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Abstract

Formulated feed for sea bass, *Lates calcarifer* (Bloch, 1790) supplemented with propionic acid and calcium propionate typically consists of 49 – 51% dry weight proteins. Fish with an average body weight of 0.4± 0.01 g were fed during 10 weeks with feed supplemented with 0 (i.e. control), 0.5, 1.0 or 1.5% propionic acid and 0.5, 1.0 or 1.5% calcium propionate in three separate tanks/treatment containing 20 fish. The results imply that fish fed with all treatments of feed supplemented with propionic acid or calcium propionate were not statistically significant (P>0.05) when compared with control group. As the fish fed with feed supplemented with 1.0% propionic acid had grown to an average body weight of 26.2±0.7 g after 10 weeks, which an average daily growth of 5.9±0.0 %/day. There were no statistically significant differences (P>0.05) in feed conversion ratio, survival rate and daily feed consumption between the different treatment groups. In control fish, there was highest protein digestibility (78.8±0.7%) and protein efficiency ratio (2.0±0.0) compared to fish fed with supplemented feed. Taken together, the results imply that feed supplementation with propionic acid or calcium propionate does not result in increased fish growth and protein digestibility after 10 weeks.

Histological study showed all treatments (acid supplementation) and control group have no effect to intestinal characteristic in sea bass. However, histological feature was observed a structure change of stomach. That is, pyloric caeca was not richly folded in treatment groups (propionic acid supplementation at 1.5% and calcium propionate supplementation at 1.0-1.5%) comparing to the control group. Thus, it implies that effectiveness of protein digestibility of stomach may slow down.

As a result, the 0.1% of propionic acid or 0.3% of calcium propionate should add in formulated feed processing which is valid legality for feed additive or may be antibiotic growth promoters (AGPs). From this study found that propionic acid usage had a tendency better than calcium propionate. However, all levels of propionic acid or calcium propionate supplementation in formulated feed were not found residue in fish muscle.

**Key words** : Seabass, Propionic Acid, Calcium Propionate, Growth, Histophatological

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