

13. Vacuum and Modified Atmosphere Packaging of Fresh Fish.

Preamble:

Upon harvesting, fresh fish degenerates unless kept in cold storage. Shelf life of perishables like fish is limited due to effect of atmospheric oxygen and the growth of aerobic microorganisms. Cold storage will slow down these undesirable changes but will not extend the shelf life sufficiently for retail distribution. Vacuum and Modified Atmosphere Packaging (MAP) is one such technique for preservation and enhancement of shelf life of food products. Vacuum packaging involves removal of air from the packages of food products and sealing the packages under hygienic conditions. This coupled with suitable cold storage helps in enhancing the shelf life of products.

The College of Fisheries, Ratnagiri, Maharashtra, has developed a technology for packaging of commercially important fresh fish like mackerel, pomfret and shrimps for the purpose of retail marketing. The project was sponsored by Rajiv Gandhi Science and Technology Commission, Govt. of Maharashtra, Mumbai.

Technology for Packaging of Fresh Fish:

The technology of fresh fish packaging for the purpose of retail marketing involves use of suitable flexible bags and thermoformed plastic trays of different sizes for keeping the fish. The laminated rectangular or square shaped pouches are made of 12 micron polyester laminated with 75 micron polyethylene for packaging of fish of approximately 250 to 300 gm. The fish may be processed in whole condition with the entrails removed. Big size fish may be cut into suitable size of steaks. The fish is washed in potable water and rinsed before packaging. Similarly, shrimps may be processed to remove head and exoskeleton so that only edible portions of body meat can be packaged in bags or trays. After putting the fish in bags, sealing is done at 90 – 95% of vacuum using a vacuum sealing machine. The packs of fish are then stored in cold storage till further distribution. Food grade CO₂, N₂ and O₂ gases are used for packaging of the fish in plastic trays. The gas composition was adjusted by using the gas mixer of the MAP machine. Shelf life of upto 30 days could be achieved for storage of Mackerel, Pomfret and Shrimps by using various combinations of packaging. The technique has a potential for wider use and higher income generation.



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