

The Changes of Physico-Chemical Properties of Salted-Meat during Salting Process.

Naomichi Iso, Haruo Mizuno, and Hiroo Ogawa
(Department of Food Science and Technology,
Tokyo University of Fisheries)

Summary

The changes of rheological properties and thermal properties of salmon (*Oncorhynchus keta*) meat during salting have been examined. The length and weight of the raw fish were ca. 70 cm and ca. 3.5 kg, respectively. The samples were prepared by salting with 15 wt % salt for 14 days at 0°C.

The elastic modulus and viscosity obtained by stress-relaxation experiments decrease in the first day of salting and then increase with salting day. The rupture strength obtained by rupture measurements exhibits a similar tendency. The decrease of these parameters in the first day may come from the decrease of freshness of sample meats, and the increase after that may correspond to the firming phenomena of meats due to dehydration and denaturation by salt.

On the other hand, the sol-gel transition of fish meat paste has been examined by a dynamic torsion oscillation method. The effects of salting reflect largely to dynamic modulus than dynamic viscosity or dynamic loss. The results on the 5 days' salting sample have shown the disintegration phenomena, that is, the so-called 'modori', and that was not detected on the first days' sample or 14 days' sample. The reason may be considered as follow: (1) the fish meat paste easily changes to gel by heating at the salt content of ca. 2.5-3.0 %. The salt content of the 5 days' sample agreed with the salt amounts. (2) the meat protein which contributed to the sol-gel transition completely denatured by salting for 14 days.

The enthalpy changes were measured by a differential scanning calorimetry. The values obtained decrease with the salting day. The results may come from the fact that the protein was denatured not by heating but by salting in the sample.

These results obtained in this work must be examined quantitatively in future.