

There is a long time tradition for salt fish production in Iceland. Icelanders have salted fish for centuries and now in the early 21st century the fish from Iceland is popular food worldwide, particularly in the Mediterranean. Icelanders place a great emphasis on developing innovative products and processing methods to ensure quality and freshness. The most important fish stocks for salted fish production are cod, saithe, tusk and ling.



# ICELANDIC SALT FISH

PRODUCED FROM FRESH RAW MATERIAL



---

Icelandic fish products are highly in demand on markets around the world for quality and freshness and sustainable use of marine resources is a key component of responsible fisheries management and conservation of biosphere, to ensure growth and development of fisheries for the future.

The sea around Iceland is a rich source of wholesome and valuable fish. Around Iceland, hot and cold ocean currents meet that create good living conditions for the ecosystem and the rich fishing grounds.

## The raw material

The raw material is whitefish, which is either split or filleted. It is necessary to know the variability of the raw material after season, fishing areas and fish size which are important factors in order to ensure proper processing and curing of salt fish. Also, raw material handling, fishing techniques, storage technology and age can have impact on the production of salted fish and the choice of curing processes. Chemical and physical properties of muscle are important in order to obtain the proper curing characteristics such as stability of the product from production to consumer's plate.

## Processing and curing methods

Salt fish production is based on a long experience and tradition. With today's computerized research great knowledge has accumulated and a better understanding of

the efficacy of different processing methods of fish flesh in terms of taste quality and utilization. This knowledge and emerging technologies is applied to achieve best results in the processing and curing and thus meet the expectations of consumers in the major salt fish markets.

Icelandic salt fish producers have developed salting methods to achieve the right quality to meet the expectations of consumers in different countries. To achieve better products, improved handling of raw material was implemented as well as improved control during processing, curing and storage (temperature and humidity) as well as the development of packaging. With increased knowledge and control of fish stock, e.g. fishing at the right time of year, better products are obtained.

Mechanism of salt fish production is divided into processing and curing stages. Many different ways are to produce salt fish. Through the years, processing methods have changed from being solely dry-salting to various salting modes of action steps. Now after processing the main steps involve pre-salting (injection and brining), dry salting and storage until the fish is fully cured.

Chemical and physical properties of muscle are different depending of time of season and fishing grounds and they largely determine how right curing characteristics and stability of products are obtained. Preferred changes in taste, smell and texture of the raw material take place during processing and curing and these are preserved during the rehydration

- 
- Icelandic salt fish is all produced from fresh raw material
  - The fishing period is chosen with regard to the quality of the raw material and the needs of the market
  - The choice of salt type and amount, the right temperature and humidity ensures quality and freshness

process of salted fish. The purpose of salting is to lower the water activity in which the salt binds water and thus prevents spoilage of the fish. With salting, enzyme activity is reduced in fish flesh and prolonged shelf life is obtained maintaining the right taste and texture of the fish.

### Packing and Storage

After salting the fish is packed and placed in storage. During storage, changes in taste of the fish continue. It is important to control both temperature and humidity during storage in order to prevent deterioration of characteristics of the product. If humidity of the product is too low, loss of water content in products can take place if humidity of air in the storage room is too high. It is recommended that the product is stored at approximately 76% air humidity to preserve all the desirable properties that buyers have requested.

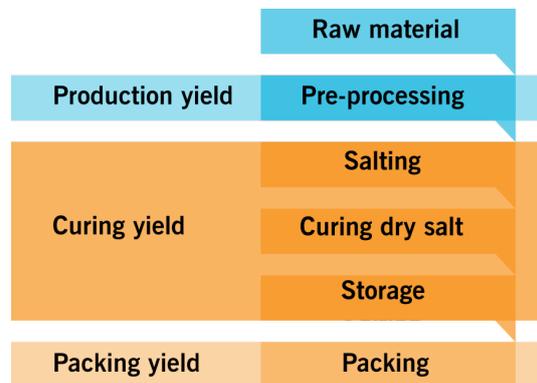
### Novel innovation

Continuing systematic development of knowledge is essential to achieve even better results in the processing and effectiveness of salted fish to meet the expectations of consumers in the major salt markets. It is necessary to use different measurement methods giving different information about the characteristics of the development of products and processes. Among them are water assessments regarding the situation and distribution in the muscle (water resistance

measurement, water activity, NMR techniques (Nuclear Magnetic Resonance)).

The consumer experience of the product is done by evaluating rehydrated products with sensory evaluation methods for taste, smell and texture characteristics.

The development of salt production in Iceland has brought about improved processes and new products that meet the requirements of buyers. This technology will already help the manufacturers to control the mass weight of the processing so that the product delivers popular features. You can achieve the best results in the production of salted products by knowing how each process step has on the effect of fish muscle. Increased understanding of these factors will facilitate the management of all processing, while increasing the prosperity of sellers and buyers.



The production of salt fish processing (fillets or split fish)





# NUTRITION AND HEALTH

Cooked rehydrated salt fish contains similar energy content as cooked fresh fish. Salted fish is a good source of protein and fat content is low but rich in omega. The energy value of cooked salt fish is about 100 kcal per 100 g of edible portion which is similar to boiled fresh cod. When the fish is sufficiently rehydrated the salt contents is about 1%.

In salt fish dishes served at restaurants the fish proportion is often small compared to other low-salt things on the plate. Salt content of such dishes may be comparable to many other fish and meat dishes. Icelandic salt fish producers have had the guideline not to lessen the nutritional value of protein and fat. By the Icelandic processing of salt fish it has been succeeded to maintain the white colour and reduce rancidity. Salted fish is a very good ingredient in many dishes and the possibilities are virtually endless, as seen in the cuisine of Mediterranean nations.

ICE SALT FISH ASSOCIATION

Gudbergur Runarsson

[gudbergur@sf.is](mailto:gudbergur@sf.is)

Tel. +354 591 0350

Borgartun 35, 105 Reykjavik, Iceland

[www.sf.is](http://www.sf.is)



RESPONSIBLE FISHERIES OF ICELAND

BORGARTÚNI 35

105 REYKJAVÍK

ICELAND

[WWW.RESPONSIBLEFISHERIES.IS](http://WWW.RESPONSIBLEFISHERIES.IS)

Gudny Karadottir

Marketing manager

[gudny@promoteiceland.is](mailto:gudny@promoteiceland.is)

Tel +354 511 4000

Finnur Gardarsson

Project manager

[finnur@fiskifelag.is](mailto:finnur@fiskifelag.is)

Tel +354 591 0308

