

Effect of Nitrogen Compounds on Shrimp *Litopenaeus vannamei*: Histological Alterations of the Antennal Gland

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Article

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Abstract

Two experimental modules with different stocking densities ($M_1 = 70$ and $M_2 = 120$ shrimp m^{-2}) were examined weekly during 72-day culture cycle at low-salinity water (1.9 g L^{-1}) and zero-water exchange to examine the effects of water quality deterioration on the antennal gland (AG) of shrimp. Results showed survival rates of 87.7% and 11.9%

in M1 and M2, respectively. Water temperature, pH, dissolved oxygen, and chlorophyll *a* were not significantly different between modules but the concentrations of the nitrogen compounds were significantly different between modules with the exception of nitrite-N, showing a higher histological alteration index in M2 (32 ± 10) than M1 (22 ± 0) with a strong correlation with the nitrogen compounds. During the last weeks was evidenced in M1 inflammation and hemocytic and hemolymph infiltration, while in M2, melanization, hemocytic melanized nodules and cells with kariorrhexis.

Keywords

Shrimp Nitrogen compound Antennal gland Histopathology
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Notes

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