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TRIGGER FISH (BALISTES SPP.) PROCESSING INDUSTRY AT ELMINA (A FISHING VILLAGE IN CENTRAL REGION OF GHANA)

by

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Abstract

Trigger fish falls within the Balistes group of fish whose name refers to the fact that the bones of the upper jaw are fused together. They are distinguished by the external feature of non-overlapping or open scales. The species landed in Elmina and other parts of Ghana has no scales and the body is covered with a very tough skin. It is of grey or dull grey colour interspersed with bluish spots at the back and has a characteristic smell.

At Elmina, trigger fish is always salted and sun dried to preserve it on commercial scale. Drying after salting makes it easy to peel off the tough skin and the impregnated salt also improves the taste.

Studies have been carried out on the traditional processing of trigger fish at Elmina. Proximate composition of samples from various processing centres is also provided. Recent studies indicate a growing trend in the trigger fish processing industry, both at Elmina and other fishing villages in Ghana.

INTRODUCTION

Various methods of salting fish, in particular, at village level have been reported. Van Veen (1953) reported on the salting of fish in Southeast Asia. Murray (1970) reported on how salting of cod by pickling and klondyking is carried out in Britain. Slaczka (1971) also describes various salting methods used in Poland. Very little information, however, is available in the literature on methods used

in salting fish in Ghana even though a lot of fish salting is carried out. This report, therefore, is aimed at putting on record the traditional processing of trigger fish at Elmina, in particular, and Ghana, in general.

MATERIALS AND METHODS

This report is based on analysis of answers given by the trigger fish processors and on observation of all the activities involved in salting.

RESULTS AND DISCUSSIONS

In Ghana, trigger fish (see Figure 1) is produced by canoe and inshore fishing. The use of trigger fish as a source of human food, and also personal source of income for fishermen and processors at Elmina and probably other parts of Ghana, has a recent history. Records from the Fisheries Division of the Ministry of Agriculture, Ghana, indicate that fishermen started landing appreciable quantities of fish only as recently as 1971. Prior to this period, no use was made of this species of fish. In fact those inadvertently caught were either thrown back to the sea or left to rot at the beach. The table below indicates trigger fish production in Ghana in 1978-82.

Table 1

Trigger fish production (in t)

	1978	1979	1980	1981	1982
Canoe	5 561.3	10 159.4	5 667.5	5 371.5	4 045.6
Inshore	2 777.7	2 577.1	2 154.6	112.2	2 365.7
Total	8 338.0	12 736.5	7 822.1	5 483.7	6 411.3

Source: Fisheries Research Unit, Tema, Ghana

The processing industry was started in 1971/72 by three women processors who claim to be the pioneers of the trigger fish business and others followed suit in 1972/73. A few women at that time accepted the trigger fish inadvertently caught for household consumption after it had been salted. Gradually the use of fish spread into many households and surpluses over household requirement were bartered for other foodstuffs, mainly cassava, plantain and vegetables. From the barter stage, the salted fish appeared on the open market and slowly gained consumer acceptance. Incidentally, production of other fish like Sardinella spp. and mackerel dropped drastically around this time. Today, trigger fish is ranked among other species of fish with great economic importance and potential in Ghana.

