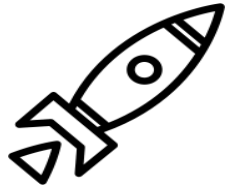
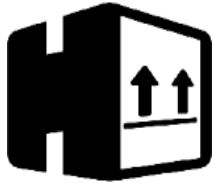
Treatments for Blanching of Fish






KERONE

Complete Engineering Solutions...

Introduction

- Fish is one of the most important sources of animal protein available in the tropics and has been widely accepted as a good source of protein and other elements for the maintenance of healthy body.
- Fish and fishery products are highly nutritious, in addition to the high percentages of animal protein, they provide several other nutrients such as vitamins A and B especially in the liver, and E and K vitamins, and they are good sources of some minerals like calcium, phosphorus and iron.
- The global contribution of fish as a source of protein is high, ranging from 10 per cent to 15 per cent of the human food across the world.
- Salting is a traditional method of fish processing in many countries of the world. It can be used in combination with drying or smoking. Salting the fish removes water and lowers the water activity (water available for the support of microbial growth which causes the spoilage).
- Concentration of (6-10 per cent) salt in the tissues will prevent the action of most spoilage bacteria . Salting is performed either by dry, brine, or injection salting or a combination of these methods.

What is Blanching...

- Blanching is a cooking process in which a food, usually a vegetable or fruit, is scalded in boiling water, removed after a brief, timed interval, and finally plunged into iced water or placed under cold running water to halt the cooking process.
- Dressed fish is generally blanched in cold or hot brine or pre-cooked in steam, the choice being dependent on the fish concerned. During the blanching in brine, hot or cold, the fish flesh takes up sufficient salt and its texture gets improved.
- During the heating, as in hot blanching or cooking in steam, the fish flesh releases nearly 15-30 per cent of the body water. Therefore, blanching/ pre-cooking are carried out to the extent such that no further water will be released from the fish flesh during heat processing.
- Blanching is a process used in the pre-treatment in the food industry. In both cases, its main purpose is to inactivate enzymes that cause browning as well as textural changes and off-flavors.

Types of Blanching Processes :

1) Cold Blanching:

- The dressed fish is subjected to this process before filling in to cans. The process is to keep the fish pieces immersed in a salt solution, the concentration and dipping time varies depending on the species and size of fish. There are two common methods of salting: dry salting, whereby salt is applied directly onto the fish surface; and, brining, whereby the fish are immersed in a salt/water solution. Both marine and inland fish are salted. Fish are salted whole (if they are small), split or cut into pieces prior to salting. This process removes blood, slime, dirt, etc. and gives firmness to the texture and imparts a salty taste to the product. It also reduces the bacterial population.
- The salting process and product characteristics are affected by the type of salt used and the duration of the process. Salted fish tend to be robust and can have a shelf life of 6 months, depending on species and salt/moisture content.

Salt uptake is affected by:

1) Fat content
2) Thickness of fish
3) Freshness
4) Temperature

- Form shiny, attractive gloss – permits further moisture loss and inward diffusion of volatile components (smoking).
- Brines also carry colors, smoke flavour or acetic acid – toughens skin/epidermis – prevents sticking to can sides on retorting.
- Inward migration of salt during brining depends on:

1) Thickness of pieces
2) Fat content
3) layers of fat –
4) barriers for salt entry –
5) Concentration of brine.

2) Hot Blanching:

For shell fish including shrimps and crabs, blanching process is done in boiling brine. During this process the shrimp meat gets their characteristic red colour, curls and shrinks in size permitting adequate filling in to cans.
Pre-cooking of fish is carried out in steam with or without pressure either before or after packing in to cans. The fish is cooked for such a length of time that no further water is exuded while the cans are subjected to heat processing. For sardine, the cooking time is found to depend on the fat content, lean fish taking larger cooking time. This process will expel the cellular gases and improve vacuum in the can, inactivate the enzymes and reduce the bacterial population. Shrimps are blanched in boiling brine solution. This gives them attractive red color. Sometimes, fish are precooked to remove water from them.

Functions of blanching:
1) Firm texture of fish
2) Reduction in bacterial load
3) Inhibition of enzymatic reaction
4) Shrinkage for better filling
5) Removal of cellular gases.

