SUMMARY

CHAPTER-1

This chapter includes studies on moisture absorption properties of Pampus chinensis fish muscles after storing at different temperatures viz. -10°C, 0°C and 30°C for 1, 3, 4, 6, 8 days and then keeping for six weeks at room temperature. From the results reported here, it is apparent that storage of fish catch at low temperatures ranging between 0°C to -10°C is not necessary as it does not improve the storage life, after sun drying, but on the contrary it leads to greater moisture absorption in case of sun dried fillets in the initial week of storage.

CHAPTER-2

A study was made on physical and chemical qualities of hilsa fish stored at low temperature. Fish samples were stored at 0°C for 1 to 27 days. Total volatile nitrogen.Trimethyle amine, moisture contents, pH, free fatty acids were estimated after storage for 1, 8, 12, 16, 21 and 27 days. The 9-point hedonic rating scale for overall acceptability was followed. Sensory evaluation of organoleptic qualities was also carried out in the case of different organs

of this fish during storage. Correlation coefficient and regression analysis was carried out. It has been represented in figures and tables. A relative rate spoilage chart could be prepared. It was found that after 21 days of storage fish becomes unacceptable. Sensory method alone is not a reliable index for quality judgement and to determine shelf life of hilsa fish.

CHAPTER-3

Velocity of salt penetration during salting preservation in relation to biochemical quality changes have been studied. Various methods of salting were followed e.g. dipping in 5% or saturated salt solution before salting was followed. Also proportion of salt was varied. Some samples were not salted for comparison. pH values, peroxide values, acid values and free fatty acids were determined in various batches after different treatment.

Statistical analysis was carried out and has been showed in table. It was found that at similar storage temperature and salt concentration, salt penetration depends on thickness of fish. Salt uptake is faster at higher temperature. Rate of salt penetration is rapid initially and it is influenced by the content

of fish. Fat acts as barrier to the entry of salt. Increase in salt content depends on thickness, anatomical portions and temperature. pH value changes depend on thickness of muscle and length of storage. Peroxide values, acid and free fatty acids depend on temperature. Fluctuations are more at higher temperature.

CHAPTER-4

During preservation in salt, the extraction of water and production of total volatile nitrogen in Pampus argenteus has been studied. Fish slices were mixed with salt, using different fish:salt ratios. They were stored at room temperature for 1 to 27 days after which moisture content, salt content and TVN were estimated at intervals of 1, 3, 6, 9, 12, 15, 18, 21, 24 and 27 days. TVN results are compared by plotting regression lines.

On the basis of the results obtained we may conclude as follows: The effects of salting arrest the volatile nitrogen formation. Salting retards the spoilage and prolong the shelf-life resulting in better quality product. Heavily salted fish showed some discolouration and becomes hard. Less salted product were unacceptable after few days due to spoilage. If salting of the fish is carried out scientifically

under hygienic conditions, using fish salt ratio 1:3 or 1:6 the product turns out to be better in quality in all respect. On prolonged storage of dry salted fish, it shows weight loss which is unprofitable from the commercial standpoint.

CHAPTER-5

Present study incorporates observations on nutritive value and freshness of fishes stored at low temperature for two weeks. Fourteen different fish species were stored at 0°C for two weeks. Deterioration in the quality was assessed both chemically and organoleptically by sensory evaluation TVN values were determined in samples stored at 0°C for two weeks and from this values for 1°C to 8°C were calculated.

From the statistical analysis of data it can be concluded that the storage temperature has significant effect on chemical and physical quality changes of different fish species.

CHAPTER-6

This chapter includes studies on nutritional variations and biochemical changes during storage under various conditions.

Protein, lipid and moisture content has been estimated in different anatomical regions. Biochemical quality analysis of salt treated and untreated fatty fish has been carried out. Loss of protein solubility, total volatile nitrogen, trimethyle amine contents of fish samples at different temperatures for varied period has been estimated to find out rate of spoilage. Water content and rehydration percentage has been estimated. The quality of fish as indicated by the panel of graders is correlated with TMA values.

The results of experiments regarding the biochemical quality changes and distribution of nutritive substances of fish were subjected to statistical analysis and findings are represented in figures.