

SaltGuru Video Transcript

Episode: 1 – Sea Salt

Date: October 24, 2009

▶ Hi, my name is Mort Satin and I am the Salt Guru. I am also the Technical Director of the [Salt Institute](#) in Alexandria Virginia.

We are here to talk about salt - one of the most common food ingredients that we consume every day of our lives. You hear a great deal about salt these days and much of it is confusing and sometimes misleading. So, we're here to demystify salt and to try and get rid of all the myth-information that is out there.

During this series, we will explore a great many aspects of salt. How it is produced. How it is used. Salt's role in nutrition and its impact upon health. We will even discuss salt and the environment.

This is episode one in the Salt Guru series and because we read so much about it and see TV chefs using it and large food companies incorporating it into their recipes, the first episode will be devoted to sea salt.

Well, what is sea salt? In fact, there is no official definition for sea salt. Don't forget that all salts, regardless of where they are obtained from, originally derived from the sea. The [rock salt](#) that we mine comes from ancient seas that dried up and left deep underground deposits in past geological ages. Sometimes these huge deposits can be as deep as 2 - 3000 feet below the earth's surface, but because they are so large it is practical for us to send miners down to retrieve it for our use. There are other ancient deposits that are not as practical for conventional mining, so we drill wells down to those deposits and pump freshwater in, allow it to saturate with salt and then bring it up and remove excess water by evaporation. This results in the purest salt and is simply called [evaporated salt](#). This is the normal table salt we use.

The common understanding of what we refer to as sea salt is salt that is freshly made from surrounding seas by a process referred to as solar evaporation. This process doesn't only use the sun, but also ocean breezes. Making [solar sea salt](#) is fairly straightforward. The seawater is pumped or moved into a protected pond and allowed to rest under the influence of the sun and wind. This evaporates the water and concentrates the salt. After an appropriate period of time, this concentrated salt water – called brine - is moved into another pond and the first pond is recharged with fresh seawater. This process is repeated moving the ever-increasing concentrations of brine from pond to pond until the concentration of salt is

SaltGuru Video Transcript

high enough to precipitate. In the final pond where precipitation occurs, the salt is harvested.

Because there are variations in the way sea salt is produced around the world, it can vary considerably from one location to another. Even within the same location it may differ from producer to producer. As a result sea salt is not a standardized product and can vary in its sodium chloride content from 60 to 99.9%. Sodium chloride is the molecule in all salt that is responsible for its typical taste. The higher the sodium chloride content of the sea salt, the more typical salt taste it will have. Other impurities in the sea salt come from the sea and the surface that it is harvested from. These are generally other minerals typically found in the sea and sea mud.

There is a great deal of talk regarding the nutritional value of these other minerals, but there really are no reliable clinical studies published to support their supposed benefit. In fact, there is one problem associated with sea salt. Many people are misled to believe that sea salt contains sufficient iodine to replace the iodine found in iodized salt. Without any exception, this is not the case^{1 2}. Iodine is critical for cognitive development in children and parents must understand that sea salt does not provide sufficient iodine for this purpose.

Sea salts come in a great variety of forms as can be seen from this lovely demonstration kit my daughter Carey bought for me produced by Chef Stephan from Nova Scotia Canada. Here you can see all types of sea salt from different parts of the world that vary in color, texture and taste. Some of the salts such as the ones in the top row are roasting salts that are recommended for rubbing on large cuts of meats prior to roasting. The second row demonstrates pan salts, salts suitable for using when sautéing in the pan, while the third row demonstrates some of the more spectacular finishing salts that are used to add color, flavor, texture and pizzazz to dishes just prior to presentation. These interesting salt colors usually come from other minerals or from colorful micro-organisms, such as photosynthetic bacteria or algae that have evolved to live at the high salt concentrations found in solar ponds. In fact, it is interesting to see satellite

¹ [Fisher and L'Abbe](#) (1980) tested non-iodized sea salt and iodized table salt and sea salt. The authors found 52.9 - 84.6 micrograms iodine/gram of salt in iodized salt and 1.2 - 1.4 micrograms iodine/gram in non-iodized sea salt. [see Fischer, Peter W. F. and Mary L'Abbe. 1980. [Iodine in Iodized Table Salt and in Sea Salt](#) . Can. Inst. Food Sci. Tech. J. Vol. 13. No. 2:103-104. April]

² [Aquaron](#) (2000) determined iodine content of natural sea salt and rock salt, and iodized salt. The author found iodine levels of less than 0.71 milligrams iodine/kilogram of salt (micrograms/gram) in non-iodized salt and 7.65 - 100 mg iodine/kg of salt in iodized salt (depending on the country's iodine laws). [see Aquaron, R. 2000. Iodine content of non iodized salts and iodized salts obtained from the retail markets worldwide. 8th World Salt Symposium, Vol. 2:935-940]

SaltGuru Video Transcript

images of solar salt ponds because they look like a patchwork of different colors because of these benign organisms.

While there is no international standard for sea salt, there is a standard for what is called [Food Grade](#) salt. It is the [Codex Alimentarius](#) standard agreed upon by all countries. The critical part of this standard is that Food Grade salt, regardless of where it comes from, be it sea salt, rock salt or evaporated salt, must contain a minimum of 97% sodium chloride. This means that anyone who uses food grade sea salt in its recipes will have approximately the same sodium content as if they had used the normal evaporated table salt. There may be slight differences, but because Food Grade must have a minimum of 97% sodium chloride, these differences are not significant.

Because it is the sodium chloride that is responsible for the typical salty taste we love, it is impossible to lower the level without impacting the taste, unless you add complex chemical additives to enhance our taste perception. These salt enhancers will be the subject of another episode.

So, there we have sea salt - interesting, colorful and tasty variations of the salt we eat every day.

Until next time, this is the Salt Guru. Bye for now. ◀

≈≈≈