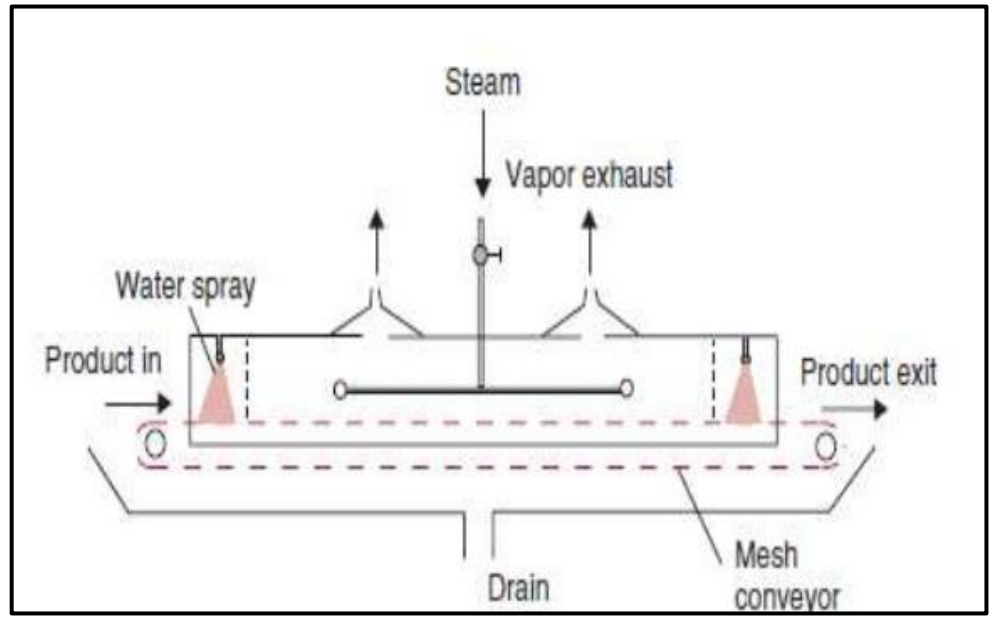
Methods of Hot Blanching…

- Steam Blanching :
  30-90 sec of exposure time require for steam blanching.

- Hot Water/Brin Blanching :
  Process requires dipping in hot water for 1-5 minutes.

Advantages:

- Reduce the energy consumption and reduce the loss of soluble components of foods.
- Reduce the volume and polluting potential of effluents.
- Steam blanching results higher nutritional retention than hot water.



Advantages of Blanching…

- Releases 15-30% of body water - Controls drained weight : Under-blanching – under-weight of product
- Water-oil emulsion/cloudiness, internal can corrosion during thermal processing – dissolved proteins
- Eliminates possibility of further release of water from fish into can during thermal processing.
- Minimizes ‘curd’ – proteinaceous exudate (unsightly curd) in surrounding liquor during processing.
- To partially dehydrate the flesh and prevent release of those fluids during retorting which would otherwise collect;. in the container.
- To develop desirable textural and flavour properties;
- To make the flesh of crustacean firm and aid their release from the shell

Trusted Partner of following consultants…

KERONE

AFCONS

BV consulting group

TEIL

LLOYD'S

TOYO ENGINEERING

TÜV

EIL

STERLING AND WILSON

TATA CONSULTING ENGINEERS LIMITED

Technip

Reliance Engineering
a division of Built-Rite Tool & Die, Inc.

SC Shroff Consultants

Our Clients...


ITC
Enduring Value
ESSAR STEEL
TATA MOTORS
SAINT-GOBAIN GLASS
ACE HEALTHY BITES
ALSTOM
Jasubhai
GM
LARSEN & TOUBRO
Dynetics
GAYLORD
LOGICON
WIPRO
Flamingo Pharmaceuticals Ltd.
Kento
Beyond The Boundaries of Taste
M.O.M
meal of the moment
HADEN
international group
FIAT
murugappa
Piramal Healthcare
Firmenich
Cipla
zippy
Healthy Way of Life
GE
LUPIN
Bharat Petroleum
Reliance
CAIRN
Energy for India
Camlin
Pidilite
Setton Farms
Setton Pistachio of Terra Bella, Inc
IndianOil
NIPPON PAINT
हवाबाण हरडे
ESSAR
IFF
torrent
SARDA
SAF
L&T Power
ADITYA BIRLA
HINDALCO
AMIL
IOT
ACG Worldwide
moserbaer Technologies
Hindustan Unilever Limited
Panda treats
PAPYROL
MIKI CHICKEN
HP
Vertellus
CUMI
heubach
MULTIMETALS
Nestlé
SIGNODE
Unitex
MTR
PURE AND PERFECT
SINCE 1924
Amil
Tradition above Generations

Serving Across Borders...

THANK YOU

Locate-Us

UNIT I

B/10,Marudhar Industrial Estate,
Goddev Fatak road, Bhayander(E),
Mumbai-401105

Phone : +91-22-28150612/13/14

UNIT II

Plot No. B-47, Addl.
MIDC Anandnagar, Ambernath (East),
Dist. Thane- 421506

Phone : +91-251-2620542/43/44/45/46

EMAIL

info@kerone.com | sales@kerone.com | unit2@kerone.com

WEBSITE

www.kerone.com | www.kerone.net | www.keroneindia.com