Why hand-harvested sea salt should be recognized as an organic salt

Artisanal Sea Salt Europe: the European Federation of hand-harvested sea salt

French, Italian, Portuguese and Spanish producers of hand-harvested sea salt created, on 11 July 2007, in Nantes (France), a European federation whose aim is to defend their interests with the European institutions.

The founding members of the federation are:
- The French Association of hand-harvested sea salt producers from the Atlantic,
- The Spanish Association of Salinas Marinas Artisanales (AESMAR),
- The Portuguese Association Federação Nacional de Produtores de Sal Marinho Artesanal (FENA.SAL),
- The Consortium for the valorisation of the Sale MARino di Trapani (SMART).

In 2018, hand-harvested sea salt producers from Croatia (Solana Nin) and Slovenia (Soline Pridelava soli d.o.o) joined Artisanal Sea Salt Europe.

For more information: http://artisanalseasalt.eu

Salt: brief historic overview

Salt, as a product, has evolved a lot in the last 200 years. Salt production is one of the activities industrial revolution impacted more. Initially, salt was only used for human and animal consumption and for food preservation. It was an important way to improve people's health, as it supplied the population with several minerals and elements (as magnesium, potassium, calcium, iodine, etc.) important to human health. Salt was associated with health!

With the industrial revolution, salt began to be a key raw material for the chemical industry which rapidly became one of the main consumers of salt. As a result, the salt production business shifted from a food related production to an industrial product. Currently, only approximately 5 to 7% of the world salt production is for human consumption.

This shift changed the salt industry as the chemical and industrial consumption demand "pure" salt, in the sense that it must be a one component product, without secondary minerals (100% pure sodium-chloride content is required). This improves the efficiency of the industrial process and reduces machinery damage. To accommodate this, salt regulations changed in the 20th century, forcing sodium-chloride content in salt to be higher and higher to be admitted on the market. As a result, healthy important minerals and other sea elements are now absent from most of the salt available on the market.

What is hand-harvested sea salt?

- **A specific, traditional and unique production process**

Hand-harvested sea salt, also called Traditional or Artisanal sea salt, is harvested from salt marshes, which are man-made areas made up of a series of lined pools (ponds or basins) in which the sea water circulates by gravity or by means of pumps at a rhythm controlled by the salt producer.

Sea salt production has a lot in common with many organic agricultural crop productions. There are three phases - planning, "growing" and harvesting - and seasonality plays an important role. The successive basins, in which the sea water evaporates, and the water regulating structures are maintained each year before the harvest (planning). During the dry season, under the effect of the sun and the wind, this water evaporates and the water salinity increases in the successive ponds, until crystallization of the salt is obtained ("growing"). Then, the salt is collected the traditional way by hand with wooden tools (harvesting).

This agricultural production technique is based on specific know-how that takes into account the clay nature of the soil, the climate and the local agricultural practices in each of the production sites, no machinery, chemicals or fossil energy usage. It has not changed for centuries and the harvested salts (coarse salt and *fleur de sel*) are raw products, 100% natural.

- **2 types of salt: coarse salt and *fleur de sel***

i. **Coarse salt**: it is made of salt crystals that crystallize at the bottom of the basins where they are collected. It is harvested manually with a specific tool that allows to collect it and then hoist it out of the basins. The coarse salt is drained and naturally sun-dried, it is not washed and is packaged without using any additives. Hand-harvested sea salt is rich in minerals naturally present in sea water. The size of the crystals is heterogeneous and their colour ranges from white to grey. Hand-harvested coarse salt does not undergo any treatment and is packaged without using any additives.

ii. ***Fleur de sel***: It is made of very fine pyramid-shaped crystals, light and friable, of low density, that form and float on the surface of saturated salt water. Its production is characterized by a very fast process of concentration and crystallization. The *fleur de se*l is collected directly on the surface of the water. It is richer in minerals (especially magnesium and potassium) than coarse salt. As its production requires very specific weather conditions, it is a rare and sought-after product. Hand-harvested Fleur de sel does not undergo any treatment and is packaged without using any additives.

- **Specific organoleptic characteristics**

The absence of any raw product processing or transformation procedures and the traditional method of harvest give hand-harvested sea salt interesting characteristics, both organoleptically and analytically. Hand-harvested sea salt contains elements other than sodium chloride: magnesium chloride, calcium, potassium, as well as micro-nutrients, which make its specificity and quality.

