

**Dietary guanosine-monophosphate improves growth performance, feed utilization and intestinal morphology of whiteleg shrimp (*Litopenaeus vannamei*) maintained on soybean meal-based diets**

**Abstract**

The present study evaluated the effects of dietary supplementation of individual or a combination of nucleotides in soya bean meal-based diet on growth, survival, apparent digestibility and intestinal condition of whiteleg shrimp, *Litopenaeus vannamei*. The experimental protocol comprised a control set, and four test diets that were separately supplemented with 0.1% inosine monophosphate (IMP, D + I), 0.1% guanosine monophosphate (GMP, D + G), 0.1% mixture of IMP and GMP (D + IG) and 0.1% mixture of IMP, GMP, cytidine monophosphate (CMP) and uridine monophosphate (UMP) (D + IGCU). Triplicate groups of the shrimp (initial body weight =  $0.99 \pm 0.01$  g) were fed four times daily for 8 weeks. Results demonstrated that D + G significantly enhanced body weight gain and specific growth rate in the shrimp compared with control and other dietary treatments with the various combinations of nucleotides ( $p < 0.05$ ). However, the survival was not significantly affected by these treatments ( $p > 0.05$ ). Shrimp fed D + G showed significantly higher feed intake and apparent net protein utilization compared with D + IGCU and, control and D + IG ( $p < 0.05$ ) respectively. Nucleotide supplementation did not significantly improve the crude protein and lipid digestibility coefficients. This was evident when the data on these parameters were compared with those of the control. Shrimp fed D + G showed significantly improved intestinal villus height and body crude protein content ( $p < 0.05$ ). In conclusion, GMP supplementation in soya bean meal-based diet enhanced the growth, feed intake, protein utilization and villus height of *L. vannamei*.