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TRADITIONAL FISH DRYING ACTIVITIES AND MARKETING STATUS OF DRIED FISH AT TARASH UPAZILA UNDER SIRAJGANJ DISTRICT OF BANGLADESH

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ABSTRACT

Sharmin S, Ali MM, Monir MS, Doulah MAU, Sarwer MG (2014) Traditional fish drying activities and marketing status of dried fish at Tarash upazila under Sirajganj district of Bangladesh. *Marine Res. Aqua.* 2(1), 32-37.

The present study was conducted on traditional fish drying activities and marketing status of dried fish for a period of six months from September 2011 to February 2012 at Tarash upazila under Sirajganj district of Bangladesh. The sources of raw fish for drying were mostly from Chalan beel and dry fish farmers collected raw fishes from landing centers (85%), directly from fishermen (12%) and also small amount from middlemen (3%). Total 21 fish species were identified among them 5 species were common, 13 species few and 3 species were rarely used for drying. The peak season for fish drying was observed in August to October. Salt mixing rate was found as 1kg salt for 10-15 kg of raw fish and drying duration at normal weather condition was 2-6 days depending on the size of the raw fishes. It was observed that almost all the dried fish product (98-99%) carried to the wholesale market at Saidpur in Nilphamary, Rangpur and some parts of Dhaka from the surveyed areas. However, total five (5) types of dried fish marketing channels were observed which consisted dried fish farmers, several middleman and consumer. The price of the dried fishes was ranged from BDT 90-650 per kg. The highest price range of the dried fishes was found BDT 550-650 per kg for Batasi (*Pseudeutropius antherinoides*) and Boal (*Wallago attu*). The major constraints facing by the dry fish processors were lack of access to credit facilities, marketing infrastructure, transportations and storage facilities in the study area.

Key words: fish drying, processor, marketing, tarash upazila

INTRODUCTION

Dried fish is the most popular food item in Bangladesh. It is the main protein source in many region including Chittagong, Dhaka, Chandpur, Kuakata, Barisal and northern part of this country. The nutritional quality remains intact, sometimes retains higher quality standards compared to fish (as per unit weight). Special flavor is highly relished by different ethnic people. The product of dried fish is easily transportable, marketable and storable (Nowsad 2007). Recently, it is exported abroad from Bangladesh where the main consumers are immigrants and worker of the third world country (Bhuiyan *et al.* 2009). Drying is traditional method, which has been used for centuries for preserving fish and consider as the least expensive method of fish preservation (Balachandran 2001 and Waterman 1976). In Bangladesh, traditional drying is often rudimentary and good hygiene is rarely practiced (Azam 2002). Furthermore, when humidity levels become high in rainy season and sufficient drying cannot be achieved using traditional methods. In such conditions, stored dried fish re-absorb moisture and become susceptible to bacteria, fungal or insect attack (Azam 2002 and Monir *et al.* 2013). To improve the existing condition, it is necessary to understand the present status of drying activities. Although, several works were done on fish drying at different regions of Bangladesh by (Nowsad 2005; Reza *et al.* 2005 and Flowra *et al.* 2012) but study on dry fish producing activities and marketing status in Tarash upazilla under Sirajgong district of Bangladesh is very scanty.

MATERIALS AND METHODS

Study area and duration

The study was carried out in the dried fish producer/processors of Tarash Upazila of Sirajganj district for a period of six months from September 2011 to February 2012.

Sampling framework and data collection

Questionnaire based interview was taken in collecting data for the present study. A total of 30 dried fish producers/processors were selected for questionnaire interviews in the dried fish processing area. The questionnaire interviews were taken through simple random sampling method. A questionnaire was prepared, pre-tested in field situation and then modified with necessary corrections for data collection. However, all the data were cross checked for ensuring the accuracy of data collected from the responds.

Data analyses

Finally, collected data were tabulated and analyzed by using computer software Microsoft Excel.

RESULTS AND DISCUSSION

Sources and collection of raw fish for drying

The sources of raw fish for drying were mostly from Chalan beel and nearby ponds in the study area. Generally, dry fish farmers collected raw fishes from landing centers (85%), directly from fishermen (12%) and also small

amount from the middlemen (3%). It was observed that large amount raw fishes were collected by the dry fish farmers in the peak harvesting season (July to September) due to availability of raw fish and low market price. Depending on availability of raw fish in local markets, price of raw fish and season, most of the dry fish farmers gathered normally 12-100 kg fresh fish for sun drying everyday. In most cases, it was observed that raw fishes was transported from fish landing to fish drying centers generally by normal van, own bicycle, rickshaw and some times by head load.

