

FOOD TECHNOLOGY

UNIT V

MANUFACTURE OF FOOD PRODUCTS

FISH PRODUCTS

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FISH PRODUCTS:

Fish and fish products consumed as food all over the world with other Sea foods it provides the worlds prime source of high quality protein.

14%- 16% of the animal protein.

- ❖ Fish Barbicue
- ❖ Fish Flour
- ❖ Fish oil
- ❖ Surmi fish
- ❖ Shell fish products
- ❖ Fish glue

FISH BARBICUE:

Shrimp is washed in chilled water containing 5ppm chlorine, beheaded, deveined, peeled and again washed in chilled water.

Bamboo stick is then pierced into the meat from head portion to tail.

Its then packed in thermoformed trays under vacuum and frozen -4degree C.

Fish Barbecue



FISH FLOUR:

- ◉ Fish flour is a source of amino acids and vitamins with very high protein content, made of fresh or unprocessed fish wastes.
- ◉ forming used as fertilizer in great Britain & Japan , the fish flour also used in the first feeding of animals due to high nutritional values.
- ◉ Fish flour utilized in aquaculture and also in poultry and pig forming.
- ◉ Fish flour is obtained by drying and grinding all fish or fish waste in clean, preserved way with oil extracted or otherwise, solely or in combination.
- ◉ The water ratio in the fish flour must not exceed 10%and the salt ratio must not exceed 7%.



Fish Flour

USES:

- Its used as food additive during feeding of domestic animals , as well as in animals breeding, birds breeding, and fish farming,
- Its containing great amount of protein and Amino acids that allows to enrich foddors with protein.

SURMI FISH PRODUCTS:

- Surmi is a mechanically deboned washed (bleached) and stabilised fish flesh.
- Surmi is a Japanese term literally meaning "minced meat" derived from fish
- Surmi fish contains about 76%- water, 15% -protein, 6.85%- carbohydrates, 0.9%- fat.

Surmi products:

Fish balls

Crab sticks

Fish cake



Surimi fish

iCam

Crab sticks



USES:

- Surimi is an in expensive source of protein

SHELLFISH PRODUCT:

- ◉ Shellfish have been on the human menu for as long as (356 million years) and probably for our pre-human ancestors as well.
- ◉ Efforts to preserve them for long periods.

EXAMPLES:

Cuttle fish-Ink/Squid ink

Mussels- oriel

Crab paste/sauce

Shrimp sauce/ paste



Rich in lean protein ,
healthy fats and minerals.



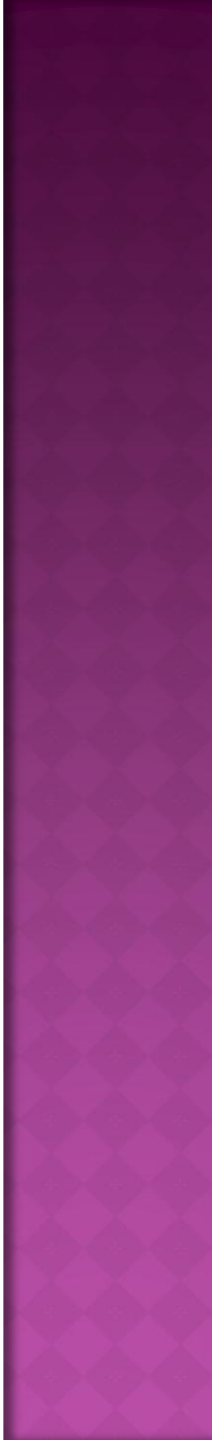
Regularly eating shellfish
may boost your immunity,
aid weight loss, promote
brain and heart health.

FISH OIL:

- ◉ Fish oil is oil derived from the tissues of oily fish.
- ◉ It contains OMEGA-3 FATTY ACIDS EICOSAPENTAENOIC acid and Docosahexaenoic acid its very important for our health.
- ◉ Fish oil supplements may help reduce waist circumference, as well as weight loss when combined with diet or exercise.
- ◉ Fish oil supplements - Especially EPA-rich one.



Omega 3 - fattyacids



FISH GLUE:

- ◉ Fish glue used in the gluing of wood, papers, cardboard, and leather.
- ◉ Formulated from fish bones, artisans fish glue is natural and flexible glue that has a strong adhesion power.
- ◉ A type of glue made by prolonged boiling of connective tissue.
- ◉ Either of 2 gelatinous substances obtained from fish waste products .