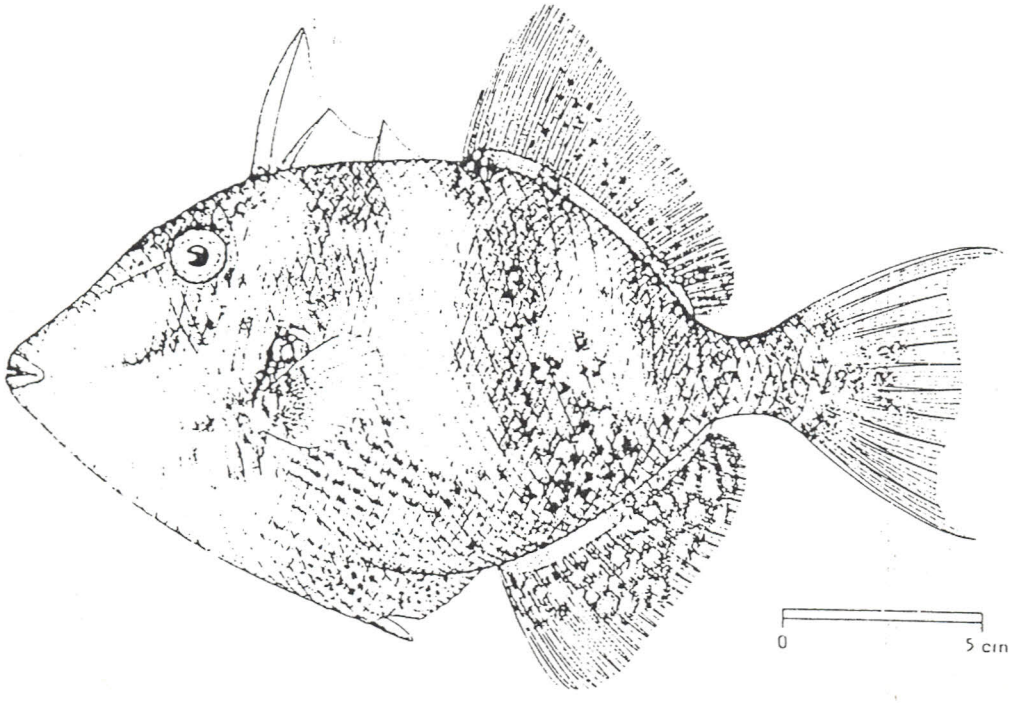

Figure 1 Trigger fish (Balistes capriscus)

TRADITIONAL METHOD OF SALTING TRIGGER FISH AT ELMINA

The processing of trigger fish is carried out by only women. Fresh fish is bought at the landing beach in basinfuls; a basin being the unit measure in the trade. A basin contains between 250 and 375 single fish, depending on the size of fish and size of landing that day, so that basins are more loaded than usual when heavy landings are made. The basinfuls of fish are transported to the processing sites where they are gutted by young boys for a fee. The salting sites are either located close to the houses or else at some distance from the houses close to the beach. An open space is used communally for drying by processors, but salting is done individually under sheds.

Crude solar salt, which is available in sufficient quantities and at sufficiently low cost enabling the fish processor to recover expenses involved is used in salting. Gutted and washed fish are salted by the dry-salting method by either rubbing in salt in a basin before it is packed tightly or the fish and salt are placed in alternate layers in a container. This is followed by pickling, but the fish is not packed in air-tight containers. The pickle or brine formed is used to salt two or more subsequent batches of fish with the addition of marginal quantities of salt until the scent of pickle becomes intorelable.

Originally, wooden, pigfeet barrels were used for salting fish, but due to the unavailability of barrels, containers like plastic bowls and barrels are also used. Some processors have constructed rectangular concrete troughs of the following average specifications for salting: length 220 cm; width 148 cm; height 70 cm; thickness 10 cm. The quantity of salt used varies within wide limits, but a very rough measure ratio is about 4:1, fish:salt. The fish is left to stand in salt overnight. The next day the fish is removed, washed and arranged orderly to dry in the sun on straws; polythene sheets and/or old fishing nets spread on the ground. The fish is turned during the drying process. On a nice sunny day, drying lasts one day. Where drying has to be continued more than one day, the fish is taken indoors overnight and spread out again the following morning. Below are values obtained for proximate composition of fresh and salted and dried trigger fish:

Table 2

	Moisture %	Protein %	Fat %	Ash %	Salt %	Iron % mg	Phosphorus % mg	Calcium % mg
Fresh trigger fish	79.1	19.4	0.3	1.4	-	-	-	-
Salted and dried trigger fish	40.5	37.8	1.6	18.2	16.8	3.0	581.0	348.0

Salted and dried trigger fish is hard, salty and slightly fermented. The tough almost leathery coat/skin of the fish also makes it extremely resistant to pressure.

STORAGE

The salted and dried fish are packed tightly for storage in round traditional mud ovens at the processing sites and covered with polythene sheets. For transportation to markets, fish are repacked into specially sewn, large jute bags. A well-processed fish will keep for months because of the salt level, tough skin and the fact that trigger fish is non-fatty and rather bony.

MARKETING

Elmina acts as a wholesale market for processed trigger fish and it is from this source that the bulk of it is supplied to many urban markets in Ghana. During packaging for sale, fish are sorted into grades according to size and quality. Wholesale fish is sold in batches of 100 single pieces. The fish are then retailed in the open market singularly, especially in hinterland areas, north of the country.

USE OF TRIGGER FISH

In Ghana, after many years, most people have acquired the taste for salted fish in general. Therefore, the use of salted, dried trigger fish in the diet did not impose any problem. It is usually used in the preparation of stews and soups. Before it is used for cooking, the tough skin is peeled by hand and the fish then soaked in water for some time. The fish is highly scented and is said to impart a nice flavour to stews and soups, even though it is used primarily as a protein source and not as a condiment.

CONCLUSION

An insight into the traditional processing industry of trigger fish at Elmina has been provided. Trigger fish is landed in other parts along the West African coast, but the industry is not yet on an advanced scale, as is practised in Ghana. It is hoped that the above provided information will help stimulate interest in its use in other parts of the world.

ACKNOWLEDGEMENT

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