

40

AWARENESS ON THE USE OF SOLAR TENT DRYER AMONG THE FISH PROCESSORS OF KUKAWA LOCAL GOVERNMENT, BORNO STATE

Usman, H.M, Abdulazeez, K.A. Obeta, N.C Bitrus, G,* Ali I.M ** Shobowale, J.O and Suleiman, G. Y.***
*Federal College of Freshwater Fisheries Technology Baga, Borno State*National Institute for Freshwater Fisheries Research, New Bussa, Niger State*

National Biotechnology Development Agency AbujaGeneral Hospital Ngoshe, Gwoza, Borno State.*

Email: bizzyhun2000@yahoo.com

ABSTRACT

This study was carried out in order to assess the use of solar tent dryer in some selected fishing settlement (Yobe, Daban Masara, Tumbun Beriberi and fish Dam) in Kukawa Local Government. Secondary and primary data were used in this research. Secondary data were obtained from various literatures while primary data were obtained through the use of structure questionnaires. A total number of 60 respondents were randomly selected and interviewed: Fifteen from each settlement (fish processors), simple percentages were used in analyzing the data. Findings revealed that, majority of the respondents (fish processors) 80% were not aware of the existence of solar tent dryer that can be used for drying fish, only 20% were aware of solar tent drier. And among these respondents that were aware of solar tent dryer only 3.33% have used it. The general perceptions of the respondents believe that they will use it if they are provided with the solar tent dryer. The level of awareness on the use of solar tent dryer for fish processing is very low, there is need for intensive awareness, through fishery extension workers.

Keywords: Awareness, Solar tent drier, Fish processors, Sun drying.

INTRODUCTION

Fish is one of the most common, available and cheapest animal protein that can be accessed in Nigeria, these can be either freshwater or saltwater fish. These fish can be in form of fresh (the ones that were immediately caught or the ones that are frozen) or processed (sundried, smoked, fried among others). Sun drying of fish is the exposure of freshly caught fish to the heat of the sun light, these dehydrates the water in the fish to avoid spoilage. Ogunlaye (2008) stated that " the basic essence of drying fish is to reduce the moisture content of the product to a level that prevent deterioration within a certain period of time normally regarded as the safe period. It is believed to be the oldest method of fish processing and preservation, it is practice virtually in all tropical developing countries due to inadequate electricity to preserve the fish (through freezing). Traditionally, there are various ways of sun drying fish; it can be spread on bare ground, mats or grasses. These exposes the fish to environmental contamination e.g run off water, dust, insect, often a times bird droppings etc. These practices directly affect the quality of the final product especially when it is to be used for human consumption (Masette 2000). Doe et al (1990) explained that various methods and equipments are used in sun drying of fish, these varies from simple spreading of the fish on grasses to the use of simple solar tent dryer, and to the use of sophisticated dryers. A solar tent dryer can be easily constructed, frames are initially constructed with either wood or bamboo sticks, this technology was developed by Doe in 1977 in Bangladesh. The frame is then covered by transparent polythene which produces an enclosure. Black Zink or iron sheet, stone or block are laid at the base of the tent, the black material serve as heat absorber. Fish are laid on rack inside the solar tent dryer. Cool air enter the dryer through bottom opening, while the top opening allow the heated air to flow out after it had circulated around the fish (Doe et al 1977). It works through the evaporation drying using green house principle (Oloko and Omojowo 2009). Processing of fish is a common practice in most fishing communities around water bodies. It is mostly done as a fall back to preserve fish for both future consumption and ensuring that fish was kept in marketable conditions (Ogunja et al 1992). In the cause of sun drying fish, the fish is spread and exposed to the environment which contaminates the fish. In spite innovations like the use of solar tent dryer to improve the quality and hygiene of sun dried fish, fish processors still expose their fish to the open environment in kukawa local government. This paper assessed the awareness on the use of solar tent dryer in Kukawa local government area. The objectives of the study are to identify the methods of sun drying of fish and to ascertain the level of awareness on the use of solar tent dryer.

Study Area

Kukawa Local Government lies between latitude $12^{\circ}35' N$ and $13^{\circ} 30' N$ and longitude $13^{\circ} 40'$ and $14^{\circ} 10'$ it is found in Borno State, it shares boundary with Lake Chad. Fishing is among the major occupation of the area others include farming, cattle rearing, trading etc. The tribes that are found in the area are Kanuri, Buduma, and Hausa among others.

