Lecithin requirement of Penaeus monodon juveniles.

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It was observed that mean survival and yield per ha obtained were significantly higher in deeper ponds, 70.36% and 343.2 kg/ha, respectively, compared with those in shallow ponds, 37.50% and 180 kg/ha, respectively (P < 0.05). There was no significant difference in mean body weight at harvest for deep ponds (9.80 g) and shallow ponds (9.55 g). Results suggest that white shrimp production is better in deeper ponds than in shallow ponds.

**Effect of Dietary Fatty Acids on the Fatty Acid Composition of Penaeus monodon Juveniles**

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Six purified diets containing either pollack liver oil or a combination of dietary fatty acids (18:1ω9, 18:3ω3, 20:5ω3) at 5% level and a control (no lipid) were assessed for their influence on the fatty acid composition of Penaeus monodon juveniles (0.2-0.5 g). After a 35-day feeding period, the fatty acid composition of the neutral lipid (NL) and polar lipid (PL) fractions of prawn total lipids was analyzed. All treatments showed that the prawn lipid contained high level of polyenoic acids (20:4ω6, 20:5ω3, 22:6ω3); likewise the sum of ω3 series fatty acids (20:5ω3, 22:6ω3) showed that the prawn lipid contained high level of polyunsaturated fatty acids (PUFA), particularly 20:5ω3 and 22:6ω3. These indicate the importance of PUFA as dietary components.

Comparison was made between fatty acid changes during larval development and the fatty acid constituents of commonly used larval feeds (algae, rotifer, brine shrimp, egg yolk) for P. monodon. The algae and zooplankton were found to contain 20:5ω3, while egg yolk was high in total lipids but low in polyunsaturates. Most larval diets were deficient in 22:6ω3 fatty acid.

Crustaceans have been shown to have a limited capacity to biosynthesize long-chain PUFA; these have to be provided in their diet. These essential fatty acids must be available in appropriate amounts to ensure successful larval development and survival.

**Lecithin Requirement of Penaeus monodon Juveniles**

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An 8-week feeding experiment was carried out to determine the lecithin requirement of Penaeus monodon postlarvae. Six shrimps with initial mean weight of 0.11 g were stocked in oval fiberglass tanks in a flowthrough system with 40 ℓ of seawater. There were 5 replicates or a total of 30 shrimps per treatment. Diets were similar for all treatments except for the source of lipid and levels (0, 1 and 2%) of added soybean lecithin. Cod liver oil (treatments 1 to 3), crude degummed soybean oil (treatments 4 to 6) and refined soybean oil (treatments 7 to 9) were the three sources of lipid.

Differences in mean weight gain due to source among treatments were not significant after the fourth week of feeding but were significant after the sixth week. Mean survival rate was affected by source of lipid after the fourth and sixth weeks. Levels of lecithin significantly affected mean weight gain after the fourth and sixth week of feeding. Mean survival rate was significantly different among treatments after the sixth but not the fourth week. Although feed conversion or feed efficiency was generally poor, a trend is discerned. Feed conversion improved as dietary levels of lecithin increased from 0 to 2%. P. monodon juveniles need lecithin but the amount has yet to be defined.