Canning of Smoked Dhoma (*Sciaenid* sp.)

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A process for the preparation of a wholesome smoked and canned product from dhoma (*Sciaenid* sp.) is discussed. The dressed dhoma is cold blanched in 15% brine containing 0.5% potash alum and 0.2% citric acid and smoked for 120 minutes at 45±5°C. The smoked fish after filling in cans is precooked at 0.35 kg/sq.cm steam pressure for 50 minutes in inverted position, filled with hot refined groundnut oil, sealed and processed for 60 minutes at 0.7 kg/sq. cm steam pressure.

Dhoma (*Sciaenid* sp.) is a major trawl catch in our country with an average annual landing of 76,684 tonnes in 1971-76. Even though it is a major fishery, it is mainly used for drying as split open, a product locally known as 'phalsa' and for reduction to fish meal. It is not being utilized in any other form at present. Solanki *et al.* (1977) described a method to prepare an edible fish powder from dhoma. The present paper outlines a procedure for turning out a wholesome smoked and canned product from this fish.

Materials and Methods

Fresh dhoma caught by the trawler operated by this research centre was immediately put under crushed ice and brought to the laboratory, dressed and cleaned. The dressed fishes were divided into four batches and cold blanched in 15% brine and 15% brine containing 0.5% potash alum and 0.2% citric acid, for 15 minutes and 30 minutes. The fishes were then drained, suspended in a smoke kiln described by Solanki *et al.* (1970) in tail up position and exposed to smoke from saw dust for a period of 60 to 180 minutes at 45±5°C. The smoked fishes were then packed in S. R. lacquered cans (301 x 206 size) and pre-cooked at 0.35 kg/sq. cm steam pressure keeping the cans in inverted position for periods varying from 20 to 65 minutes. The cans were filled with hot refined groundnut oil, exhausted, sealed, sterilized at 0.7 kg/sq. cm steam pressure for periods varying from 30 to 60 minutes and cooled immediately in potable water. After surface drying the cans were kept at room temperature and analysed for physical and organoleptic characteristics.

Results and Discussion

Table 1 gives the effect of processing parameters on the quality of the canned product. Blanching in 15% brine for 30 minutes gives a fairly good product except for its soft texture. But incorporation of 0.5% potash alum and 0.2% citric acid in the blanching brine improved the texture considerably. Similar observations have also been made by Nair *et al.* (1974) in the case of sardines. The processing time was chosen in such a way that the bones became soft and easily chewable, but at the same time the muscle was not over cooked. It was found that a minimum of 60 minutes of processing at 0.7 kg/sq. cm steam pressure was required to achieve these quality criteria. It was also observed that a pre-cooking time of 50 minutes at 0.35 kg/sq. cm steam pressure was required to bring down the water content in the filling medium to a desired level of less than 5%, above which the canned product had an unappealing appearance, with development of rancidity in the filling oil as reported earlier by Varma *et al.* (1970).

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Table 1. *Effect of processing parameters on the quality of canned product*

Blanching medium	Time of blanching min	Processing time min	Nature of meat	Nature of bones
15% brine	15	30	Soft	Hard
15% brine	15	45	Soft	Slightly hard
15% brine	15	60	Soft	Soft
15% brine	30	30	Slightly soft	Hard
15% brine	30	45	Slightly soft	Slightly hard
15% brine	30	60	Slightly soft	Soft
15% brine+0.5% alum+ 0.2% citric acid	15	30	Slightly soft	Hard
15% brine+0.5% alum+ 0.2% citric acid	15	45	Slightly soft	Slightly hard
15% brine+0.5% alum+ 0.2% citric acid	15	60	Slightly soft	Soft
15% brine+0.5% alum+ 0.2% citric acid	30	30	Good, firm	Hard
15% brine+0.5% alum+ 0.2% citric acid	30	45	Good, firm	Slightly hard
15% brine+0.5% alum+ 0.2% citric acid	30	60	Good, firm	Soft

Table 2. *Effect of smoking time on the quality of canned product*

Smoking time min	Colour	Flavour
0	Fair	Not smoky
60	Very slight brownish	Light smoky
120	Brownish yellow	Good smoky
180	Dark brownish	Strong smoky

Table 2 describes the effect of smoking time on the quality of the canned product. Smoking for 60 to 180 minutes was tried to arrive at the optimum flavour. Smoking for 60 minutes was insufficient to impart a satisfactory flavour to the product while 120 minutes smoking gave a product with good smoky flavour and the colour became appealing. But a longer smoking time imparted a deep brownish colour and intense smoky flavour to the final product.

The authors are thankful to Shri G. K. Kuriyan, Director, Central Institute of Fisheries Technology, Cochin-682 029 for kind permission to publish this paper.

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