

The Effect of a Probiotic: *Leuconostoc mesenteroides* B4, and Its Products on Growth Performance and Disease Resistance of Orange-Spotted Grouper *Epinephelus coioides*

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Abstract : The aim of this study was to investigate a probiotic, *Leuconostoc mesenteroides* B4, and its products, isomaltooligosaccharide and dextran, on growth performance, digestive enzymes, immune responses, and pathogen resistance of spotted grouper *Epinephelus coioides*. The grouper were fed control and diets supplemented with *L. mesenteroides* B4 (107 CFU/g), isomaltooligosaccharide (0.15%), isomaltooligosaccharide (0.15%) + *L. mesenteroides* B4 (107 CFU/g) (I + B4), and dextran (0.15%) + *L. mesenteroides* B4 (107 CFU/g) (D + B4) for 8 weeks. The result showed that final weights and percent weight gains of the grouper fed diets supplemented with *L. mesenteroides* B4 and I + B4 were significantly higher than that of the control group ($p < 0.05$). The activities of digestive enzymes in the grouper fed with I + B4 were significantly higher than the control group ($p < 0.05$), too. After challenge with *Vibrio harveyi*, the enzyme activities of antiprotease and lysozyme as well as of respiratory burst of the fish fed with I + B4 and D + B4 were significantly higher than that of the control group ($p < 0.05$). The grouper fed with the both diets also had higher survival rates than that of the control group after the challenge. Overall, the study indicated that feeding diets supplemented with *L. mesenteroides* B4, and its products, isomaltooligosaccharide, and dextran could be an effective method for enhancing the growth performance and disease resistance in orange-spotted grouper.

Keywords : orange-spotted grouper, probiotic *Leuconostoc mesenteroides* B4, isomaltooligosaccharide, dextran, growth performance, pathogen resistance

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