Fishery Technology
2004, Vol. 41(1) pp : 67 - 70

Awareness and Perception of Shrimp Farmers on Feeds and Feed Management

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The study reports results of the survey on shrimp farmers regarding awareness on feeds and feed management. 60% of the farmers has moderate and 32% of them had good awareness about feeds and their management. The respondents perceived that availability and cost of feed were high. However, it was felt that the respondents needed guidance on better feed management practices through extensive education programmes.

Key words: Shrimp farmers, feeds, feed management

Shrimp aquaculture is an external input-intensive enterprise. Feed is the major input in shrimp farming costing as much as 50% of the total cost of production. Proper feed management is essential for successful and profitable shrimp culture (Ali, 2002). An investigation was carried out in Kancheepuram district of Tamil Nadu to study the shrimp farmers' awareness and perception about shrimp feeds and feed management.

Materials and Methods

The investigation was carried out in Kalpakam block of Kancheepuram district in Tamil Nadu. About 200 farms with a water-spread area of 250 ha were operating in this district. A sample of 30 shrimp farmers was interviewed randomly for the study. A teacher made test was employed to understand farmers' awareness about the feeds, their quality, scheduling and management. It consisted of 20 queries on which the farmers were asked to respond. Correct response was given a score of 1 and the wrong answer was assigned with zero score. The respondents scored above 20 were rated as good and those who scored less than 15 were rated as poor i.e. minimum awareness about feeds and feed management. The intermediate category recorded moderate awareness on the subject. Farmers' perception about feeds and feed management was investigated through open-ended questions. Appropriate statistical methods were used to analyse and interpret the data collected.

Results and Discussion

The respondents were of 30-50 age group. Their educational status varied from primary (33%), middle school (25%), SSLC (25%) and college level (16%). About one-third of farmers were fishermen (33%) and another one-third were engaged in business (33%). About 34% of them had shrimp farming as their primary occupation. Their farming experience ranged from one to six years. Most of the farmers were in patta lands and all were following semi-intensive culture of tiger shrimp with a stocking rate of 12-15/m^2. Most of them were small farmers with 0.5-1.5 ha of farm size.

Their social participation was found to be low. Majority of them had *"buy-back"* arrangement with input dealers who provide on credit and buy the product. Their contacts with extension agencies and exposure to mass media in respect of aquaculture were inadequate. The respondents obtained an average production of about 3.5 to 4 t/ha. Farmers felt that they should know more

about water quality management and good management practices of shrimp farming. Input dealers or/and technicians were the prime channels of information dissemination to the farmers.

The questions asked to know the farmers' awareness on feeds and feed management and percentage of respondents aware of each item are presented in Table 1. It may be noticed from Fig. 1 that 60% of the farmers had moderate and 32% of them had good awareness about feeds and their management. Majority of the respondents were aware of the quality of feed (70%), shelf life (77%), method of feeding (73%), time of feeding with starter feeds (77%), way of checking excess feeding (87%), monitoring of feeding (80%), necessity for water exchange

Table 1. Shrimp farmers awareness about feed management

S. No	Feeds and Feed Management aspects	Farmers Response	% of Farmers
1	How will you visually identify the quality of feed?	Texture, smell, colour and quality	70
2	Which quality of feed should be preferred?	Rich in protein and water stability	80
3	How long the feed could be stored at farm?	15 - 30 days (But procured once in a week)	77
4	Which FCR should be preferred?	< 1.5	60
5	What are the measures adopted for checking the quality of feed?	Odour, water stability, texture, should not be powdery	63
6	What is the frequency of feeding in your farm?	2-6 times	53
7	What method of feeding you adopt in your farm?	Broadcasting, dyke feeding or central feeding	73
8	How many feeding (check tray) locations/pond in your farm?	2-3	36
9	How will you assess the quantity of feed per day?	Based on check tray observation	20
10	Whether starter feeds are given immediately after stocking?	24 h after stocking	77
11	Will you check the biomass daily?	No, 40th doc sampling; after that once in 7-10 days	13
12	Mention the important additives?	*voccee, vitavax,* egg, etc.	40
13	How excess feeding is checked usually?	Based on check tray observation, if necessary increase or decrease feed quantity	87
14	How long feeding is monitored?	Throughout the culture	80
15	Is it necessary to decrease feed during moulting time?	Yes	63
16	Is it necessary to decrease during disease time?	Yes	80
17	Is it necessary to decrease during plankton bloom?	Yes	60
18	Is the dissolved oxygen affect the feeding?	Yes	57
19	Is it necessary to do water exchange when over feeding is done?	Yes	70
20	Will you prefer separate feed for low saline and high saline shrimp culture?	No	87

