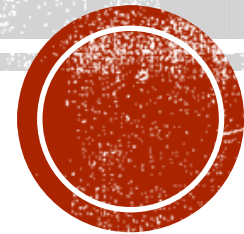


MARINADING (MARINADES) TECHNOLOGY



Marinading Technology

The products which is preserved by the combined action of dilute acetic acid (usually in the form of vinegar) and salt. The inhibitory effects of these two substances on bacteria and enzymes are greater at higher concentrations but since marinades are eaten without any further preparation, storage life is limited by the upper concentration particularly of acid, that is palatable.



Marinading is normally a two-stage process with the transfer of the fish in between. The aim, in the first stage is to render fish, normally filleted, rapidly as sterile as possible whilst at the same time developing the characteristic basic texture and flavour, for this purpose immersion for at least a week and frequently much longer in concentrated pickle solution is employed (5-10% acetic acid plus 10-15% salt). In the process the protein of the flesh is coagulated and the remaining small bones are softened. The aim in the second stage is to maintain a palatable level of preservative that will keep the product for a reasonable length of time. A final product in 1-2% acid plus 2-4% salt will keep in good condition for at least 3 months at near 0°C.



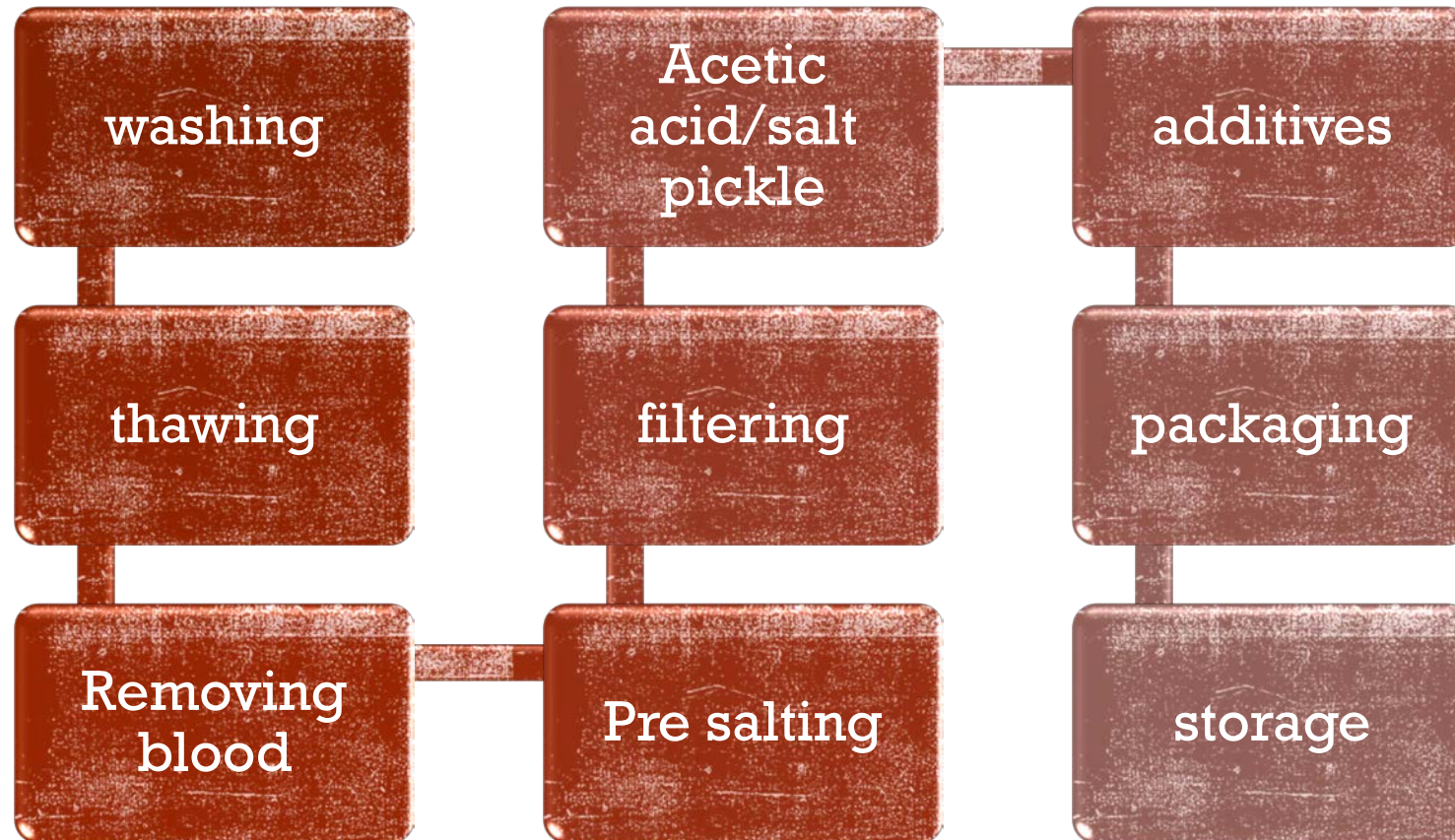
Factors affecting the marinade quality

- Freshness and composition of the raw material
- The lipid content of the product
- The composition of acetic acid and salt
- Ripening procedure
- The hygiene conditions in processing unit

The marinade yield is generally **50%** and the yield is much more higher in big fish instead of little ones.