Species used for drying

A total of twenty one (21) different fish species were recorded that were used for drying in the surveyed area. Among them, on the basis of availability five (5) species were found commonly, thirteen (13) species were few and three (3) species were rarely for drying (Table 1). Drying of cultured an exotic fish silver carp (*Hypophthalmichthys molitrix*) was also observed. For sun drying purpose fish species can be divided into two main categories such as major fish species (90% of total dried fish) and minor fish species (10% of total dried fish) (Fig. 1). Major categories include those fish species that are main targeted dried fish species and minor species include different fish species that remain small quantity mixed with major fish species.

Table 1. Species used for sun drying in Tarash upazila under Sirajganj district

S1. No.	Bangla name	Scientific name	Availability
01	Punti	<i>Puntius sophore</i>	Common
02	Punti	<i>Puntius conchoniuis</i>	Few
03	Tit-punti	<i>Puntius ticto</i>	Few
04	Nama chanda	<i>Chanda nama</i>	Common
05	Chanda	<i>Parambassis lala</i>	Few
06	Colisa	<i>Colisa fasciata</i>	Few
07	Mola	<i>Amblypharyngodon mola</i>	Few
08	Silver carp	<i>Hypophthalmichthys molitrix</i>	Few
09	Bou, Rani	<i>Botia dario</i>	Rare
10	Chapila, Khoira	<i>Gudusia chapra</i>	Rare
11	Taki, Lata	<i>Channa punctatus</i>	Common
12	Gutum, Gorkun	<i>Lepidocephalus guntea</i>	Few
13	Kakila	<i>Xenentodon cancila</i>	Few
14	Tengra	<i>Mystus vittatus</i>	Few
15	Sing, Jiol	<i>Heteropneustes fossilis</i>	Rare
16	Guchi	<i>Mastacembelus pancalus</i>	Few
17	Tara baim	<i>Macrornathus aculeatus</i>	Few
18	Bele, Baila	<i>Glossogobius giuris</i>	Few
19	Boal	<i>Wallago attu</i>	Common
20	Batashi	<i>Pseudeutropius antherinoides</i>	Few
21	Icha, Chingri	<i>Macrobrachium sp.</i>	Common

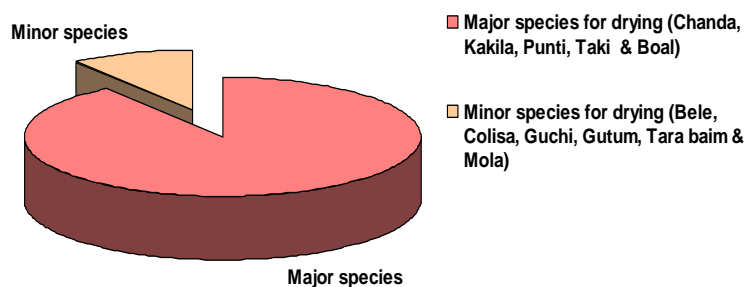


Fig. 1. Categories of fish species for drying in the study area

Season of fish drying

Fishes are dried throughout the year depends on supply of raw fishes, weather condition and market demand in the study area. It was observed that most of the dry fish farmers starts fish drying mainly in June and end of

December. However, the peak season of fish drying was observed in August to October (Fig. 2). It was found that almost all the dried fish producer spend around 9 to 10 hours in peak season for fish drying activities.

