

Dietary effects of garlic (*Allium sativum*) on haemato-immunological parameters, survival, growth, and disease resistance against *Vibrio harveyi* infection in Asian sea.

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Dietary effects of garlic (*Allium sativum*) on haemato-immunological parameters, survival, growth, and disease resistance against *Vibrio harveyi* infection in Asian sea bass, *Lates calcarifer* (Bloch)

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### Abstract

The purpose of this study was to determine the immune response and disease resistance against *Vibrio harveyi* infections in Asian sea bass *Lates calcarifer* fingerlings through garlic (*Allium sativum*) added dietary doses. Garlic was supplemented into the diets at 5 g, 10 g, 15 g and 20 g/kg feed and fed to fish daily for two weeks. Control fed without garlic added diet. Garlic-added feed led to increased survival for all treated groups and dose of garlic at 10 g/kg feed significantly improved survival to 83.35% compared with the controls (33.3%). In addition, there was a

significant increase in growth, weight-gain and feed conversion in garlic-fed groups. Various haematological, biochemical and immunological parameters were studied. Erythrocytes, leucocytes, haematocrit, haemoglobin, phagocytic activity, respiratory burst, lysozyme, anti-protease and bactericidal activities were enhanced following feeding with garlic. Significantly higher serum protein, albumin and globulin levels were evident in treated groups. There was reduction in serum glucose, lipids, triglycerides and cholesterol in treated groups compared to the control. The results indicate that garlic led to enhance the immunity by making *L. calcarifer* more resistant to infection by *V. harveyi*.

## Highlights

• Garlic led to enhance the immunity by making *L. calcarifer* resistant to *V. harveyi* infection. • Garlic added feed led to increase the survival for all treated groups. • A significant increase in growth, weight-gain and feed conversion was seen in treated groups. • Garlic feed significantly affected the blood parameters and blood indices.



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## Keywords

Immune; Infection; Intestine; Conversion; Resistant

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IMPORTANCE OF GARLIC (*ALLIUM SATIVUM*): AN EXHAUSTIVE

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