**Effect of Dietary Soybean Lecithin and Cholesterol on Growth, Antioxidant Status and Fatty Acid Composition of Juvenile Swimming Crab, *Portunus trituberculatus***

**Peng Sun*, Min Jin*, Liyun Ding*, You Lu*, Ye Yuan*, Hongna Ma*, Qicun Zhou*,**,

*Laboratory of Fish Nutrition, School of Marine Sciences, Ningbo University, Ningbo 315211, China
**Collaborative Innovation Center for Zhejiang Marine High-efficiency and Healthy Aquaculture, Ningbo University, Ningbo, China

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**Abstract**

An 8-week feeding trial was conducted to evaluate the effects of dietary soybean lecithin and cholesterol levels on the growth, antioxidant status and fatty acid composition in the tissues of swimming crab (*Portunus trituberculatus*). Eight experimental diets were formulated to contain four levels of soybean lecithin (0, 10, 20 and 40 g kg\(^{-1}\) of diet) and two cholesterol levels (0 and 6 g kg\(^{-1}\) of diet). Each diet was randomly assigned to triplicate groups of 60 swimming crabs (approximately 3.70 ± 0.03 g). The highest weight gain (WG), specific growth rate (SGR) and molting frequency (MF) were observed with crabs fed the diet supplemented with 40 g kg\(^{-1}\) lecithin and 6 g kg\(^{-1}\) cholesterol. Crabs fed the diet without lecithin and cholesterol had a lower WG and SGR as compared to those fed the other diets. Cholesterol, triglyceride and glucose concentrations in the serum were significantly influenced by soybean lecithin and cholesterol levels. Crabs fed the diets containing 40 g kg\(^{-1}\) lecithin with or without cholesterol supplementation had lower malondialdehyde (MDA) in the hepatopancreas as compared to those fed the other diets. Moreover, glutathione peroxidase (GPx) and lysozyme activities in the hepatopancreas were significantly affected by the dietary soybean lecithin and cholesterol levels. Highly unsaturated fatty acids (HUFA) in the muscles were not significantly influenced by the dietary soybean lecithin and cholesterol levels. The concentrations of total HUFA in hepatopancreas were significantly influenced by the dietary soybean lecithin and cholesterol levels. In conclusion, interaction between dietary soybean lecithin and cholesterol affects growth performance, feed utilization and fatty acids in the hepatopancreas, dietary soybean lecithin and cholesterol supplementation enhance lipid transportation and metabolism.