

Histology of intestine and fatty acid profile of Pacific white shrimp (*Litopenaeus vannamei*) effected by dietary inulin

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The effects of inulin were studied on the growth indices, intestinal morphology as well as fatty acid profile of the Pacific white shrimp, *Litopenaeus vannamei* with average weight 3.21 ± 0.03 g for 5 weeks. The experiment was carried in triplicate, was conducted in circular PVC tanks of 300 L capacity with 25 shrimp per tank at the Aquaculture Center (Delvar, Bushehr province). Inulin was added to the diets at a 2 levels (0 and 2 percent). The shrimp were fed the experimental diets to visual satiety five times a day at 08:00, 12:00, 16:00, 20:00 and 24:00 h. No significant differences in growth performances (such as survival, feed conversion ratio (FCR), specific growth rate (SGR), Protein efficiency ratio (PER)) was observed, however, Dietary inulin brought about significantly improved 20:3n3 fatty acid content between the two treatments ($P > 0.05$). Intestine epithelium cells height in the abdominal sections significantly ($P < 0.05$) were higher in shrimp fed by dietary inulin. The results of this study showed that supplement of 2% of inulin has positive effects on fatty acid profile and intestinal morphology in *Litopenaeus vannamei*.

Keywords: Fatty acid, Growth, *Litopenaeus vannamei*, Nutrition, Inulin.

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