Comparison of two Staining Methods to visualise the Monodon Baculoviral occlusion body In the Hepatopancreas of Giant Tiger Shrimp

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Abstract

Monodon Baculovirus (MBV) causes an economically important disease among cultured shrimp worldwide including Sri Lanka. This virus primarily affects the post larvae and causes high mortality rates in the hatcheries that necessitate a rapid and reliable screening test for early diagnosis. This study was carried out to compare malachite green and Hematoxylin and Eosin (H and E) staining methods to diagnose MBV in the post larvae (PL 15) of *Penaeus monodon*. The PL 15 was collected from shrimp hatcheries Bathuluoya, Chilaw.

Eighty individual post larvae were carefully dissected and the hepatopancreas was split into two under the stereo microscope and one half was stained with 0.05 % malachite green while the other was stained with H and E. The minimum processing time taken for Malachite green staining and H and E staining was 2.5 and 25 min, respectively. Occlusion bodies were spherical and appeared light green colour with malachite green while they were pink with H and E. The diameter of occlusion bodies were higher ($P < 0.05$) with malachite green staining [2.5 ± 0.73 (1.25-5) µm] compared to [2.26 ± 1.00 (0.625-5) µm] H and E staining. Out of eighty, 35 (45.75%) samples of shrimp were positive for malachite green, while 33 (41.25%) positive for H and E. Further, the agreement for these two tests was 70%.

Data from this study indicate, that malachite green test could be adapted to the field level at the hatchery as it is rapid and less cumbersome. Further, the morphometrical differences of occlusion bodies suggest possible strain variations of MBV circulating in Sri Lanka.

Keywords: *Penaeus monodon;* Monodon Baculovirus; Occlusion body;