

Adoption of Hygienic Fish Handling Practices by Fishermen

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ABSTRACT

This paper attempts to explore the extent of adoption of hygienic fish handling practices among the mechanized fishermen of Thoothukudi district in Tamil Nadu. Data on the extent of adoption of hygienic fish handling practices among the fishermen were collected through personal interview. Of the 10 practices evaluated, the adoption scores were higher for five practices viz., Icing of fish (96.67%), Cleaning of deck (94.17%), Cleaning of fish hold and accessories (90.83%), Packaging of fish (77.50%) and Personal Hygiene (60.83%). It was observed that erratic price fluctuations; lack of cold storage; and insufficient loans and subsidies were the major problems faced by the fishermen in practising the hygienic fish handling practices. Price regulation by Government intervention; establishment of cold storage in auction hall; and providing sufficient loans and subsidies without collateral security from banks were the suggestions of the fishermen for the perceived problems.

Key words: Adoption; Mechanized fishermen; Hygienic; Fish handling practices;

Tamil Nadu has 1079 km long coastline with 0.19 million ha of EEZ (Exclusive Economic Zone) and 41,412 sq. km of continental shelf. About 6, 90,000 marine fishermen from 591 fishing villages along the coastline are fishing with 53,844 traditional and 12,325 mechanized crafts (*Sakthivel, 2008*). Consumer's greatest concern is the quality and safety of food they eat. To achieve these, it is important to popularize good hygienic practices. The post-harvest handling of catch is the most important step in the production of a high quality finished product (*Balasubramaniam et al., 2009*). The freshness of the fish is very important and has become a major issue in the fishing industry. The quality of the product reaching the end user will greatly depend on how the fish was handled onboard the vessel, how it was preserved, packaged, transported, etc. Much emphasis has been given on hygienic handling of the fish right from catch in order to ensure good quality and long storage life. Primary responsibility for ensuring the quality of landed fish rests with those who handle it onboard. Many factors affect the quality of fish onboard such as cleanliness of the deck and fish holds, quality and quantity of water used, temperature at which fish is maintained, the general handling practices adopted, cleanliness of the equipments and utensils used in

handling, packaging and storage and the personal hygiene of the fish handlers. The quality of ice is of utmost importance to preserve fishery products from being spoiled. The ice should be made of fresh water or portable water to produce good quality ice. Therefore, the study was designed with following objectives :

- (a) To study the extent of adoption of improved hygienic fish handling practices among fishermen
- (b) To study the relationship among socio-personal characteristics of fishermen and their adoption behavior and
- (c) To identify the problems in adoption of hygienic fish handling practices and suggestions to overcome the problems.

METHODOLOGY

The study was conducted during 2008-2009 among the fishermen in three fishing villages of Thoothukudi district in Tamil Nadu viz. Tharuvaikulam, Thoothukudi South and Thoothukudi North. The data were collected from a random sample of 120 fishermen. The selected practices viz., on board cleaning, cleaning of fish hold and accessories, washing of fish, sorting of fish, evisceration and removal of gills and bleeding of big fishes, packaging of fish, icing of fish, personnel hygiene, auction hall cleaning and handling of fish in auction hall

were carefully verified. The adoption level of each respondent was calculated using the formula developed by Kumaran *et al.* (2003).

$$\text{Adoption} = \frac{n}{N} \times 100$$

n = No. of respondents who had adopted the practice

N = Total number of respondents

Socio-economic characteristics viz., age, educational status, marital status, family status, occupational status, annual income, information source exposure, economic motivation, social participation status, mass media exposure, experience in fishing, contact with extension agency, scientific orientation, training undergone, innovativeness and knowledge level were also selected for the study. The data were randomly collected from 120 respondents through personal interview with the help of pre-tested survey schedule and the data were analyzed using statistical methods like percentage analysis, mean, standard deviation, correlation coefficient etc.