Hand-harvested sea salt: a product of terroir and quality

Throughout the European Union, several hand harvested sea salts have acquired a high reputation and a quality image with consumers, chefs and restaurant owners, such as the Guérande salt in France, the Trapani salt in Italy, Isla Cristina, San Vincente, Chiclana salts from Andalusia and the

Fuencaliente salt from the Canary Island in Spain and the Ria Formosa and Castro Marim salts in Portugal.

Each of these salts has specific characteristics that come from its place of production and the traditional methods of harvesting that are used. Its production has a strong emphasis on sustainability, quality and consumer protection and satisfaction.

Hand harvested sea salt maintains the correct equilibrium of mineral and elements present in the sea water. Interestingly, human blood plasma shares with sea water a near equal proportion of minerals, an indicator of the importance of that equilibrium for human health. Intensive salt washing processes alters drastically that equilibrium, loosing most of the present minerals, increasing so the percentage of sodium-chloride and reducing the positive impacts of sea salt to human body. As an example, magnesium, one of the most essential elements for our body functioning, present approximately as 1% in a raw sea salt, small amount but adequate and enough for our body health, is one of the elements washing processes can throw away from salt. A correct presence of small amounts of this type of minerals causes salt to be a natural healthy product, in opposition of being a health dangerous product composed of mainly sodium-chloride. Hand-harvesting sea salt is the salt production process naturally ensures salt as a clean and safe product ready to human consumption without the need of washing or other post harvesting industrial treatments.

The reputation of these products is strong. These salts are used by leading chefs across the globe and their presence is very often used as a marketing tool on the label of processed food products to take advantage of their quality image.

Positive evolution of European regulations

The European federation of hand-harvested sea salt producers welcomes the recent evolution of two European legislations which allows the enhancement of the value of quality salts, whether through the protection of certain salts as geographical indication or by the inclusion of salt in the new organic regulation.

After advocating for a change in these two EU legislations, Artisanal sea salt Europe welcomed the fact that some salts became eligible in 2008 for protection as a Protected Denomination of Origin (PDO) or Protected Geographical Indication (PGI). Since then, many salts have been registered as PDOs or PGIs:

- Sel de Guérande / Fleur de sel de Guérande (PGI, France), Sel de Salies-de-Béarn (PGI, France),
- Sal de Tavira / Flor de Sal de Tavira (PDO, Portugal),
- Sale Marino di Trapani (PGI, Italie),
- Oriel Sea Minerals et Oriel Sea Salt (PDO, Irlande),
- Piranska sol (PDO, Slovénie),
- Anglesey Sea Salt / Halen Môn (PDO, UK).

Several other requests are pending.

The recent reform of the EU Regulation on organic farming has widened its scope which now includes salt. To date, however, there is no EU-wide definition of organic salt production rules.

Artisanal Sea Salt Europe is keen for the European Commission to define these production rules in order to allow fair competition between producers and to protect consumers against fraud and deception.

Hand-harvested sea salt: an organic and sustainable product

Can salt be labelled "organic" in the EU?

No.

Council Regulation (EC) No 834/2007 of 28 June 2007 on organic production and labelling of organic products does not cover salt. However, Regulation (EU) No 2018/848 adopted on 30 May 2018 provides that from 1 January 2021, salt intended for food and feed will be able to obtain the organic label. Under this new regulation, the European Commission has the possibility to define the methods of production of organic salt to clarify which salts may be marketed with the mention "organic salt".

Hand-harvested sea salt, an organic product

Recital 1 of Council Regulation (EC) No 834/2007 of 28 June 2007 and Council Regulation (EU) 2018/848 of the European Parliament of 30 May 2018 on organic production and labelling of products biological systems provide that:

> *« Organic production is an overall system of farm management and food production that combines best environmental practices, a high level of biodiversity, the preservation of natural resources, the application of high animal welfare standards and a production method in line with the preference of certain consumers for products produced using natural substances and processes. The organic production method thus plays a dual societal role, where it on the one hand provides for a specific market responding to a consumer demand for organic products, and on the other hand delivers public goods contributing to the protection of the environment and animal welfare, as well as to rural development. »*

Let's apply this definition of organic production to the salt production in Europe.