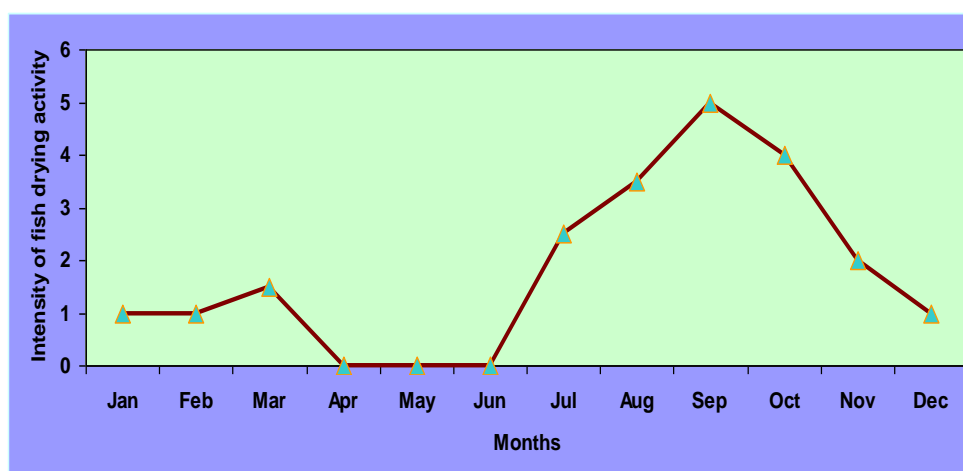


Fig. 2. Fish drying activities throughout the year in the study area

Preparation of raw fish for drying

Different activities were done before drying the fish including sorting, scaling, gutting, dressing, washing, salting, drying and marketing in the study area (Figs. 3 and 4). It was observed that sorting was performed mainly on the drying yard and most cases female workers were engaged for these activities. Dry fish farmers sorted the collected raw fishes mainly for separate the small and large fishes. Most of the farmers in the study area used mostly beel water and in some cases tube well water for washing the raw fishes. It was also observed that some dry fish farmers did not wash their raw fishes. The small fishes mainly SIS was found to be dry directly under the sun without any dressing and washing. The large fish like, Boal (*W. attu*), Silver (*H. molitrix*) and Taki (*C. punctata*) were found to practice for gutting and splitting. In most cases, the dry fish farmers beheaded and gutted of Taki (*C. punctata*) before drying. In case of Boal (*W. attu*) and Silver carp (*H. molitrix*), splitting was done for uniform drying of all parts of muscle after beheading and gutting in the study area.

Salting

Salting is one of the most important step for preparations of drying fish. It was found that salt was rubbed thoroughly over the body after scaling of large fishes in the study area. Generally they used table salts and most of the dried fish processor did not maintain any fixed ratio for salting the fish. The rate of mixing of salt normally was found as 1 kg salt for 10-15 kg of raw fish. However, more or less similar findings were also found by Flowra *et al.* (2012).

Sun drying

In the surveyed area, drying process varied according to the size and type of fishes as well as choice of consumers. It was found that small fishes were dried in the sun by spreading them either on the open field or on bamboo made rack called 'khola' in most cases. It was observed that large fishes were hanged from a rope tied horizontally to the two poles placed vertically for drying instead of using any rack. Drying duration varied according to the weather conditions like intensity of sunlight, temperature, relative humidity, wind flow, status of rain and duration of day. It was found that at normal weather condition drying duration varied between 3-7 days depending on the size of fishes in the study area. The products were found to be contaminated with soil, dirt and blow fly. In some dry fish farmers were found to use insecticides in raw fishes before drying for preventing from insect infestation. Reza *et al.* (2005) studied about some commercial important marine dried fishes of Bangladesh where they observed raw fishes were soaked in various types of insecticides including DDT and Nogos before drying. This finding agrees with the present findings.

Packaging and storage

After drying, the dried fishes were packed in jute bags (locally called 'Kail') or bamboo baskets and then stored for 5-15 days at room temperature before marketing. In some cases dry fish farmers stored the dried fishes in a tent generally made of thin plastic sheet and bamboo splits at drying yard places. The packed dried fishes were temporarily stored into these tents until marketing or selling.