RESULTS AND DISCUSSION

The study revealed that some of the important practices were not adopted by the fishermen (Table 1). It could be seen that the fishermen had not adopted the practices such as washing of fish on board (100.0%), sorting of fish (84.17%), evisceration and removal of gills and bleeding of big fishes (100.0%), personal

Table 1. Extent of adoption of hygienic fish handling practices by the fishermen

S. No.	Practices	Adoption Non adoption			
		No.	%	No.	%
1.	Cleaning of deck	113	94.17	7	5.83
2.	Cleaning of fish hold and accessories	109	90.83	11	9.17
3.	Washing of fish	0	0	120	100
4.	Sorting of fish	19	15.83	101	84.17
5.	Evisceration and removal of gills and bleeding of big fishes	0	0	120	100
6.	Packaging of fish	93	77.50	27	22.50
7.	Icing of fish	116	96.67	4	3.33
8.	Personal Hygiene	73	60.83	47	39.17
9.	Auction hall cleaning	8	6.67	112	93.33
10.	Hygienic handling of fish in auction hall	16	13.33	104	86.67
11.	Average adoption of all practices put together	45.58	54.42		

hygiene (39.17%), auction hall cleaning (93.33%) and hygienic handling of fish in auction hall (86.67%). The practices such as cleaning of deck (94.17%), cleaning of fish hold and accessories (90.83%), packaging of fish (77.50%), icing of fish (96.67%), personal hygiene (60.83%) were adopted by the fishermen.

It could be concluded that the adoption of hygienic fish handling practices by fishermen was very much influenced by educational status, annual income, information source exposure, mass media exposure, experience in fishing, scientific orientation, innovativeness and knowledge level (Table 2).

Table 2. Correlation between the socio-personal characteristics of fishermen and their adoption

S.No.	Variables	r-value
X1	Age	0.0424457
X2	Educational status	0.3128**
X3	Marital status	0.0891 ^{NS}
X4	Family status	0.0986 ^{NS}
X5	Occupational status	0.0374 ^{NS}
X6	Annual income	0.4136**
X7	Information source exposure	0.3415**
X8	Economic motivation	0.0102 ^{NS}
X9	Social participation status	0.1417 ^{NS}
X10	Mass media exposure	0.2936*
X11	Experience in fishing	0.2748**
X12	Contact with extension agency	-0.0352 ^{NS}
X13	Scientific orientation	0.3142**
X14	Training undergone	0.1573 ^{NS}
X15	Innovativeness	0.4714**
X16	Knowledge level	0.5138**

Note: * - Significant at 5% level, ** - Significant at 1% level, NS – Non-significant

The problems faced by the fishermen regarding adoption of hygienic fish handling practices have been presented in Table 3. The erratic fluctuation in the price of fish was the major problem as reported by the majority of the fishermen (84.16%). Lack of cold storage and insufficient loans/subsidies were the other problems reported by 75.83 per cent and 74.16 per cent of the fishermen, respectively.

Table 3. Problems perceived by the fishermen (n=120)

S.No.	Problems	No.*	%
1.	Erratic price fluctuations	101	84.16
2.	Lack of cold storage facilities	91	75.83
3.	Insufficient loans/ subsidies	89	74.16

*Multiple response

It could be seen from the results furnished in Table 4 that majority of the fishermen (77.50%) suggested the regulation of price by Government intervention while 70.00 per cent of the fishermen suggested to establish cold storage in auction hall and 62.50 per cent respondents suggested to provide sufficient loans/subsidies without collateral security from banks.

Table 4. Measures suggested by the fishermen

S.No.	Suggestion	No.*	%
1.	Price regulation by Government intervention	93	77.50
2.	Establishment of cold storage in auction hall	84	70.00
3.	Provide sufficient loans/subsidies without collateral security from banks	75	62.50

*Multiple response

CONCLUSION

The fishermen of Tamil Nadu coasts are carrying out hygienic fish handling practices on their

own experiences and most of the technical aspects of carrying out right hygienic fish handling practices to get quality fish by consumers are not known to them. Change in their socio-economic characteristics is needed to bring about change in their adoption behaviour. It is essential that all the mechanised fishermen be undertaken induction training so that they understand the food safety risks associated with handling fish. They need to be trained in basic hygiene and handling to ensure the production of safe seafood. Regulations should be formed to avoid the fluctuation of prices of fish commodities so that they get fair price returns for practising hygienic fish handling operations. Sufficient number of cold storage facilities should be established in the auction hall to avoid the spoilage of the fish and there is need to simplify the procedure of loan/subsidies so that maximum number of the fishermen can be benefited.

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