

S4. Product development status at Ako Kasei Co., Ltd. and related issues

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1. Introduction of Ako Kasei Co., Ltd.

In Ako, salt production has been performed since ancient times, and sites of pottery salt production at the end of the Yayoi Era have been identified. In addition, in the year 756 of the Nara Era, parts of a saltern were donated to Todaiji Temple for use as a “salt manor.” Since the beginning of the development of the field of salt stone masonry, in which brine was collected through tidal action along the coast as a business of the Ako Domain in 1626, a large-scale salt field has been developed in this area, and the name “Ako’s salt with bittern” became popular in Edo and nationwide. Thus, this area is called the “birthplace of the coastal salt field using brine from the sea,” which has played a leading role in the development of salt fields in 10 areas within the Inland Sea. Ako Kasei Co., Ltd. has 4 businesses that produce brine-derived minerals (chemicals, food, health business, and salt business) in Ako City, Hyogo Prefecture (Head Office and Ako Plant), Muroto City, Kochi Prefecture (Office for Deep-Seawater Business), Shinjuku-ku, Tokyo (Tokyo Branch) based on our belief and technologies to produce salt with wholly concentrated clean seawater, which have been carefully passed on in Ako since ancient times. The Chemical Section sells products that meet the Japanese Industrial Standards and the standards of the Japanese Pharmacopoeia for industrial materials, antifreezing agents, as well as medical materials, among other products. The Food Section sells prepared products that use magnesium or calcium independently or combined as a tofu coagulator. The Health Business Section sells beverages that have been produced using deep-seawater and foods that contain magnesium. And the Salt Business Section produces and sells “AKO NO

AMASHIO,” which includes mineral, such as magnesium and calcium, “AMAMI NO SHIO” is produced from deep-seawater, as is lemon salt, salt pickled scallions, miso, oyster sauce, fine noodles, and salt candy.

2. Product development using deep-seawater

Ako Kasei Co., Ltd. moved towards the use of deep-seawater in 1995, when we made efforts to produce a new type of salt after the salt monopoly system was abolished in 1997 and before the liberalization of salt sales in 2002. In addition to our belief in the ancient salt production method used in the Banshu Ako region, we implemented advances in research and production techniques for minerals that have been accumulated through long-term cooperative activities with universities in order to produce functional beverages (“Deep-seawater AMAMI NO MIZU,” “My Water,” and “heatstroke countermeasure water”), “AMAMI NO NIGARI” food which contains magnesium, salt and soymilk which contains magnesium and calcium.

These products are made using a production method that was developed by combining the ancient salt production technique with clean deep-seawater without chemical reactions, and the latest techniques. In the production process (Fig. 1), deep-seawater is first processed using a reverse osmosis membrane device, and then is separated into condensed seawater and desalinated water and the condensed seawater is further condensed using the ancient salt production technique. This method is used to produce beverages and salt that contains other minerals by combining extracted mineral liquid and the desalinated water obtained using the reverse osmosis membrane device.

3. Future issues

It is anticipated that continuous healthy life will be achieved, and that the functions of minerals, which are necessary for humans, will be further focused on in the future. According to the “Updated (1996 version) Table of the Elements in Seawater and its Remarks” (Bulletin of the Society of Sea Water Science, Japan, 1998, Nozaki), seawater contains low concentrations of various minerals. Ako Kasei Co., Ltd. will continue to research with a focus on various minerals in clean deep-seawater, and make

efforts to develop products that use such minerals, and we will place particular focus on health-related research and product development. We believe that products developed with deep-seawater will become more credible when deep-seawater-related studies are conducted, and product development and sales promotions are performed based on such findings. Thus, we hope to continue our research on minerals in order to draw attention to their function, and we will distribute the information gained through this research.

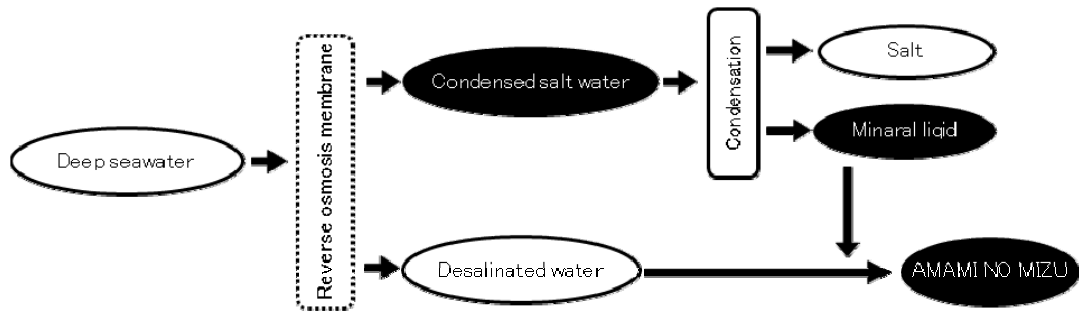


Figure 1 Production process of Deep seawater AMAMI NO MIZU