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# Preliminary biological evaluation of some formulated feeds for *P. monodon*

By

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In the absence of sufficient quantities of natural feeds, it is necessary to provide prawns with supplementary feed to maintain a high growth rate. In the search for an economical feed to provide for increased production, there is a need to evaluate the diets that have been compounded in the laboratory. The choice of supplementary feeds depends on the feeding habits of the prawn and the acceptability and efficiency of the pellet. The prawn is an omnivorous species and thrives on food like fish meal, trash fish and shellfishes. Rice bran is widely used by fishfarmers as supplementary feed while soybean cake is used both as feed and as fertilizer in fishponds. Both fish meal and shrimp head have been found acceptable as feed ingredients. However, not much is known of the acceptability and efficiency of a mixture of these ingredients as feed for *P. monodon* larvae. The objective of this study is to compare the growth and survival of prawns given three feeds: an imported pellet, and two compounded formulae prepared in the SEAFDEC feed laboratory, namely: FP-1s-77 and FP-2s-77.

Ninety 127-day old *P. monodon* were measured for length and weight and were randomly divided into nine aquaria each containing 20 liters of water. These were fed "lampirong" for two months previous to the study. There were three replications for each treatment. Length, weight, and survival rates were used to compare the efficiency of the diets. Weighed amounts of pellets equivalent to 100% of the body weight were fed during the first three days and reduced to 50% thereafter. The composition of the diet is shown in Table 1 while the calculated nutrient composition is in Table 2. The vitamin mixture and the procedure for making the pellet is described in the report in this series (Kalaw et. al, 1977).

A stopwatch was used to determine the length of time that elapsed before the shrimps would approach the pellet. Ten shrimps approximately 4 months in age were placed in 10 liters of water in a 25-liter aquarium. Two grams of each pellet type were placed simultaneously on opposite sides of the aquarium. The time that elapsed from the moment the pellets sunk to the bottom up to the time that any one shrimp approached the pellets was recorded.

Table 3 shows the initial weights and lengths, increments in length, weight and percentage of survival of the prawns after a month of feeding. The group fed the imported pellets gained the most. Those fed FP-2s-77 elongated faster than those fed FP-1s-77. Survival rate of those fed FP-2s-77 was 37% while those fed imported pellets was 73%. Both 1s and 2s pellets disintegrated in water easily but the imported pellets were stable even after six hours in water. The attractability test for the pellets showed that the prawns were more readily attracted to the pellets 1s and 2s than to the imported pellets (Table 4). However, this attractability could have been due to the rapid disintegration of these local pellets. The odor could have emanated faster from them than from the imported pellets which were more stable. In previous exploratory tests in the laboratory, shrimps seemed to be more attracted to pellets containing shrimp than to pellets without shrimp. More runs are being carried out in the laboratory to confirm the results.

**Table 1. Food composition of pellets**

	<i>FP-1s-77</i>	<i>FP-2s-77</i>
Shrimp heads	30	15
Fish meal	15	30
Soybean cake	15	15
Rice bran	15	15
Bread flour	15	15
Cassava starch	5	5
Corn oil	4	4
Vitamin-mineral mix *	1	0.95 V-22 mix 0.05 Vit C

\*Refer to Josie Kalaw's Table

**Table 2. Calculated chemical composition of feed**

Pellet type	Crude fiber	Protein	Fat	CHO	Calorie
1s	5.5	24.1	8.86	34.7	252
2s	4.0	28.0	12.07	27.5	265
Imported	5.0	25.27	10.0	—	—

**Table 3. Initial, final, weight and length, growth increments and survival rate of *P. monodon***

Diet	Mean Initial Average Wt. (gm)	Final Average Weight (gm)	Mean Wt. Gain (gm)	Mean Wt. Increment (gm)	Initial Ave. length (mm)	Final Ave. length (mm)	Mean length gain (mm)	Length Increment %	Survival rate %
1s	0.14	0.48	0.34	242	28.1	40.0	11.9	42	80
2s	0.27	0.86	0.59	218	32.8	49.6	16.8	51	37
Imported	0.21	0.41	0.20	95	30.6	38.4	7.8	25	73

**Table 4. Results of attractability test**

Feeding Period	Pellet type	Time elapsed (seconds)
A.M.	1s – 77 vs. IP*	20 vs. 35
	2s – 77 vs. IP	12 vs 22
P.M.	1s – 77 vs. IP	16 vs. 100
	2s – 77 vs. IP	20 vs. 854

\* Imported pellet

