vival of *Penaeus monodon* juveniles (PL_{50}; carapace length, 4.01 mm; body weight, 0.053 g) were studied in 80-ℓ glass aquaria. The treatments were: (a) a commercial pellet (40% protein); (b) *live Ruppia;* (c) decaying *Ruppia*; (d) live *Najas*; and (e) decaying *Najas.* The pellet was offered to satiety (approx. 100% of body weight) twice daily. Live *Ruppia* and *Najas* were transplanted in the aquaria using pond soil a week prior to the experiment. Decaying *Ruppia* and *Najas* were transferred from ponds. Salinity was maintained at 15 ppt and 50% of the water was changed regularly.

Highly significant differences ($P < 0.01$) in mean carapace length (CL) and mean body weight (BW) on the 10th, 20th and 30th days were observed among treatments. Increase in CL was fastest with decaying *Najas* and slowest in live *Ruppia* (14% vs. 17% after 30 days). Growth with decaying *Ruppia* was comparable to pellets on the 10th and 20th days but was faster after 30 days. Body weight on all sampling days was highest in decaying *Najas* and lowest in live *Ruppia.* Percentage increases were 122, 273 and 565% on the 10th, 20th and 30th days, respectively, with decaying *Najas.* Those given live *Ruppia* registered increases of 11, 67 and 94%, respectively. The rapid growth rate of animals on decaying *Najas* was compensated negatively by a low survival rate (31%), significantly lower than on live *Najas* (100%). Other survival percentages were: decaying *Ruppia,* 59% and pellet, 53%.

Hepatopancreas Cells as Monitor Cells for the Nutritional Value of Prawn Diets in Aquaculture

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The hepatopancreas is considered to be the central organ of metabolism in decapod Crustacea. It is a system of blind tubules consisting of four cell types. The E-cells at the summits of the tubules develop into R-cells (for resorption of nutrients), F-cells (for production of digestive enzymes) and B-cells (function unknown).

The ultrastructure of *Penaeus monodon* R-cells changes largely after starvation and feeding different diets. B-cells show slight reactions, while F- and E-cells are rather constant. Thirteen day-starvation results in a large decrease of the cell size and in a significant reduction of all cell organelles. After seven days starvation and four days refeeding with various extreme diets, the R-cells develop completely different food-specific ultrastructures. A distinct proliferation of the endoplasmic reticulum is characteristic of protein diets. Large fat drops are the main feature after refeeding with cod liver oil. Sucrose feeding results in "empty" cells with only few organelles. The most diversified ultrastructure with fat droplets and a high amount of all cell organelles is obtained by feeding a mixed diet.

The study indicates that R-cells are very sensitive to the application of different diets. They could be used as monitor cells for the nutritional value and the availability of a diet for prawns. Particularly poor or badly formulated feed could be detected early by electron microscopy. This method may be very helpful for the development of artificial prawn diets in aquaculture, especially if natural sources will be used as food components.

Effect of Cholesterol in Artificial Diets for Mediterranean Prawns

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Mediterranean prawn (*Penaeus kerathurus* Forsskal) postlarvae (2 months old) were fed *ad libitum* with previously tested artificial diet (41% D.W., mainly of vegetal origin) supplemented with different percentages of cholesterol (0, 0.1, 0.5, 1.0 and 3.0%) and fresh bivalve mussel. Growth and survival rates were determined twice.

Considering supplemented formulas only, data show that: (a) individual weights were higher with 0.1% cholesterol in the diet; (b) survival sharply dropped in the last week of the experiment, in particular with 0.1 and 3.0% cholesterol diets; and (c) with 1.0% cholesterol, mortality and growth counterbalanced giving over-all better results.

No artificial feed can compete with the natural diet, either for survival rate or for individual growth.

Evaluation of Artificial Feeds for Shrimp (*Penaeus monodon*) Production in Brackishwater Ponds

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The experiment was conducted in fifteen 500-m^2 brackishwater ponds to determine the response of *Penaeus monodon* juveniles fed with various artificial diets. Five treatments with three replicates each were: two commercial feeds containing 45% and 40% crude protein (treatments I and II), two experimental diets formulated to contain 35% crude protein (treatments III and IV) and control, without