

**Effects of eggshell and seashell powder as natural dietary calcium supplements on growth, molting frequency, and carapace calcium composition of juvenile red claw crayfish, *Cherax quadricarinatus***

**ABSTRACT**

The growth performance of red claw crayfish, *Cherax quadricarinatus*, fed diets with different sources and concentrations of natural calcium was evaluated. Formulated diets containing 30% protein and 8% lipid were prepared using supplementation of 0 (control), 3%, 6%, 9% eggshell, and 6% seashell. *C. quadricarinatus* juveniles with an average total weight of  $0.21 \pm 0.01$  g and length of  $25.0 \pm 0.10$  mm were obtained from ten ovigerous females bred in captivity. An aquarium with a size of  $0.72$  m<sup>2</sup> was divided into eight compartments with an area of  $0.09$  m<sup>2</sup> per compartment and was individually stocked with juvenile crayfish. A total of eight juvenile crayfish were used per dietary treatment. There were five dietary treatments in total and each of these treatments were replicated three times. The addition of eggshell and seashell powder exerted positive effects on the growth performance, molting frequency, and survival of the crayfish. Crayfish fed with a 6% eggshell-supplemented diet exhibited the best overall growth performance. The calcium percentage of the carapace increased with the increase in calcium content of the diets. Meanwhile, the performance of diets comprising eggshells and seashells was not significantly different ( $P > 0.05$ ). Considering the low cost and abundance of eggshells, the addition of 6% of this product to the diet is recommended for the best growth of juvenile *C. quadricarinatus*.