

Growth, Survival, Proximate and Fatty Acid Composition of Sandworm *Perinereis quatrefagesi* (Grube, 1878) Fed Variable Feed Types

Joseph B. Biñas^{1*}, Veronica R. Alava¹ and Wilfredo L. Campos²

¹Aquaculture Department
Southeast Asian Fisheries Development Center
Tigbauan 5021, Iloilo
*jbbinas@seafdec.org.ph

²University of the Philippines Visayas
Miag-ao, Iloilo

Abstract

Sandworm *Perinereis quatrefagesi* has been used as feed for crustacean broodstock due to its reproductive-enhancing properties particularly protein and highly unsaturated fatty acids (HUFAs). Juvenile sandworms collected along the coast of Guimbal, Iloilo were reared in tanks and fed three nutritionally variable feed types: fish fecal waste, fish meal and rice bran. After 56 days, feeds affected ($p < 0.05$) sandworm growth and crude fat contents but not ($p < 0.05$) survival and crude protein levels. Survival rates were 86 ± 3 to $89 \pm 5\%$ while crude protein levels were 57.0 ± 2.5 to 68.0 ± 5.3 g 100 g⁻¹ dry weight. High crude protein fish meal promoted better ($p < 0.05$) growth ($2.2 \pm 0.4\%$ day⁻¹) than fish feces ($1.2 \pm 0.3\%$ day⁻¹) and rice bran ($1.1 \pm 0.3\%$ day⁻¹). However, crude fat content of sandworm was higher ($p < 0.05$) in rice bran (18.9 ± 1.6 g 100 g⁻¹) than in fecal waste (13.6 ± 2.9 g 100 g⁻¹) and fish meal (10.5 ± 3.1 g 100 g⁻¹) treatments. Levels of highly unsaturated fatty acids (HUFAs) such as 20:4 *n*-6, 22:6 *n*-3 and 20:5 *n*-3 did not differ significantly ($p > 0.05$) at 0.41 ± 0.21 to 0.89 ± 0.51 g 100 g⁻¹, 0.21 ± 0.24 to 0.43 ± 0.22 g 100 g⁻¹ and 0.57 ± 0.46 to 0.88 ± 0.31 g 100 g⁻¹, respectively.

The study demonstrated that *P. quatrefagesi*: (1) can survive well in nutritionally variable feed types although it grows better in high protein diet; (2) crude protein levels were high regardless of feed types; and (3) crude fat content was high in high fat diet but *n*-3 and *n*-6 HUFAs were not significantly different regardless of feed types.