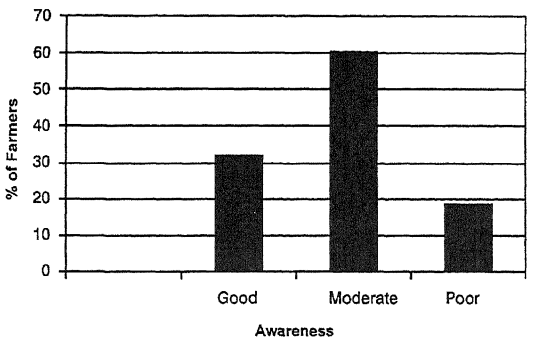

Fig. 1. Farmers' Awareness on Feed Management

when over feeding is done (70%) and preference of separate feed for low saline and high saline shrimp culture (87%). More than half of the respondents were aware of what FCR should be preferred (60%), measures adopted for checking the quality of feed (63%), necessity to decrease feeding during plankton bloom (60%) and dissolved oxygen and feeding (57%). Some of the respondents were aware of frequency of feeding (53%), feeding locations/ponds (36%), assessing the quantity of feed (20%), biomass estimation (13%) and important additives (40%). In general the farmers were aware of the estimation of feed quantity and characteristics of a quality feed.

The farmers fed the shrimp with pellet feeds as per the advice given by the feed technicians. The feeding began after 24 h of stocking, starting with 2 times per day up to 7th day of culture (DOC) (feed grade no.1), 3 times up to 21 DOC (1&2), 4 times up to 60 DOC (2&3), 5 times up to 100 DOC (3 & 4) and 6 times after 100 DOC (4&5). Night and early morning feeding were given 1 kg extra compared to other feeding timings. To adjust size variation, gap feeding was done twice a day in 4:1 ratio (if regular feeding was 4 kg then gap feeding of previous grade as 1 kg) until harvest. Feed quantity was determined based on check tray observation only. Feed additives were applied @ 5 g/kg of feed with fish oil as binder in two feedings (morning & evening) to facilitate better consumption. First sampling of the stock was done on or after 40 DOC and after that the feeding schedule was refined. The FCR reported varied between 1.4 to 1.7:1. Most of the farms purchased feed on credit basis since majority of them had *"buy-back"* arrangement with the feed dealers. The average cost of the feed is Rs. 50-60/kg on credit and Rs.45-50/kg for cash payment depending on the brand.

The perception of farmers about feed and its performance are given in Table 2. The respondents perceived that availability and cost of feed were high. Uniformity of size, texture, colour & odour of the feed, growth rate, feed conversion ratio (FCR), shelf life and quality of feed were perceived as average. Water stability and attractability of the feed were perceived as good.

Table 2. Farmers' perception about the feed and its performance

S. No	Feed parameters	Farmers Response
1	Availability of the feed in market	High
2	Cost of the feed	High
3	Uniformity of size	Average
4	Texture of the feed	Average
5	Colour	Average
6	Odour of the feed	Average
7	Growth rate	Average
8	Feed Conversion Ratio (FCR)	Average
9	Shelf life	Average
10	Water stability & attractivity	Good

The study also revealed that the farmers were aware of feed management practices. However, it is essential that the institutional extension machinery should be geared towards educating the farming community on better-feed management practices and ways

of reducing their unnecessary expenditure. Further it is felt that unless institutional credit is offered to farmers it will be very difficult to free them from the control of inputs dealers.

The authors are grateful to Dr. Mathew Abraham, Director, CIBA, for his constant encouragement.

References

Ali, S.A., 2002 Feed Management in Shrimp and Finfish Aquaculture In: Syed Ahamad Ali (Ed.), *Training Manual on Shrimp and Fish Nutrition and feed management*, CIBA Special Publication No. **15**, pp 75-81

Paulpandi, 2000. *Perception of farmers about different types of shrimp feeds*. MF.Sc. Thesis, CMFRI, Cochin