

Determining the Essential Fatty Acid Requirements of Striped Trumpeter Larvae

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Background – Striped trumpeter (*Latris lineata*) is a marine finfish with aquaculture potential. Striped trumpeter has an extended larval phase and survival during this time is typically low. Similar constraints occur in larval marine finfish hatcheries worldwide that are often associated with inadequate fatty acid nutrition. Determining essential fatty acid requirements of larval fish, however, presents unique challenges.

Objective - To determine the fatty acid requirements of larval striped trumpeter during early development.

Design – Replicated groups of striped trumpeter larvae were fed one of seven diets containing graded concentrations of docosahexaenoic acid (DHA, 22:6n-3). Growth, behaviour, survival and biochemistry of the larvae were monitored.

Outcomes – Differences in larval behaviour and growth were observed and related to dietary DHA. An association between dietary DHA and bacterial proliferation in the larval gut suggested improved health and bacterial resistance in larvae fed higher dietary DHA. Using a novel approach, larval biochemistry was used to determine the requirement for dietary DHA.

Conclusions - DHA is an essential dietary component for larval striped trumpeter. Failing to provide DHA above calculated requirements can result in larvae with abnormal behaviour and lower resistance to infection.