Marinade flow chart

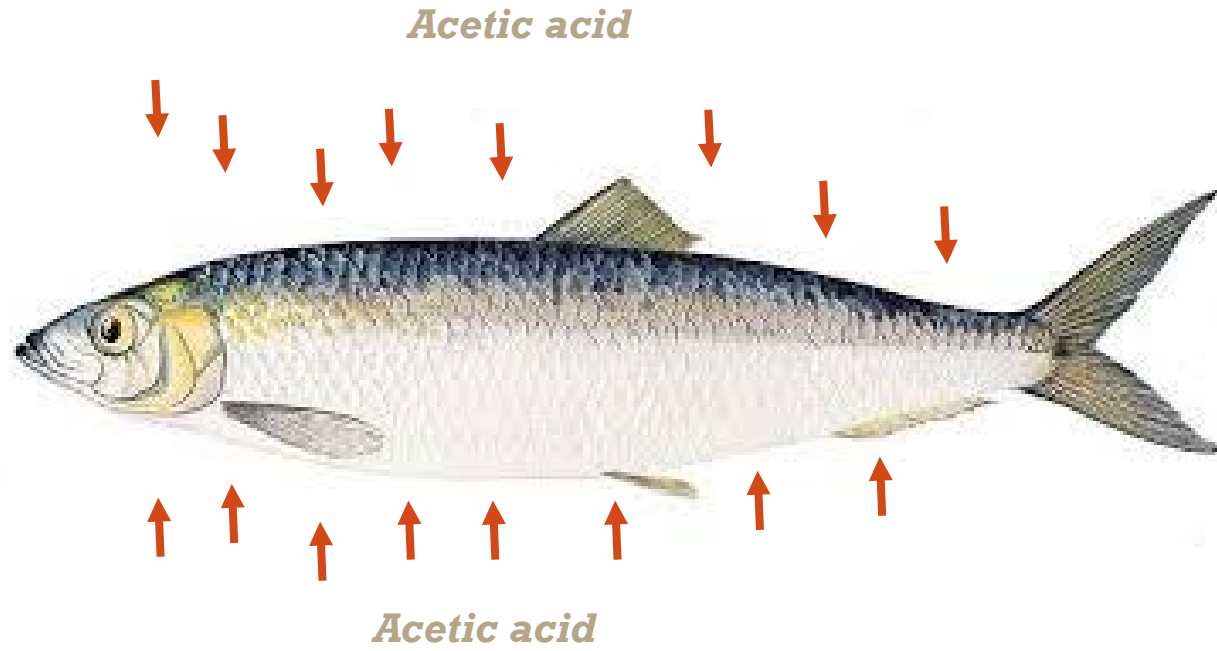


Marinade procedure and quality

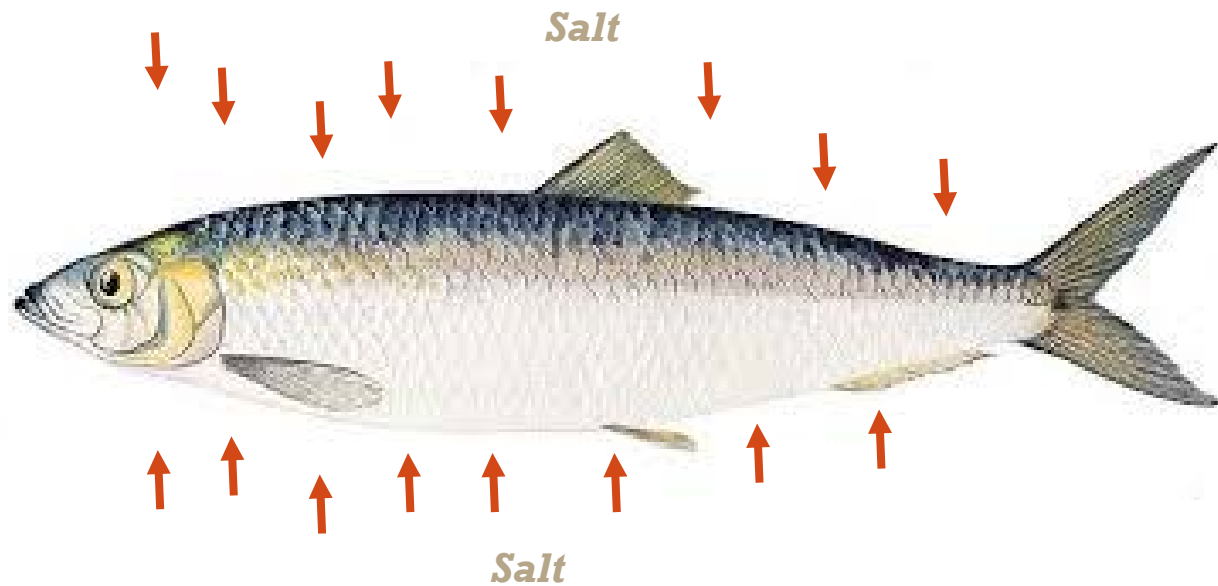
The eating quality of this product is very dependent upon freshness and lack of damage or contamination of the raw material. Frozen and thawed fish of good quality is quite acceptable. Fatty species make the best traditional marinades, a min fat content of about 10% is required.

To ensure uniform and rapid penetration the whole fish or fillets should be mixed thoroughly with the first pickle, introducing them individually and stirring or agitating the mass from time to time. The texture of final product is dependent on the concentrations of preservatives used, more acid softens, an effect that is moderated by increasing salt concentrations.





Diffusion
(Transfer of acetic acid to fish flesh)



Osmoz
(Transfer of salt to fish flesh)



Packaging and quality

The quality of ingredients like spices and vegetables added to the final pickle requires special attention. If gelatin is used in the final jellied packing medium, it must be of food grade. Marinades are often packed without heat treatment in transparent jars or in cans suitable for retail display, all containers of this kind should be washed if necessary and inspected before use for damage or faulty closures. Fish should be trimmed and packed neatly to show to best advantage their silvery skin or added garnishes.