Salt production in Europe takes many forms and is intended for a very wide market ranging from food and feed to chemicals and salts to be used on roads. The website of EUSALT, the European association representing the major petrochemical groups involved in salt production in Europe, describes three methods of salt production:

- The rock salt mining technique

In Europe, rock salt deposits were formed over 200 million years ago as a result of the evaporation of earlier seas. Miners extract salt from dry mines by means of drilling, blasting or cutting the rock. This fossil salt extracted from the subsoil is what is called rock salt.

- The solution mining technique

Freshwater is forced under pressure into layers of rock salt. This loaded water is pumped out of the ground, goes through a purification process and then is heated to crystallize the salt. The salt finally goes through centrifugation and is dried.

- The solar technique

Salt is collected in salt marshes after the natural evaporation of sea water under the effect of the sun and the wind.

- There is a fourth method of production: the artificial evaporation technique

  This technique which consists of artificially evaporating salted water (in vacuum boilers or not) and drying the resulting salt. It is used mainly in geographical places where sun exposition is low, for specific physical or chemical use or because of its high productivity. The production of salt requires high amounts of energy and brings a lot of CO2.

Although the marine origin of salt in these production methods is indisputable, it can be noted that the rock salt and the solution mining techniques do not meet the basic principles of organic production set out in the recital of Regulations 834/2007 and 2018/848. The means used, long chain-saws, skips and explosives are identical to those used for the extraction of other ores such as coal.

Organic farming is about sustainable production, protecting the environment and natural resources. In the case of salt mining, the use of the resource is final; a new mine must be found when the previous one is exhausted. In addition, the purity of the mineral deposit may be insufficient, and it is therefore often necessary to wash the rock salt to remove impurities, which requires the use of large amounts of fresh water, strong and dangerous pollutant sewage production. The solution mining technique, on the other hand, consumes a lot of energy and fresh water. In Europe this technology is mainly used to obtain the different elements of salt used by the chemical industry such as chlorine and sodium.

In Europe, only the solar method of salt production is close to agriculture, with a cycle of weather-dependent production and a seasonally-adjusted salt marsh schedule. Resource renovation results from the nature sea water cycle. In France, the solar method is also called "agricultural". The solar technique based on the natural evaporation of seawater, is therefore in line with the requirements of organic farming.

It should be noted that there are two different solar salt harvesting techniques:

- a traditional hand-harvesting technique during which the salt is not washed and where no inputs are used for its production. This traditional sea salt is known for its natural richness in minerals (magnesium, potassium, iron, etc.).
- a mechanical (so-called industrial) harvesting technique during which the salt undergoes a post-harvest wash to obtain a salt rich in sodium chloride, to which are added anti-caking agents to prevent the absorption of humidity, as well as other additives.

Hand-harvested sea salt protects the environment

The solar production technique developed over more than 2000 years in the salt marshes has undoubtedly contributed to preserve a specific fauna and flora. Salt marshes have long been recognized as playing a major role in the conservation of water birds for both breeding and staging and, as a result, most of them are classified as Natura 2000, Nature Reserve or Ramsar sites.

Over the centuries, thousands of hectares of wetland have been developed to produce salt. Salt marshes, the man-made basins where salt is produced, have emerged as important habitats for many resident water birds and as major safe havens for innumerable migratory species that use them for foraging and resting throughout their long-distance migrations.
Salt production has built an extremely delicate and precious equilibrium on these immense surfaces with a high environmental value. The exploitation of salt marshes helps to maintain the ecological balance guaranteeing the very existence of these rare habitats in the European Union and the often-

threatened biodiversity that they shelter. Located on the coast and often near urban centres and seaside, these sites are also threatened and coveted by urbanization. In the absence of direct economic development, their conservation is not ensured. The drying up of uncultivated salt marshes results in a biological impoverishment of the environment and a downgrading of the landscape.

Exploited and maintained, the salt marshes are exceptional places. The constant exchanges between sea water and freshwater and the shallow depth of water which allows the light to penetrate to the bottom of the basins favour the development of the plankton which constitutes the first link of the food chain. This rich food makes it a land of choice for the wintering and reproduction of birds including many protected species (e.g. bluethroats, white spoonbills, terns, buzzards, marsh harriers, flamingos, herons, black-winged stilt ...). These marsh areas are also perfect for the growth of juveniles of many bird species that find abundant food and protection against predators. Marsh areas are often referred to as the "nurseries" of the coast.

