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Exploitation of medicinal plants as immunostimulant and therapeutic agent in black tiger shrimp (*Penaeus monodon*)

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Global production of black tiger shrimp (*Penaeus monodon*) demonstrates significant reduction due to infections and disease outbreak. In 2010, Acute Hepatopancreatic Necrosis Disease (AHPND) or also known as Early Mortality Syndrome (EMS) has been reported in southern China and spread to other Asian countries including Vietnam, Thailand and Malaysia. The bacterial agent of *Vibrio parahaemolyticus* that carry the toxin related genes (pirA and pirB like genes) has been identified as the causative agent of AHPND. Prevention of diseases using chemotherapeutic agents had demonstrated drawbacks, including the potential development of antibiotic resistant bacteria and spread of toxic residues. Enhancement of immunity and disease resistance of black tiger shrimp through the employment of immunostimulant has been considered as an alternative strategy over the current usage of chemotherapeutic agents. The present study was aimed to evaluate the efficacy of two local medicinal plants, *Piper betle* and *Centella asiatica* as potential immunostimulant in promoting the growth performance and enhance the immunity of black tiger shrimp. The medicated feed incorporated with different concentration of methanolic extract of *Piper betle* and *Centella asiatica* (10%, 20% and 30%) were prepared for the feeding experiment. The immunostimulatory and therapeutic effect of both plant extracts were determined based on the growth performance, haematological analyses, total bacterial load and antimicrobial properties. Shrimps fed with herbal medicated diet demonstrate an enhancement of growth performance and immunostimulatory activity in comparison with shrimps fed with basal diet. Herbal medicated diet had proven to boost the immunity and health condition of black tiger shrimp.

Biography

Siti Hasmah Mohtar has completed her PhD in the field of Biosciences at University of Nottingham. She is the Head of Department and Programme Coordinator under the Department of Science and Biotechnology, Faculty of Engineering and Life Sciences, University of Selangor.

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