

EXTENT OF TECHNOLOGY ADOPTION IN PRAWN PEELING/FISH PRE-PROCESSING SHEDS

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ABSTRACT

This paper deals with the extent of adoption of recommended practices by prawn peeling/fish pre-processing sheds and relationship between socio-economic characteristics of selected respondents of fish pre-processors (prawn peeling/fish pre-processing sheds) with their adoption behaviour. The extent of adoption was quite high among the respondents for the complete sheltered building for peeling (92.50%) and chilling of raw material during pre-processing at every stage (57.50%). The standardized partial regression coefficients of two variables viz., number of days employed/year and experience were positively and significantly contributing the variation of knowledge level of fish pre-processors. Out of the fourteen selected independent variables of fish pre-processors studied, only the standardized partial regression coefficient of debt had significant and positive contribution towards the variation in the skill level of fish pre-processors and experience had significant and positive contributions towards the adoption behaviour of fish pre-processors.

Key words: Extent; Adoption; Fish pre-processors; Knowledge level; Adoption behaviour

INTRODUCTION

The quality of the processed product can in no way be better than the quality of the raw material used. When the product goes to the consumers directly through the chain stores, one should understand the need of producing supreme quality products, free from any bacterial contamination (Jagadees, 1988). This is possible only while improving the hygiene of the prawn peeling/pre-processing centers where the chances of contamination are more. Further, by knowing level of adoption it is possible to identify the extent of gap available in knowledge, skill and adoption level which can easily be bridged by transferring suitable technologies. Keeping the above in view, this study was conducted with the following specific objectives: (i) To study the extent of adoption of improved practices of fish pre-processing method (ii) To study the relationship between socio-economic characteristics of fish pre-processors (prawn peeling/fish pre-processing sheds) with their adoption behaviour among the selected prawn peeling/fish pre-processing shed owners/partners.

The technologies related to the fish pre-processing have been developed and perfected by institutes like Central Institute of Fisheries Technology (Iyer, 1979; Joseph, 1979; Mathan, 1979; Thomas, 1979; Kaul, et al, 1989; Kandoran et al, 1993; Balachandran, 1995; Kandoran and Thomas, 1997; CIFT & SOFT(I), 2000) and Marine Products Export Development Authority, (MPEDA, 1994).

METHODOLOGY

The study was conducted among the prawn peeling / fish pre-processing shed owners/partners in Ernakulam District of

Kerala State. The selected 9 practices viz., complete sheltered building for peeling etc., peeling and sorting on peeling tables or raised flat platforms, chilling of raw materials during pre-processing at every stage, provision for insulated storage, provision of storage for others, use of potable water for pre-processing of sea foods (Drinking water or quality water), cleaning of tables/utensils, etc., cleaning of peeling shed floor and testing of chlorine level using chlorites papers/other test procedure used were carefully verified with the help of fishery technologist . 14 socio-economic characteristics namely, age, education, number of days employed / year, experience, size and type of family, social participation, annual income, debt, house owned, extent of land owned, sources of information, contact with extension agency, exposure to media and perception of profitability and 3 dependent variables such as, knowledge level, skill level and adoption behaviour of prawn peeling/fish pre-processing shed owners/partners were selected for the study. The data were collected through interview schedules / questionnaires from 40 selected respondents at random. The collected data were analysed by using statistical methods like , frequencies / numbers, percentage analysis, correlation, regression etc.

RESULTS AND DISCUSSION

Extent of adoption of improved practices of fish pre-processing method: From Table 1, it could be seen that 92.50% of the respondents showed full adoption in using complete sheltered building for peeling. 57.50% showed full adoption in using chilling of raw materials during pre-processing at every stage, 42.50% showed full adoption in using peeling and sorting on

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peeling tables or raised platforms and 40.00% of them showed full adoption in testing of chlorine level using chlorites paper / other test procedure used.

Table 1. Extent of adoption of improved practices of fish pre-processing method (in terms of adopters) (N=40)

Improved Practices	Extent of adoption of improved practices of fish pre-processing method							
	Non - adopter		Low adopter		Partial adopter		Full adopter	
	No	%	No.	%	No.	%	No.	%
Complete sheltered building for peeling etc.	0	0.00	0	0.00	3	7.50	37	92.50
Peeling and sorting on peeling tables or raised flat platforms.	1	2.50	5	12.50	17	42.50	17	42.50
Chilling of raw materials during pre-processing at every stage.	2	5.00	9	22.50	6	15.00	23	57.50
Provision for insulated storage.	30	75.00	1	2.50	2	5.00	7	17.50
Provision of storage for others.	17	42.50	5	12.50	3	7.50	15	37.50
Use of potable water for pre-processing of sea foods(drinking water or quality water).	4	10.00	9	22.50	16	40.00	11	27.50
Cleaning of tables, utensils etc.	2	5.00	1	2.50	29	72.50	8	20.00
Cleaning of peeling shed floor.	2	5.00	0	0.00	33	82.50	5	12.50
Testing of chlorine level using chloritest. paper/other test procedure used.	17	42.50	2	5.00	5	12.50	16	40.00

The maximum non-adoption was showed in the provision for insulated storage (75.00%), provision of storage for others (42.50%) and testing of chlorine level using chloritest paper / other test procedure used (42.50%).

Socio-economic characteristics of fish pre-processors with their

adoption behaviour:

Correlation co-efficient was carried out to know the relationship between socio-economic characteristics of fish pre-processors with their knowledge, skill and adoption behaviour of improved fish pre-processing method.

