

# FROZEN FISH



- Frozen fish refers to fish that has been caught, processed, and then frozen to preserve its freshness.
- There are various types of frozen fish available, including whole fish, fillets, steaks, and seafood mixex. Common fish species that are frozen include cod, salman, tuna, haddock, hailbut, and many others. Thease frozen fish products are often sold in grocery stores, seafood markets, and restaurants.



# Preservation via freezing

- Nearly 70% of the fish body constitutes water and 30% consist of protein, fat, minerals, and vitamin and non-protein nitrogen extractives.
- At ambient temperature fish muscle undergo rapid biochemical changes and creates a favorable environment for microorganisms to grow.
- To consume the fish as similar to fresh, it has to be subjected to freezing process.
- Normal frozen fish will be stored in cold store where the temperature is maintained at  $-18^{\circ}\text{C}$ .
- The following criteria may be used to assess fish: unobtrusive odor, firm and resilient flesh, brilliant red color of gills, bright, glossy color, glossy black pupils.

## The duration of storage for various types of fish is as follows:

| Fish type            | Temperature   | Rel. humidity | Max. duration of storage |
|----------------------|---------------|---------------|--------------------------|
| Frozen oily fish     | -28 to - 18°C | 90 - 95%      | 8 months                 |
| Frozen lean fish     | -20°C         | 90 - 95%      | 12 months                |
| Frozen filleted fish | -28 to - 23°C | 90%           | 6 - 9 months             |



# Packaging

- Frozen fish products are packaged to minimize dehydration and oxidation.
- Fish processors depends on commercial packaging materials and wraps to serve as effective barriers to minimize dehydration and oxidation.
- The fish-processing industry also uses modified atmospheric packaging ( MAP) and vacuum packaging to extend shelf-life and maintain quality.

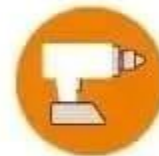


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