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Attractants in purified diets

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Five juvenile *P. monodon* weighing about 0.2 gm were reared on purified diets in seven liters of seawater in a rectangular glass aquaria for six weeks. The diets contained the same amounts of casein 53%, cornstarch 34%, corn oil 5%, cholesterol 1%, vitamin-mineral mix 2% and alpha cel 5%. Plain water, shrimp, mussel, squid or trash fish extract, 125 ml was used to gelatinize the cornstarch. Approximately 10% of total biomass was fed morning and afternoon. Water was changed every morning before feeding and excess food and fecal matter were siphoned out.

Prawns were readily attracted to pellets made with shrimp and mussel extract. Fish was a poor third, squid was fourth and last were those prepared with plain water as judged from the reaction of the prawn the first time the experimental diets were offered and the amount of food unconsumed before the next feeding time.

Among those fed diets with attractants, growth increments were significantly highest for those fed with the mussel attractant, 219%, and lowest for those fed with the diet containing fish attractant, 47% ($P<0.05$) (Table 1). Those fed with squid or shrimp as the attractant had 169 and 154% weight increase respectively but were not significantly different from those fed with mussel attractant (Table 1).

Those fed the control diet decreased rapidly and in four weeks only 28% survived. At the end of 42 days there were no survivors. The highest survival rate was observed in the group given the shrimp attractant, mussel was next, fish third and squid last in descending order. However, survival rate among those fed attractants added to the diets were not significantly different from each other.

Results of growth rate show that enough of the food was consumed to effect growth. If growth and survival are used as parameters to measure the attractability of a diet, results showed that mussel was the best attractant followed by shrimp. The findings are in agreement with those made by Shewbart et al (1973). Clam solubles were found to be the best attractant in another test with *P. aztecus.* The study of Liao (New, 1976) also showed that *P. japonicus* preferred the short-necked clam to squid while fish flesh was the least preferred. Although the diet made with fish extract seem to be preferred as judged from the amount left unconsumed as compared to the diet made with squid extract, growth was poor among those fed the fish extract. In exploratory studies in the SEAFDEC laboratory, pellets that did not contain shrimp head meal were not as readily accepted by the prawn as compared to those that contained shrimp head meal (Pascual and Bandonil, 1977).

Table 1. Mean initial and final weights, percentage weight gain and survival of *P. monodon* juveniles fed a purified diet for 6 weeks.

Diets	Mean initial wt. (g)	Mean final wt. (g)	Mean weight gain (%)	Survival 1/ (%)
Sh	0.28	0.72	$154^{a,b}$ 2/	53^{a}
Sq	0.29	0.75	$169^{a,b}$	27^{a}
FS	0.31	0.46	47^{b}	33^{a}
M	0.35	1.14	219^{a}	40^{a}
C	0.32	–	–	0

1/ Mean of 3 replicates.

2/ Superscripts with the different letters are significantly different from each other ($P < 0.05$).

Although the diet prepared with shrimp extract seemed to give higher survival, growth seemed better with the diet containing mussel extract than with the shrimp. Since squid is an expensive item, the choice of an attractant is narrowed down to mussel and shrimp. One drawback in the use of extractives is that there are other nutrients present in the extract which might interfere with interpretation of results. However, if the same amount of the same type of extract is used for all treatments, variability is minimized.

Although pellet made with squid gave good weight gains, it is an expensive source of attractant. Mussel is the best and shrimp is next. Mussel extract could be used to enhance the attractability of purified diets.

Literature Cited

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