MATERIALS AND METHODS

Four fishing settlement, namely Daban Masasra, Dumba, Yobe and Fish Dam were purposively selected in the study area based on accessibility and their intensity in fish processing activities. Secondary and primary data were used in this research. Secondary data were obtained from various literatures. For the purpose of this study 60 fish processors were randomly selected from the four fishing settlement, 15 from each settlement, structured

questionnaire was administered to the respondents, which forms the primary data. Descriptive statistics such as percentages were used to analyze the data.

RESULTS AND DISCUSSION

METHOD OF SUN DRYING IN THE STUDY AREA: Findings show that majority of the respondents 38.33% as shown in table 1 practice fish smoking solely, 35% are into both smoking and sun drying of fish, while 26.66% are solely into sun drying. Among the fish processors that practice sun drying of fish, they use different methods in sun drying fish, 15% of the respondents as shown on table 2 spread their fish on mat when sun drying, 18.33% use tarpaulin and 11.66% spread their fish on grass, 13.33% use the rack of their smoking kiln in drying fish, while 3.33% use solar tent dryer to dry their fish. This indicates that fish that is meant for sun drying is highly exposed to dust, dirt, and droppings of birds among others.

Table 1 Methods of fish processing practiced in the area

Method of fish processing	Frequency	Percentage
Solely fish smoking	23	38.33
Solely sun drying	16	26.67
Both smoking and sun drying	21	35
Total	60	100

Source: Field Survey 2012

Table 2 the method of sun drying

Method of sun drying	Frequency	Percentage
Spread on mat	9	15
Spread on tarpaulin	11	18.33
Spread on grasses	7	11.67
Spread on smoking kiln rack	8	13.34
Solar tent dryer	2	3.33
Not into sun drying	23	38.33
Total	100	100

Source: Field survey 2012

LEVEL OF AWARENESS ON SOLAR TENT DRYER

The level of awareness on the use of solar tent dryer for drying of fish is very low, only 20% of the respondents were aware that there is technology called solar tent dryer that is meant for sun drying fish. While 80% as shown in Table 3 were not aware of its existence. This is a clear indication of ignorance of new technologies and innovations these people don't know the implications of exposing fish in an open environment.

Table 3 the level of awareness on the use of solar tent dryer

Level of awareness	Frequency	Percentage
Aware	12	20
Not aware	48	80
Total	60	100

Source: Field survey 2012

MEDIUM THROUGH WHICH INFORMATION ON SOLAR TENT DRYER WAS ACQUIRED.

Among the few respondents that were aware of the use of solar tent dryer, 13.33% acquired their information through extension workers that visited them some years back as shown in table 4, and 5% came to know about it through their colleagues, while 1.66% saw it in pictures. These show that the extension workers are inadequate or they are not doing their job in the area.

Table 4 Medium through which information was acquired

Information acquired	Frequency	Percentage (%)
Extension workers	8	13.33
Through colleagues	3	5
Saw it in picture	1	1.67
Not aware	48	80
Total	60	100

Source: Field survey 2012

USE OF SOLAR TENT DRYER BY THE FISH PROCESSORS

From the findings it has been observed that among the respondents that were aware of the use of solar tent dryer, 3.33% as shown in table 5 had the opportunity of using solar tent dryer while 16.67% have not used it. And according to those that have used it, explained that it can only be used for personal use not commercial because of its size, and if they are to use it for commercial it will cost a lot of money.

Table 5 the use of solar tent dryer by the fish processors

Use of the solar tent drier	Frequency	Percentage (%)
We have used it	2	3.33
We have not used it	10	16.67
Not aware of it	48	80
Total	60	100

Source: Field survey 2012

PERCEPTION ON THE USE OF SOLAR TENT DRYER BY THE RESPONDENTS

Despite the fact that few of the respondents that had use solar tent drier, all of the respondents perceive that solar tent drier will be a welcome technology and a good method of sun drying fish and are ready to use it whenever it is made available to them.

CONCLUSION

Study reveals that the level of awareness on the use of solar tent drier by the respondents in Kukawa Local Government is very low, few are aware about it and only a small number of them that have use it. But interestingly majority of the respondents were having interest on the solar tent dryer. There is need to create awareness on its importance and use of the solar tent dryer.

Based on the findings of this research, there is need for intensive dissemination of information by extension workers especially on the use of solar tent dryer for fish drying. They should encourage and motivate the fish processors. And also there is need for improvement on the solar tent dryer. This can be done through further research, so that it will be more effective and efficient, because solar energy in the Study Area is in abundance and attention is only on fuel wood from trees as only source of energy, these results into high deforestation and the consequences will be environmental degradation.

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