Meetings International
SciTechnol

J Mar Biol Oceanogr 2018, Volume: 7
DOI: 10.4172/2324-8661-C1-012

International Conference on

AQUACULTURE & MARINE BIOLOGY

June 25-27, 2018 | Rome, Italy

Effect of hydrolyzed mealworm and superworm meals on serum biochemical indices of sea trout *Salmo trutta Morpha trutta* juveniles

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The study was conducted to evaluate the impact of hydrolyzed mealworm and superworm larvae meals as partial replacement of fishmeal on blood biochemical indices and immune parameters of sea trout juveniles. Sea trout fingerlings were randomly allocated into 9 tanks and 25 fish per tank. Fish received three diets in triplicate tanks for 8 weeks. A control diet (CD) contained no insect meal, and the two tested diets contained 10% of hydrolyzed mealworm (MWD) and superworm meals (SWD). At the end of the trial blood samples were collected from 8 fish per tank, serum was isolated and later analyzed for biochemical indices and immune parameters. Elevated levels of aspartate transaminase in the serum of superworm diet (SWD) fed fish may indicate hepatic cell injury. Hypolipidemic effect of dietary insects can be associated with the presence of chitin which may interfere with lipid absorption in the intestine. No adverse effect of dietary insect meals on fish immune parameters was seen in this experiment. The results of the present study show that mealworm can successfully replace fishmeal in juvenile sea trout diet at 10% inclusion level with no negative effect on liver functions. However, results also suggest that the inclusion of superworm in juvenile sea trout diet may impair liver function to a certain degree.

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