Table 2. Correlation of independent variables of fish pre-processors with their knowledge level, skill level and adoption behaviour (N=40) (X=14)

Variables No.	Selected independent variables	Correlation Co-efficient		
		Knowledge level (Y1)	Skill level (Y2)	Adoption behaviour (Y3)
X1	Age	-0.1033	0.0329	-0.1484
X2	Education	0.5358**	0.4904**	0.5347**
X3	Number of days employed/year	0.5429**	0.3285*	0.3446*
X4	Experience	0.2847	0.2685	0.3719*
X5	Size and type of family	-0.1017	-0.2157	-0.1476
X6	Social participation	0.0701	-0.0186	0.0555
X7	Annual income	0.2300	0.4304**	0.2571
X8	Debt	0.0446	0.3452*	0.2353
X9	House owned	0.0049	0.1738	0.0329
X10	Extent of land owned	-0.0919	0.0566	-0.0889
X11	Sources of information	0.2902	0.1623	0.2617
X12	Contact with extension agency	0.2068	0.3465*	0.3345*
X13	Exposure to media	0.2142	0.3077	0.3090*
X14	Perception of profitability	0.3640*	0.5778**	0.3628*

** - Significant at 0.01 level of probability

* - Significant at 0.05 level of probability

The results indicated that (Table 2) the education, number of days employed per year and perception towards profitability showed significant relationship with knowledge level of fish pre-processors. Whereas education, number of days employed per year, annual income, debt, contact with extension agency and perception of profitability showed significant positive relationship with skill level of fish processors and the education, number of days employed per year, experience in fishery business, contact with extension agency, exposure to media and perception of profitability showed positive and significant relationship with the adoption behaviour of fish-pre-processors. All the other selected variables showed non-significant relationship.

The multiple regression analysis (Table 3) of socio-economic characteristics revealed that the selected 14 variables showed 58.76 percent variation on knowledge level, 69.46 percent variation on skill level and 56.42 percent variation on adoption behaviour. Out of the fourteen variables selected for the study the partial regression co-efficient showed that the variables number of days employed per year and experience had significant contribution towards variation of knowledge level, debt had significant contribution towards the variation of skill level and experience had significant contribution towards the variation of adoption behaviour of fish pre-processors.

Table 3. Multiple regression of socio-economic characteristics with knowledge, skill and adoption behaviour N = 40

Socio-economic characteristics	Partial regression co-efficient		
	Knowledge	Skill	Adoption
Age	0.0121 (-0.552)	0.0063 (0.398)	0.0652 (-1.321)
Education	0.0896 (1.569)	0.0190 (0.696)	0.0316 (0.903)
No. of days employed/year	0.1582 (2.168*)	0.0454 (1.090)	0.0409 (1.033)
Experience	0.1478 (2.082*)	0.0186 (0.689)	0.1867 (2.396*)
Size and type of family	0.0236 (-0.777)	0.0908 (-1.550)	0.0407 (-1.030)
Social participation	0.0031 (0.279)	-0.0008 (-0.147)	0.0029 (0.271)
Annual income	0.0032 (0.283)	0.1276 (1.913)	0.0224 (0.756)
Debt	0.0221 (-0.752)	0.1629 (2.206*)	0.0344 (0.944)
House owned	0.0286 (0.858)	0.1096 (1.754)	0.0260 (0.816)
Extent of land owned	0.0579 (-1.240)	0.0704 (-1.376)	0.0807 (-1.481)
Source of information	0.0092 (0.483)	0.0895 (-1.568)	0.0213 (-0.738)
Contact with extension agency	0.0539 (-1.194)	0.0093 (0.486)	0.0023 (0.241)
Exposure to media	0.0495 (-1.141)	0.0751 (1.425)	0.0204 (0.722)
Perception of profitability	0.0423 (1.051)	0.1250 (1.890)	0.0026 (0.256)
R ²	0.5876	0.6946	0.5642
F	2.544*	4.062*	2.312*

Figures in the parenthesis indicates 't' value

** - Significant at 0.01 level of probability

* - Significant at 0.05 level of probability

CONCLUSION

The study indicated that the extent of adoption was very low for the practices like for insulated storage, provision of storage for others, testing of chlorine level using chloritest

paper etc. The full adoption was reported for very few practices by less than half of the respondents. The partial adoption and low adoption were in varying proportions for all the practices. This showed that there is a wider scope to improve the quality of processed product thereby marketing of the same by making the pre-processors to adopt all the recommended practices developed by CIFT. This can easily be achieved by conducting training programmes to identify pre-processor where the level of adoption is low.

The correlation co-efficient of the variables education and number of days employed per year showed positive and significant relationship with knowledge, skill and adoption behaviour. By improving the education level in terms of training programmes to the fish pre-processors with low educational level and improving their number of days employed per year by developing infrastructure for their pre-processing activities there is wider scope for improving their knowledge, skill and adoption behaviour besides strengthening the extension agency contact and mass media exposure where they had positive and significant association with adoption behaviour of fish pre-processors.

The above finding was again reaffirmed by multiple regression analysis; an unit increase in the fishery business experience of the fish pre-processors by imparting training to the fish pre-processors with less experience showed result in 0.1478 unit of their knowledge level and 0.1867 unit of their adoption behaviour. Like wise the an unit increase in the number of days employed per year by developing infrastructure for their fish pre-processing activity showed result in 0.1582 unit in their knowledge level and an unit increase in debt i.e. by improving their credit facility showed result in 0.1629 unit increase in their skill level.

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