

Comparison of two edible mushroom extract as aquaculture feed additives to enhance immune response of Asian seabass

Abstract

Limitation of antibiotic practice in aquaculture has created attention to uses of organic immuno-stimulant for growth and survival of juveniles with the development of immune system. The purpose of this study was to evaluate the effects of two edible mushroom extracts, *Pleurotus sajor-caju* and *Schizophyllum commune* as feed additive in the diets of Asian seabass (*Lates calcarifer*) juvenile on serum antibody production. Three experimental diets were formulated with 1% inclusion of *P. sajor caju* (D1), *S. commune* (D2) and commercial diet without inclusion of mushroom additive was used as a control (D0). Asian seabass juveniles with average weight of 3 ± 1 g were fed for 30 days. Each juveniles were challenged with 0.1ml bacteria suspension consisted of 10^8 cfu/ml of *Vibrio harveyi*. Mortality was observed for 10 days after fishes being challenged. Blood was collected before and on third day of challenged, and serum was used to determine antibody titre. Survival rate of D0, D1 and D2 was 60%, 55% and 80%, respectively. Serum agglutinating antibody titer of D2 significantly showed the highest antibody production followed by D1 and D0. Considering the good performance of *S. commune* in the present study, this mushroom can be considered as potential feed additive in the diets for enhancing immune response in Asian seabass juveniles challenged with *V.harveyi*.