

Evaluation of blowfly (*Chrysomya megacephala*) maggot meal as an effective, sustainable replacement for fishmeal in the diet of farmed juvenile red tilapia (*Oreochromis* sp.)

ABSTRACT

Fishmeal is the primary protein source used in farmed fish feed. However, the high price of fishmeal is a major contributor to high production costs in the aquaculture industry. Insect-based diets have been recognized as cheaper alternatives to fishmeal, but the nutritional quality and impact on fish growth remains in question. In this study, the potential of blowfly *Chrysomya megacephala* maggot meal as an alternative dietary protein source to fishmeal for red tilapia (*Oreochromis* sp.) was evaluated. The protein and amino acid composition of the meal was assessed and a feeding trial was conducted to determine the effects of varying percentages of fishmeal replacement on growth, feed efficiency, and survival of juvenile tilapia. Blowfly maggot meal contained all the essential amino acids needed by juvenile tilapia for normal growth, and equivalent protein content to fishmeal. Furthermore, diets with increased replacement of fishmeal by blowfly maggot meal improved the growth, feed efficiency and survival of juvenile tilapia with the total replacement diet giving the optimal results. Based on these results we suggest that blowfly maggot meal is an effective and sustainable protein source to replace fishmeal in the diet of farmed tilapia.

Keyword: Blowfly; Fishmeal; Maggot meal; Red tilapia