Non-specific Immune Response and Growth of Juvenile Orange-spotted 
Grouper, *Epinephelus coioides* Hamilton, 1822 Fed Artificial Diets and Raw Fish

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Abstract

Effects of artificial diets and raw fish on growth, blood composition and immune response of Grouper (*Epinephelus coioides*) were studied. Grouper of 75±10 g average weight and 18.1±0.8 cm averaged length were stocked into nine 500 L concrete tanks at 20 fish/tank. After acclimation, the fish were divided into 3 groups in triplicate tanks; group 1 fed on the artificial diet (AF), group 2 fed on commercial pellet (CF) and group 3 fed on raw fish (RF). After 8 weeks of feeding, there were no significantly differences of blood compositions (RBC, WBC, hematocrit and plasma protein) and humoral immune responses (lysozyme and complement) among group of fish while the cell mediated immune response (*O₂* production) of fish fed on raw fish was significantly lower than those of the fish fed on AF and CF (*p*<0.05). The growth of grouper fed on raw fish was significantly higher than those fed on AF and CF (*p*<0.05), however the FCR of the grouper fed on AF and CF was significantly different from each other. The FCR of fish fed on AF was the greatest (1.23) followed by those of the fish fed on CF (2.11) and raw fish (3.84) respectively while the survival rate of grouper fed AF and CF were significantly higher than raw fish (*p*<0.05). The results indicated that artificial diets can be used for grouper feeding without negative affects on fish health. However the formulation of the diet should be modified to improve the better growth of fish.

Key words: *Epinephelus coioides*, Grouper, artificial diet, raw fish, immune, growth

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