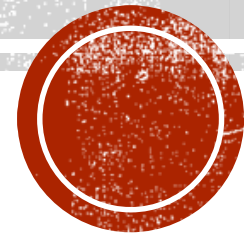


DRIED PRODUCT TECHNOLOGY



Dried Product Technology



Preservation depends on reducing the moisture content to a level where microorganisms and most intrinsic enzymes become inactive. Thus, the amount of drying has to be considerably greater than that required for salted products. Generally a moisture content of not greater than 15-20% is aimed at, this being the upper limit below which moulds will not grow.

The aim in production is to reduce the moisture content quickly enough to avoid concomitant spoilage. By employing artificial means (drying tunnels, suspending over fires) this objective can usually be realised, but much of the World production is made by drying naturally under the influence of sun, wind or frost.

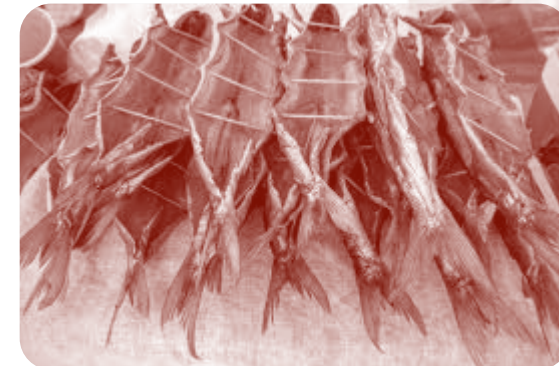


Drying tunnels of various designs are available with which it is easily possible to produce dried fish of consistent quality. The best method of retaining natural quality in dried fish is freeze drying but this is very expensive procedure has so far only been applied to sophisticated articles like shrimps and prawns.

Factors affecting drying

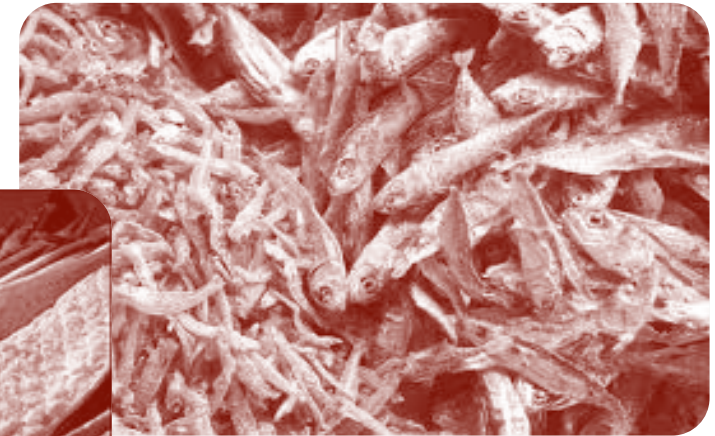
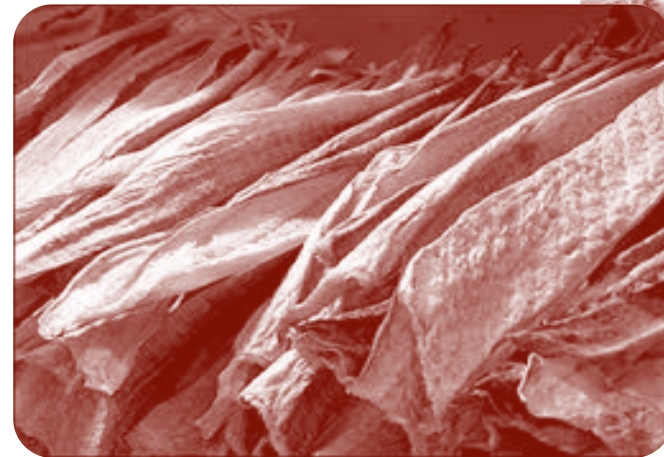
rate

- Temperature
- Humidity of air and the speed of the dryer
- Raw material composition
- The size of the product

