

Influence of Deep Seawater and its Salt for Cooking Process and Taste of Food.

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The seawater collected from 320m depth of the Muroto Cape is noticed as Deep Seawater, and it begins to use in the food processing field and to be added to many kinds of foods. These foods were claimed their good taste and good qualities, but the evidence of scientific reason are hardly shown. Such interesting things on the deep seawater salt may be caused in cooking process. In this study, it was investigated the influence of deep seawater and deep seawater salt for cooking process using sensory test and texture test.

Deep seawater and surface seawater were given at Kochi Prefectural Deep Seawater Laboratory. Deep seawater salt and surface seawater salt were prepared to heated at 135 °C to get rid of water and then ground into the mortar.

Sensory evaluation test for saltiness was carried out with 20 female students as panel members. The saltiness of deep seawater was greater than that of surface seawater. Furthermore, the evaluation for saltiness of deep seawater salt also was done in comparison with surface seawater salt, NaCl and NaCl+Mg (added 0.4% basic MgCO₃ to NaCl). Although the saltiness of deep seawater salt had no significant difference with other salts, the saltiness of NaCl+Mg was greater than NaCl. In addition, the sensory evaluation of salt solutions adjusted to 0.8% as NaCl concentration was shown resulting in the greatest saltiness of NaCl whereas there was no significant for 1.6% solution.

Radish were boiled with deep seawater, surface seawater and NaCl solution, respectively. The concentration of each salt solution was adjusted to be 0.85% as NaCl concentration. The sensory test scores of saltiness, hardness, sweetness and overall preference for boiled radish were evaluated as follows; the overall preference of surface seawater was slightly lower in spite of being no significant in other items such as the saltiness, hardness, and sweetness. The hardness of boiled radish measured by rheolometer also showed almost no significant while boiled radish cooked with deep seawater or surface seawater was slightly harder than that with NaCl solution. In this case, the intake of salt concentration was assumed as the almost same level in these radish made with such salt solutions.

On the other hand, there was no significance between radish boiled in deep seawater salt solution and that in surface seawater salt solution in all items; saltiness, hardness, sweetness and overall preference. The hardness of radish boiled with deep seawater salt solution measured by rheolometer was significantly higher than that with NaCl solution, and showed the same level as that treated with surface seawater salt solution.