(73)

Swordtail (*Xiphophorous helleri*) Growth Promoting Activity and Proximity Analysis of Pineapple (*Ananas comosus*) Peel Oil Supplemented Feed

Thanushanthahi L.[1], Manage P.M.[1, 2], Idroos F.S.[1*]

[1]*Centre for Water Quality and Algae Research, Department of Zoology, University of Sri Jayewardenepura, Nugegoda, Sri Lanka*
[2]*Faculty of Graduate studies, University of Sri Jayewardenepura, Nugegoda, Sri Lanka*
*****sumaiyaidroos@sci.sjp.ac.lk*

Abstract

The growing ornamental fish industry is constantly exploring novel feed additives to serve as phytogenics. Phytogenics are plant-derived compounds that are incorporated as feed additives. The phytogenics improve culture production among cultured fish and shrimps. Owing to low-cost and high availability, phytogenics offer a sustainable tool to address environmental, social, and economic issues concurrent with the expansion and increasing demand for aquaculture, including ornamental fish culture. The present study was conducted to evaluate the effects of the dietary inclusion of Pineapple (*Ananas comosus*) peel oil on the growth performance of Swordtail (*Xiphophorous helleri*). The Pineapple peel oil extraction was done using the Soxhlet apparatus. The extracted oil was then incorporated into the swordtail feed while using olive oil in the control feed. The prepared fish feed was given for Swordtail with an initial average body weight of 0.12±0.07 g and average length±SD of 1.15±0.2 cm. Two triplicate groups were fed with control and experimental diet, for 10 weeks. Results showed significantly enhanced growth performance in terms of average weight gain: 0.48±0.01 g, weight gain rate: 282.0±35%, relative growth rate: 2.82±0.35, Specific growth rate: 1.92±0.12% day^{-1}, feed conversion rate: 2.19±0.04% and condition factor: 0.42±0.02%. The biochemical composition, including crude protein, crude lipid, ash, moisture, and carbohydrate, was analyzed for both prepared feeds. Among the biochemical properties of prepared feed, moisture content was analyzed using the moisture analyzer; protein content was determined using Kjeldhal method; crude fat content was determined using Soxhlet extraction method; ash content was analyzed using muffle furnace and the carbohydrate content was determined by subtracting crude protein percentage, crude lipid percentage and ash percentage from 100%. The proximate analysis results showed that the carbohydrate content (60.05±0.05%) in the control feed was significantly high ($p \leq 0.05$), whereas moisture (11.35±0.11%) and ash (13.77±0.03%) contents were significantly high ($p \leq 0.05$) in experimental feed. Conclusively, the present study recommends using Pineapple peel oil as a feed additive to improve the growth performance of swordtail which eventually leads to get more profit.

Keywords: Plant-based feed additive, Swordtail, Pineapple peel oil, Growth performance