* meat meal in the diet of *Oreochromis niloticus* will pose any significant effect on the body composition or not.

Methodology and results: Fry of *Oreochromis niloticus* (225 individuals) with an initial average weight of 0.013 g were distributed in triplicate in 15 tanks with a density of 15 individuals per tank. They were subjected to five diets with varying levels of protein (33-36%) and lipid (11-13%) containing 0% *Tagelus* meat meal and 100% fishmeal, R0 (control diet); 25% *Tagelus* meat meal, and 75% fishmeal, R25 diet; 50% *Tagelus* meat meal and 50% fishmeal, R50 diet; 75% *Tagelus* meat meal and 25% fishmeal, R75 diet and 100% *Tagelus* meat meal and 0% fishmeal, R100 diet for 8 weeks. The results showed that the best growth performance was obtained with the R25 diet, while the lowest was obtained with the R100 diet. Diets R0, R25 and R50 gave similar values for growth parameters measured. The best feed conversion ratio (FCR) was obtained with the R25 diet but there were no statistical differences between it and R0 and R50 diets. In this trial generally, the replacement of fish meal with *Tagelus* meat meal up to 50% had no major influence on fish whole body composition (DM, CP and CL).

Conclusion and application of results: It can be concluded that *Tagelus* meat meal could replace fishmeal up to 50% nevertheless, to be at a safer side, the authors recommended 25% fish meal replacement with *Tagelus* meat meal in the diet of Tilapia (*Oreochromis niloticus*) fry. It was observed that the high incorporation rate of *Tagelus* meat meal caused lower growth performance and feed efficiency. Now that it is tested and verified that *Oreochromis niloticus* fry could utilized *Tagelus* meat meal in their diet, this will help fish farmers and fish feed manufacturers to use it in fish feed. This will attach economic value to *Tagelus* especially in places where they are not considered as important source of food for humans.

Keywords: fishmeal, *Tagelus* meat meal, replacement, growth, feed efficiency, survival, flesh composition, *Oreochromis niloticus*