The traditional salt marshes ***among the most relevant ecological developments ever made by man in Europe****.*

Traditional salt extraction is indisputably part of the cultural heritage of many regions and a remarkable example of conciliation between economic progress and environmental conservation, concurrently creating jobs and income and promoting biodiversity and wildlife preservation
The salt producer leaves a very small footprint in the salt marsh: in large areas of water reservoirs and evaporation sites, he/she intervenes only very little, but his/her actions help to maintain the water levels adequate for the birds as well as the land areas, above water, suitable for breeding. The sustainable exploitation of salt creates and maintains this exceptional ecological wealth. The producer is «**a producer of salt and biodiversity**».

These territories are also original sites that offer visitors a unique setting of marine meadows composed of a mosaic of salt marshes with multiple colours. These wonderful landscapes, characteristic of a specific activity, are often put forward to help bringing tourists to the regions concerned. Visitors discover, alongside the ecological value, the existence of a true salt civilization and a specific cultural identity forged around the salt marshes. All the development of these territories was made thanks to this product formerly very coveted. The different production sites give us the secrets of this story: villages of salt growers with typical architecture like Saillé or Castro Marim, windmills to ensure the pumping of water in Trapani, old salorges, the traditional salt barns, that dot the marshes as in Figueira da Foz and ports of salt export as Aveiro or Ars en Ré, arising from this rectilinear landscape carved by the hands of salt workers. These sites constitute a great real estate heritage that can, with the old rustic salt houses, be dedicated to tourism, naturalism and museum spaces.

The traditional use of salt marshes by family-size farms responds to the challenges faced by European agriculture in terms of preserving high natural value agricultural systems and cultural landscapes, as well as in the environmental field by protecting natural resources and the biodiversity.

Organic salt regulation

Regulation (EU) 2018/848 of 30 May 2018 on organic production and labelling of organic products and repealing Council Regulation (EC) No 834/2007 which will be applicable from 1st January 2021 sets out the key principles with regard to organic production.

The production of hand-harvested sea salt is fully in line with the principles set out in Article 5 (general principles) and Article 6 (specific principles applicable to agriculture activities and aquaculture) of that Regulation. This is not the case for other salts.

What should be the criteria to define organic salt?

It is our understanding that to adhere to the EU organic regulation principles, organic salt shall comply to four main criteria:

- 100% natural components, no non-organic elements added (prohibition of additions of trace elements, bleaches, anti-caking agents and any other additives);
- Natural production process;
- sustainable use of resources;
- almost zero ecological footprint and biodiversity preservation.

The following table compares the different salt production techniques' compliance to these criteria.

	100% natural product	Natural production process	Sustainable use of resources	Limited ecological footprint Biodiversity protection
Rock salt mining technique	NO - Transformed product - Addition of anti-caking, whiteners and other agents	NO - Needs physical or chemical cleaning - Artificial mineral equilibrium	NO - Non-renewable: a salt mine can be exhausted - Water to clean the salt - Energy to extract the salt	NO - Industrial process - Impact of explosive and chemical agents and heavy machinery usage - Natural landscape impact - No biodiversity protection
Solution mining technique	NO - Transformed product - Addition of anti-caking, whiteners and other agents	NO - Needs physical or chemical cleaning - Artificial mineral equilibrium	NO - Non-renewable: a salt mine can be exhausted - Important use of freshwater - Energy to extract the water, boil the brine and dry the salt	NO - Industrial process - Pollutant salty sewage - CO2 production - Heavy machinery usage impact - No biodiversity protection
Artificial evaporation technique	NO - Often, addition of anti-caking agents	NO - Artificial crystallization techniques to produce the salt	NO + Use of sea water or of salted water - High energy usage to boil the brine and dry the salt	NO - Industrial process - CO2 production - No biodiversity protection
Solar technique Mechanical harvested	NO - Addition of anti-caking, whiteners and other agents	NO - Heavy machinery used for harvest - Needs physical cleaning	YES + Use of sea water, sun, tides - High energy usage to extract water, wash and dry the salt	NO - Pollutant salty sewage from washing - CO2 production - Heavy machinery usage impact + Biodiversity protection: some nature protected sites enforcement
Solar technique Hand-harvested	YES + 100% sea water components + No anti-caking, whiteners and other agents	YES + No post-processing needed + Naturally purified, prior to harvesting + Hand-harvested	YES + Use of sea water, sun, tides + No human produced energy consumption + Production linked to weather conditions	YES + Biodiversity protection + Nature protected sites enforcement + No sewage or other pollution + Manual tools, family size infrastructure, low wildlife disturbance