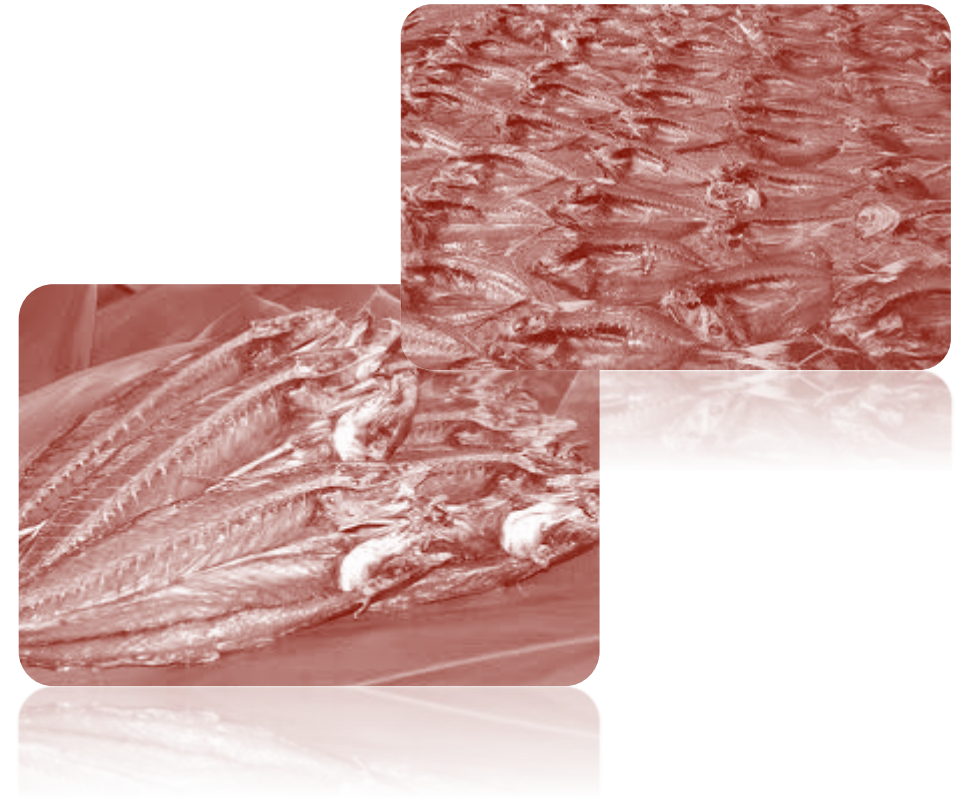


Drying is expedited by creating as large a surface area as possible-splitting large fish into thin sections, breaking or mincing, spreading, hanging or laying out thinly, turning over laid-out fish frequently. Under given conditions of temperature, humidity and air flow, moisture escapes from the surface of the fish at an approximately fixed and steady rate.

Making the surface area as great as possible therefore maximises evaporation and minimises drying time.



Unless the product demands otherwise, initial removal of some body juices by pressing out or by heating until the flesh proteins coagulate is particularly advantageous. The water in raw fish is held quite firmly and is accordingly removed very slowly.



Drying product quality

- Chemical quality
- Microbiological quality
- Sensorial quality



Coagulation releases the water as a separate juice which then evaporates more rapidly. Cooking before drying also has the advantages that it normally avoids the occurrence of case-hardening during rapid drying and arrests the actions of microorganisms and enzymes.

When drying naturally, protection against direct strong sunlight is often necessary in order to avoid partial cooking and break-up of the flesh or case-hardening, likewise cover from direct rainfall which would wet the fish is an obvious necessity.



Storaging and deterioration

- A major problem in the control of quality wastage of dried fish in developing countries is insect attack. Good packaging where it can be afforded is one answer. Dipping before drying of fish in a dilute solution of the odourless insecticide pyrethrum or light dusting of the finished product with the dried substance suitably diluted, both offer good protection against insect attack but should be resorted to only when other methods that avoid the use of insecticides have failed.