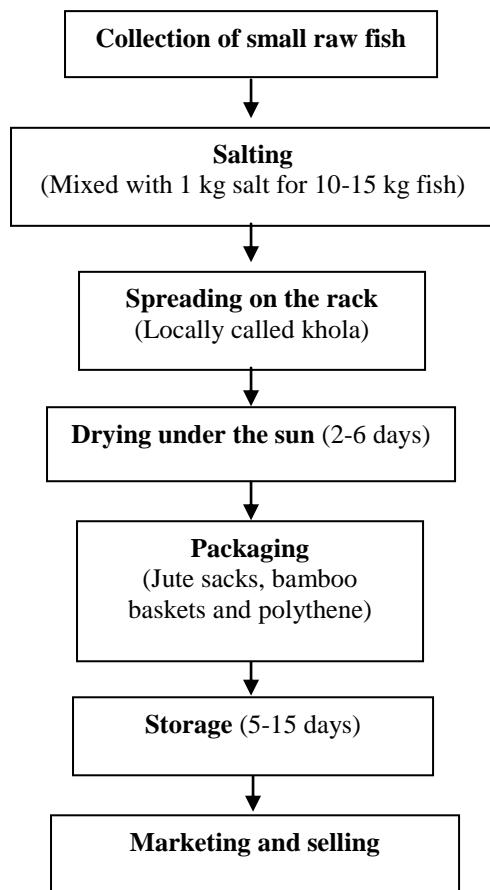


Fig. 3. Flow chart for drying activities of small fishes

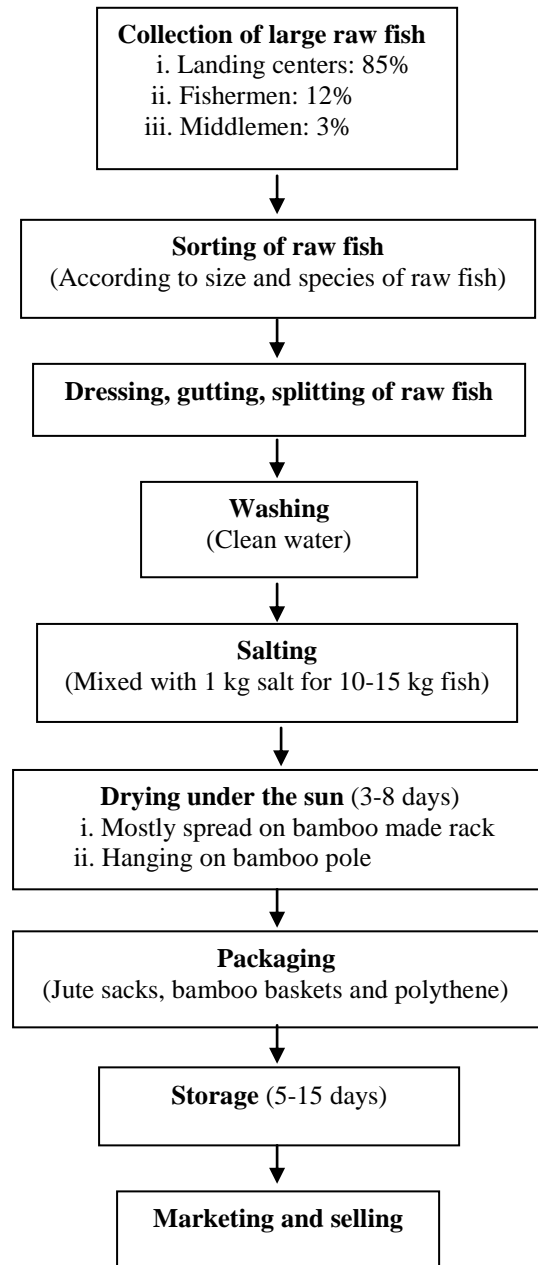


Fig. 4. Flow chart for drying activities of large fishes in the study area

Marketing channel of the study area

Most of the dry fish farmers marketed the stored dry fishes normally at every 5-20 days interval. The marketing system comprises a set of intermediaries. It was observed that almost all the dried fish product (98-99%) carried to the wholesale market of Saidpur in Nilphamary, Rangpur and some parts of Dhaka from the surveyed areas. Only (1-2%) dried fishes were consumed locally. However, total five (5) types of dried fish marketing channels were observed during the investigation periods which were consisted dried fish farmers, several middleman (local vendor, bepari, aratdar, distributor and retailer) and consumer (Fig. 5). More or less similar findings were also found by Flowra *et al.* (2010) and Marine *et al.* (2014).