EXAMPLES:

- a) Isinglass
- b) Skin, fin and bones of fish and used chiefly in liquid form in the cold.

FISH PRODUCTION CENTERS

There are 9 major fish production centers in India:

- ✓ Kerala
- ✓ Karnataka
- ✓ Maharashtra
- ✓ Gujarat
- ✓ Andrapradesh
- ✓ West bengal and orissa
- ✓ Goa, Damn & Diu
- ✓ TamilNadu
- ✓ Other fish producing centers (Punjab, Haryana, Uttar pradesh, Uttar khand, Bihar)

MICROBES INVOLVES AND PREVENTION:

Pathogens may be at low levels when fish or shellfish are harvested and others introduced during handling and processing by unsanitary practices.

Bacteria in food may cause illness in humans by infection or intoxication. eg) bacteria found in sea food that cause FOOD BORNE ILLNESS by infection are Vibrio Salmonella, Shigella and Listeria.

Viral agents, Norovirus associated with both bivalve mollusks and finfish, caused 16% of all seafood related diseases and almost 30% the illness reported from 1973 - 2003.

PREVENTION:

- ✓ Washing hands
- ✓ Cooked sea foods separate to avoid cross contamination.
- ✓ Storing sea foods in the refrigerators below 40 degree F for in the freezer below 0 degree F.

What products are made from fish?

The traditional fishery byproducts are fishmeal, fish body and liver oils, fish maw, isinglass etc. Fish protein concentrate, fish albumin, glue, gelatin, pearl essence, peptones, amino acids, protamines, fish skin leather etc. are some other byproducts generally processed out of fish and fish waste.

What are the 5 kinds of processed fish?

There are several different ways of processing fish, mainly according to the kinds of fish.

Sun-Dried Fish (Nsomba Zowuma) ...

Boil-Dried Fish (Nsomba Zofwafwaza) ...

Roast-Dried Fish (Nsomba Zoocha) ...

Smoked Fish (Nsomba Zowamba)

What are the fish processing activities?

The four basic procedures used in the final **processing** of **fish** products are heating, freezing, controlling water activity (by drying or adding chemicals), and irradiating. All these procedures increase the shelf life of the **fish** by inhibiting the mechanisms that promote spoilage and degradation.

10 Major Fish Products of India

Fish Oil

Shark's Fin

Fish Meal and Fish Guano

Fish Roes

Fish Flour

Fish Glue

Fish Silage

Isinglass

Fish Soluble

Fish Skin

Present Position:

India has an abundant marine and inland resource, perhaps one of the richest in the world. Japan tops the list of fish producing countries of the world, seconded by Peru. India stands between seventh and ninth position. India's total annual production in 1950 was 0.817 million tones which reached the highest in 1970 at 1.845 million tones. Although it is difficult to estimate the inland fish production, the rough idea given by different states and by the reports on the marketing of fish in India shows that 1951 annual production of 218.0 thousand tones had reached its height in 1969 with 693.2 thousand tones.

State wise data shows that West Bengal is at the top of the list in both annual production and the average production of ten years followed by Tamil Nadu and Andhra Pradesh. Bihar is trailing at fifth-sixth position. The Indian Council of Agricultural Research has established the Central Inland Fisheries Research Institute (CIFRI) with several pilot projects in different parts of India.

Government

R&I financing and infrastructure

Norwegian
Seafood Research
Fund (FHF)

Research council
of Norway

Innovation
Norway

Aquaculture value chain

Suppliers

Smolt
farming

Grow-
out
farming

Local
transport

Primary
proc-
essing

Inter-
national
trans-
port

Secondary
processing

Domestic
trans-
port

Final market
(retail,
food service)

Fisheries value chain

Suppliers

Fishing
fleet

Primary
proc-
essing

Inter-
national
trans-
port

Importer/
whole-
saler

Domestic
trans-
port

Fillet/
VAP

Domestic
trans-
port

Providers of R&I services and infrastructure

R&D
institutes

Universities
and colleges

Consultants
and other
knowledge
providers

Videos: <https://fishlab.com> > fish-food
<https://zoomed.com> > spirulina-20-fish-food-flakes
<https://www.youtube.com> > watch

TANK

you

