

Effects of canarium fruit (*Canarium odontophyllum*) oil as a dietary lipid source for juvenile mahseer (*Tor tambroides*) performance

ABSTRACT

Canarium is among the riverine fruits that are commonly found in the natural diet of Malaysian mahseer, *Tor tambroides*. The fruit contains a high percentage of lipids. This study was conducted to investigate the effects of canarium crude oil on the growth performance, body composition and fatty acid profile of juvenile *T. tambroides*. Five isonitrogenous (40% crude protein) diets containing varying canarium oil levels (0, 1.25, 2.5, 3.75 and 5%) were prepared. Crude palm oil (CPO) was used as the control. The juveniles (2.08 ± 0.10 g) were given the test diets for 12 weeks in triplicate groups. Diets containing canarium oil were found to be less accepted by the fish which led to a significantly lower ($P < 0.05$) daily feed intake than diet including 0% canarium oil. Juveniles fed on 1.25–5% canarium oil also showed significantly lower ($P < 0.05$) weight gain, specific growth rate, and protein efficiency ratio than those fed 0% canarium oil. However, the canarium oil level did not have any significant effect ($P > 0.05$) on survival and lean portion of juvenile *T. tambroides*. The fish fed canarium oil-free diet also had better tissue fatty acid profile (especially n-3 and n-6 PUFA) as well as better protein, lipid and energy retention than those fed diets including canarium oil. From the results, canarium oil extracted from the whole fruit was not recommended as a dietary lipid source for *T. tambroides*. Moreover, juveniles fed on 0% canarium oil (5% CPO) utilized dietary saturated fatty acids (SFA) and monounsaturated fatty acids (MUFA) more efficiently for their energy requirement than fish given canarium oil.

Keyword: Growth; Fatty acid; Mahseer; *Tor tambroides*; Canarium oil; *Canarium odontophyllum*