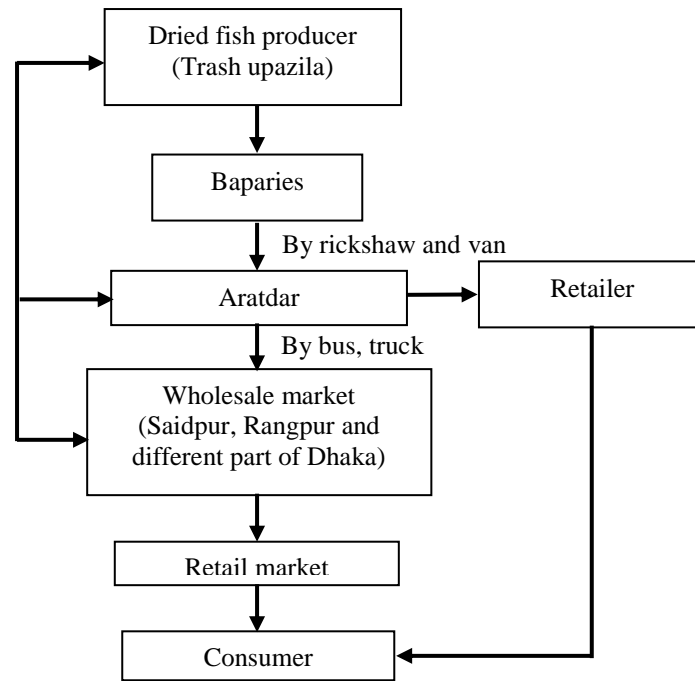


Fig. 5. Marketing channel of dried fish in the study area

Price of the dried fish

Price of the dried fishes in the surveyed area was found to be varied according to the species, size, quality of the final products and season. The price of the dried fishes was ranged from BDT 90-650 per kg. The highest price of the dried fishes was found BDT 550-650 per kg for Batasi (*Pseudeutropius antherinoides*) and, Boal (*Wallago attu*) and the lowest was BDT 90-250 per kg for Punti in the study area (Table 2). Monir *et al.* (2013) revealed that the highest wholesale (BDT 560 per kg) and retail price (BDT 600 per kg) were recorded for *Wallago attu* at November, and the lowest wholesale (BDT 95 per kg) and retail prices (BDT 100 per kg) were found for *Puntius* sp. at December. This variation might be due to the involvement of the wholesalers and retailers in dried fish marketing.

Table 2. Price of the dried freshwater species in the study area

Sl. No.	Bangla Name	Scientific Name	Price (BDT per kg)
01	Punti	<i>Puntius sophore</i>	90-250
02	Punti	<i>Puntius conchoniis</i>	100-250
03	Tit-punti	<i>Puntius ticto</i>	100-250
04	Nama chanda	<i>Chanda nama.</i>	200-250
05	Chanda	<i>Parambassis lala</i>	200-250
06	Colisa	<i>Colisa fasciata.</i>	210-260
07	Mola	<i>Amblypharyngodon mola</i>	250-320
08	Silver carp	<i>Hypophthalmichthys molitrix</i>	250-350
09	Bou, Rani	<i>Botia dario</i>	260-310
10	Chapila, Khoira	<i>Gudusia chapra</i>	350-410
11	Taki, lata	<i>Channa punctatus</i>	200-250
12	Gutum, Gorkun	<i>Lepidocephalus guntea</i>	210-300
13	Kakila	<i>Xenentodon cancila</i>	300-350
14	Tengra	<i>Mystus vittatus</i>	220-300
15	Sing, Jiol	<i>Heteropneustes fossilis</i>	500-560
16	Guchi	<i>Mastacembelus pancalus</i>	500-550
17	Tara baim	<i>Macrornathus aculeatus</i>	400-450
18	Bele, Baila	<i>Glossogobius giuris</i>	200-280
19	Boal	<i>Wallago attu</i>	550-650
20	Batashi	<i>Pseudeutropius antherinoides</i>	550-650
21	Icha, Chingri	<i>Macrobrachium sp.</i>	150-200

CONCLUSION

Dried fish plays an important role in our national economy through increasing protein sources, earning foreign currency and providing employment opportunities but different constraints were reported by the dried fish processors which were lack of access to credit facilities, lack of dried fish processing infrastructure, transportation and storage facilities in the study area. In most cases, storage of dried fish in unhygienic condition was observed which usually took place in the tent having no platform. Furthermore, it was also found that raw and dried products were kept in the same tent which badly affects the quality of dried final product. In this situation, therefore, it is necessary to practice scientific drying methods in all the drying process and, more research and extension opportunities along with the knowledge of dried fish processing and marketing.

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