

Evaluating the Stock Health of Shrimps and Characterization of *P. monodon* (Fabricius) for Broodstock Development in Sri Lanka

J.A. Athula^{1*}, C.N. Walpita² and H.A.D. Ruwandeepika²

¹Department of Animal Science, Uva Wellassa University, Badulla, 90000, Sri Lanka

²Department of Livestock Production, Faculty of Agricultural Sciences, Sabaragamuwa University of Sri Lanka, Belihuloya, Sri Lanka

*athulaj@uwu.ac.lk

Wild collected broodstock served as the only source of post larvae for *Penaeus monodon* farming in Sri Lanka since the inception of farming from 1980s. These wild stocks also acted as a source of catastrophic viral infections frequently devastating the industry. However, systematic studies linking the stock health of these wild broodstocks collected in Sri Lankan waters were unavailable. Further, morphometric variations of these broodstocks, their genetic relatedness and resistance to diseases under Sri Lankan conditions were not studied. Hence, present study was aimed at investigating the stock health of wild collected brood shrimps, identifying the correlation with their morphometric variations, genetic relatedness, and their resistance to selected viral diseases. As the first baseline study, samples were collected from various sampling locations representing the whole farming and broodstock collecting areas. Samples also included farm collected shrimps and other crustaceans collected from different areas. Samples were tested for seven critical crustacean diseases using standard IQ 2000TM PCR test kits. Out of 2060 PCR tests conducted for the seven diseases, white spot disease and IHHNV were only recorded, where the later was the first ever confirmatory study in Sri Lanka. For the analysis of morphometric characters, genetic relatedness of broodstock clusters and their correlation with disease resistance, 609 samples were already collected from the projected 660 samples. Truss and morphometric variations were partly analysed, and results indicated the existence of separate clusters. Preliminary analysis of DNA barcoding for genetic relatedness revealed the existence of some genetic variation, but this needs to be confirmed by the complete number of samples collected from different areas. Further, pre-tested microsatellite markers will be used to determine the disease resistance of these broodstocks for selected disease and correlation between these parameters are still to be studied. Upon completion, this study will provide valuable insight of disease resistance of wild brood shrimps and their correlation with genetic relatedness and morphometric characters, providing much needed baseline information for country's broodstock development programs.

Keywords: Broodstock Development, Genetical Variation, *P. Monodon*, Shrimp Diseases, WSSV