

Abstracts of Other Contributed Papers

Effect of Dietary Astaxanthin and Vitamin A on the Reproductive Performance of *Penaeus monodon* Broodstock

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Reproductive performance of pond-reared tiger shrimp given astaxanthin (100 mg/kg diet) and Vitamin A (20,000 IU) for 61 days was assessed in a 2x2 factorial experiment in a completely randomized design. Mean gonad index (the degree of gonadal development) of shrimp fed diets containing astaxanthin and/or vitamin A (3.08-3.30) was significantly high ($P < 0.01$) compared with that of the control (2.36). However, shrimp fed astaxanthin supplement had a significantly higher ($P < 0.01$) mean gonad index than those fed diet with vitamin A. Interconversion of both supplements was highly detectable during gonadal development of shrimp. Fecundity ($3.2 - 7.3 \times 10$ eggs/female) and hatching rate of eggs (0.0 - 5.7%) were not significantly affected ($P > 0.05$) by the addition of astaxanthin and/or vitamin A in the diet. The results suggest that astaxanthin and vitamin A supplementation significantly improve gonadal development and spawning but not fecundity and hatching rate. Astaxanthin and vitamin A interconversion occurs more towards the astaxanthin pathway. Hormonal changes during eyestalk ablation could have influenced this interconversion. Further, astaxanthin is directly involved in the gonadal development of pond-reared shrimp broodstock. High maturation rate (60%), spawning rate (36%) and early occurrence of first spawning (14 days after eyestalk ablation) were observed in shrimp fed astaxanthin supplement.