Chapter 10

CONCLUSION AND RECOMMENDATIONS
10.1. Conclusion

The following are important suggestions and recommendations based on the study. The study reveals that quantity of dry fish production in the State is decreasing and dry fish processing industry should be encouraged by Central and State Governments. MPEDA may help the industry technically and financially in production and export. The quality control during processing and production are essential and be aided by both Central and State departments during production and sales. Grant-in-aid may be provided by Govt. or bank during peak season to purchase fish and remit the same in equal period with low interest. The State Fisheries Department or MATSYAFED may purchase cured and dried fish with a quality control check and sell at high range area at reasonable rate. This way both Government and people in high ranges are benefited. The Government or State Fisheries Department may arrange centralised low temperature godowns for storage of cured fish to increase shelf life.

The dry and wet salting may be carried out to a period of 4 to 8 hours respectively and time may depend on temperature, size, concentration of medium, etc. Further increase in salting time leads to weight and nutritional loss in dry and wet salting. But demand is an unavoidable factor for sale of fish. The use of preservative in dry salting had better effect than wet salting. The weight loss was more in wet salting. pH was lowered more by natural than chemical preservative. Though sun drying had more effect on both lots, the effect in dry salting was high than wet salting. The decrease in moisture content increase nutrition and it was more in dry salted fishes and shark. Moisture, salt, firmness, a\textsubscript{w} and other factors of unpacked fishes were reduced during storage due to high relative humidity and temperature. The packed dry salted lots kept at room temperature are useful only for 20 days. The refrigerator-stored lots had more storage life and nutritional content are good up to 3 months. The cold storage stored dry...
salted lot had more storage life than the wet salted lot. Wet salted or dry salted fish can be better stored in refrigerator or in cold storage until the fish is sold out.

The above study encourages to lower the salting time to 8 and 4 hours in dry and wet salting respectively with good amount of nutritive value. The use of preservatives in salting is encouraged to reduce pH. The low temperature preservation maintains the nutritional value and quality for long period. It further encourages the labeling of nutritional value of dry fish as in tinned products.

10.2. Recommendations

The moisture loss during the initial period of dry salting is less and it increased as salting time increased. It had reverse action during long salting in controls. So dry salting may be done for 4 hours and wet salting for 2 to 3 hours depending on the thickness of fish. The fish may be scored.

The loss of nutrients in dry salted product is less than the wet salted product due to osmosis. The chemical and natural preservative penetrates and reduces the pH to acidity. The chemical preservative has better performance than the natural preservative. The natural preservative has less effect on wet salting, which causes loss in nutritional value in brine solution as the nutritive components dissolve. So dry salting is preferred or wet salting can be done for limited hours.

The wet salted lot showed heavy weight loss during sun drying than dry salted lots and the yield is little high in dry salted lot. So wet salting should be limited for 4 to 5 hours.

The products may be packed and sealed after drying in polythene bags for long storage, better appearance and protection.

The dry salted mackerel with 2%, ribbonfish with 1% and shark with 2% calcium propionate and the wet salted mackerel with 5%, ribbonfish 10% and shark 5% tamarind juice preservative had good appearance than the others.
Most of the protein nutrients, FFA value and fat oxidation are in decreasing manner in all wet salted lot as they dissolve in salt solution rapidly. In the case of dry salted lots the nutrient loss as less as the salt penetration is slow in the flesh. So dry salting may be preferred or wet salting for 4 to 5 hours may be done.

The study showed that no colour change occurred on the fish during wet salting when Gorukha puli was used during salting. The preservative (*Tamarindus indica*) has high effect to reduce pH.

The fish stored in open air showed loss of moisture and loss is high in wet salted lot than dry salted lot. Packed stored lot had moisture in it and it easily spoils the products (20 days). So the products should be packed and stored at low temperature.

The sealed lot stored in refrigerator and cold storage have high content of nutrients and the lipids oxidation is less than the other two types of storages. So storage of the products at low temperature should be encouraged and practiced.

Drying may be done in protected area without entrance to animals and birds. The products may be packed in attractive packets for easy handling and storage without causing damage.

The society or Govt. may sell the product on “first come first out” basis to avoid long storage and for easy movement. Quality of the fish may be checked at every stage.

The “lab to land” program is urgent to improve the quality of cured fish production for internal and export marketing with long storage period.

The HACCP system may be introduced in the curing units for safe fish production.

Salting may be carried out with good quality fish immediately after landing and hygienic production of cured or dried fish may be controlled by Govt. body and the Govt. may take measures to improve the facilities and provide grant in aid through recognized societies or qualified hands.
15. The workers may be trained for the hygienic handling of fishes. The Inspectors of the Fisheries Welfare Board or Fisheries Departments may be asked to verify the required facility and improve the same.

16. The Govt. may adopt the quality standards and purchase the cured fish from curing units at a standard rate on the basis of quality and may fix the standard price and sell the same in high range places to bring good revenue to Govt. and it is a boost to the people of high range region who really need fish.