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Feasibility Study for Decreasing the Dietary Intake of Salt Using the Salt Including the Bittern Component

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Summary

Salt is necessary for seasoning, and plays important role in the dehydration and penetration of vegetables, and tighten meat and the fish by denaturation of their proteins. Excess intake of salt causes disease and reduction of salt intake is recommended. However, the reduction affects the taste and texture of foods. We thought that the effects of Na^+ or Cl^-in salts on dehydration and penetration in vegetables are seemed to be different from those of Mg^{2+} or Ca^{2+}. If the swing salt including bittern in processing of pickle, meat and a fish at the home leads to shorten time, the use of salt should be suppressed. In the present study, we investigated whether the differences of concentration and composition of bittern in salts with same particle size affect dehydration and penetration in radish preserved with these salts. Furthermore, we studied that the differences are able to change texture or taste of preserved radish. In the preservation of radish with NaCl and salts including bittern components, dehydration and shrinkage by salts including bittern components progressed speedy than those by NaCl alone at all concentrations tested in this study. Moreover, we confirmed that the bittern components had an influence on the hardness of preserved radish. In sensory test, salts including bittern components smoothed saltiness and well pickled radish. We studied the pectic composition of radish in preservation with salts including bittern components. As the results, bittern components changed the pectic composition at early stage of salting, and these changes seemed to affect resistance to the teeth of pickles. In conclusion, it was suggested that salts with bittern components speed up preservation of pickles such as radish.