

## Influence of White Spot Disease on Muscle Lipid Content and Fatty Acid Profile of Cultured *Penaeus monodon*

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### Abstract

Shrimp infected with white spot disease (WSD) are often released to Sri Lankan market as well as international markets for human consumption. Therefore, it is of interest to the consumer to know if this disease has any effect on the quality of the flesh of the shrimp. Using gas chromatography, we measured lipid levels and fatty acid profiles of muscle tissue from randomly collected, healthy and WSD cultured *Penaeus monodon* over a period of seven months from October 1999 to May 2000. The mean percentage dry weight lipid content of WSD shrimp was significantly higher ( $4.3 \pm 0.1$ ) than that for healthy shrimp ( $3.9 \pm 0.2$ ) ( $p < 0.05$ ). The predominant fatty acids in muscle tissue for both were palmitic (16:0), stearic (18:0), oleic (18:1n - 9), linoleic (18:2n - 6), eicosapentaenoic (20:5n - 3) and docosahexaenoic (22:6n - 3). White spot disease (WSD) shrimp showed significantly lower levels ( $p < 0.05$ ) of linoleic acid ( $9.3 \pm 2.0$ ) than healthy shrimp ( $14.3 \pm 3.1$ ). However, significantly higher levels of stearic acid ( $14.1 \pm 3.5$ ) and palmitoleic acid ( $3.1 \pm 1.15$ ) were found in WSD shrimp than in healthy shrimp ( $11.7 \pm 0.4$  and  $1.7 \pm 0.2$ , respectively). The saturated fatty acid content was higher ( $41.0 \pm 1.6$ ) in WSD shrimp and polyunsaturated fatty acid content was higher in healthy shrimp ( $44.8 \pm 1.4$ ).