

Enhanced Growth and Innate Immune Response in *Scylla serrata* Fed Additives Containing *Citrus microcarpa* and *Euphorbia hirta*

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Abstract : One of the most important and in demand products in the Philippines is *Scylla serrata*. Despite the increasing demand in the market today, the cost of feeds corresponds to a fraction of 40%-50% of the entire operational of crab production. Raisers and suppliers are seeking alternative ways to lessen their expense with more effective enhancers than the usual feeds. This study aimed to enhance the growth and immune system of the mud crabs using natural antioxidants from plant powders that are available in the locality. There were four treatments: Diet 1: commercially available feeds for the positive control, Diet 2: 1,200 mg/kg *Euphorbia hirta*, Diet 3: 1,600 mg/kg of *Citrus microcarpa*, Diet 4: Mixed 1,400 of *Euphorbia hirta* and *Citrus microcarpa*. Air-drying was done first-hand followed by the grinding of plants. After which the plants were stored in a container and was added to the feed formulation given. Mud crabs were fed twice a day for 30 days for better results. For inferential analysis, weight gain and survivability were measured, hemolymph was extracted and the Total Hemocyte Count (THC) was determined analyzed. Results showed that the highest THC mean ($9.0 \times 10^5 \pm 7.1 \times 10^4$) and weight gain mean ($2.9 \times 10 \pm 1.9 \times 10$) was achieved by Diet 3 with the same survivability rates among other treatments and positive control. While Diet 2 presented the lowest THC mean ($7.2 \times 10^5 \pm 3.5 \times 10^4$) and weight gain mean ($1.0 \times 10 \pm 7.0 \times 10^{-1}$).

Keywords : fed additives, *Scylla serrata*, enhanced growth, innate immune response

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