CANNING OF OIL SARDINE IN OIL / BRINE

Aim: To study the canning of oil sardine in oil or brine.

Introduction: In India the sardines occupy a very important position in the marine fisheries. **Clupeoids,** in general, constitute about a third of the marine fish caught in India, and within this group, the oil sardine ranks first.

Indian oil sardine (*Sardinella longiceps*) is one of the most important pelagic fisheries of India, in addition to Indian mackerel. It is known to occur all along the Indian coast in varying quantities. The highest abundance has been noticed off Kerala & Karnataka coast especially between Allepy to Karwar. The sardine fishery is usually exploited using shore seine (Rampani), boat seine and purse seines from August to March; September to December being peak period of occurrence. In 2000, Indian oil sardine contributed to 10% total marine landings of India. The commercial finishing has a size range of 10-20 cms weighs 20-40 grams and has a life span of 6-14 years. The spawning season in East Coast ranges from October to April. Fish measuring less than 10 cms and weighing 20 grams are not suitable for canning due to less yields, less fat content and more precook loss.

In earlier days more than 70% of the catch was used either for reduction purpose or drying purpose with or without salt. In recent years its consumption in fresh conditions has greatly increased due to better transportation and preservation facilities. It is known that, only very little amount is used for preparation of canned products, using brine/oil/curry/tomato sauce as the packing media for supply to the military personnel and the people of North Eastern states of India.

Product code : SA3* : Sardine in oil
SAL : Sardine in Brine

Can used : a) 8-Oz. can, S.R. lacquered
b) 1 lb. Jam can, S.R. lacquered

Std. net weight : a) 210 grams for 8-Oz. can
b) 340 grams for 1 lb. Jam can

Std. solid weight: Minimum 70% of net weight

* (codes 0,1,2 or 3 are given to different oils used in cotton seed, soya bean, groundnut, olive oil etc.

Materials & equipments: Fish, common salt, table salt, tables, cutting boards, knives, trays, tubs, cans, can closing machine, retort, refined ground nut oil, etc.

Procedure:

Raw material : Fresh whole sardines (or good quality frozen fish)

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Thawing : If frozen

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Washing :

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Weighing :

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Descaling : Removal of scales.

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Knobbing : Removal of head and gut by partially cutting the head on dorsal side and pulling the entrails without slitting open the belly.

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Size cutting : The knobbed fish is cut to required length, discarding tail ends (5.6 cms for 8-Oz. can & 8.5 cms. for 1 lb. Jam can)

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Washing :

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Weighing :

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Brining : Immerse in saturated salt solution for 8-10 minutes depending on size of pieces; to remove blood stains, improve texture and appearance

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Quick washing : Give a quick dip in fresh water to remove excess salt from the surface of fish.

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Packing : Pack 210 grams in 8-Oz. cans and 340 grams in 1 lb. Jam cans.

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Precooking : Cook the products in steam at 100^0C (0 psi) for 20 minutes (8-Oz.. can and 30 minutes (1 lb. Jam can).

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Filling : Add hot (80^0C) oil or brine (3%) to net weight, + 2 to 3 grams extra.

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Can seaming : Use vacuum seamer or after proper heat exhausting for 10-12 minutes at 100^0C

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Retorting : At 115^0C (10 psi) for 70 min. for 8-Oz. can & 80 min. for 1.lb jam can) 5' more for both oil and brine packs.

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Cooling :

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Drying :

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Labeling :

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Storage :

Observations:

Weight of raw material :

Weight of dressed (Knobbed) fish :

Weight of fish packed :

Weight of empty can :

Weight of can + contents before precooking :

Weight of contents :

Weight of can + contents after precooking :

Weight of filling medium used :

Weight of salt used for brine preparation :

Number of cans packed :

Number of persons involved & hours worked :

Size of can used :

Calculations:

Calculate the dressing yield; precook loss, canning yield, yield rate and efficiency.

$$\text{Precook loss (\%)} = \frac{(\text{Wt.of can + contents before precook}) - (\text{Wt.of can + contents after precook}) \times 100}{\text{Wt. of can + contents before precook}) - (\text{Wt. of cans})}$$

$$\text{i.e.} = \frac{\text{Wt. of fish before precook} - \text{Wt. of fish after precook} \times 100}{\text{Wt. of fish before precook}}$$