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The role of NaCl for suppression of the formation of lipid peroxidation derived toxic aldehydes, 4-hydroxyalkenals in processed and stored fish, beef and pork

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Summary

In order to elucidate the role of NaCl for suppression of the formation of 4-hydroxyalkenals in processed and stored fish, beef and pork, we investigated the changes on 4-hydroxyhexenal (HHE) or 4-hydroxynonenal (HNE) contents in fish meats or pork of beef containing NaCl, respectively.

Red sea bream meats containing 0, 0.3, 0.6 and 0.9 M NaCl were stored at -20°C for 20 weeks and changes of HHE contents were analyzed. Significant difference were not observed in HHE contents in all samples. Saury meats containing 0, 0.3, 0.6 and 0.9 M NaCl were stored at 0°C for 7 days and changes of HHE contents were analyzed. Significant difference were also not observed in HHE contents in all samples.

Yellowtail meats containing 0.6 M NaCl and 0.6 M natural salt were stored at 0°C for 7 days and changes of HHE contents were analyzed. HHE contents in the meats containing natural salt were higher than those containing NaCl.

NaCl was added to fried pork, stored at 4 °C and changes of HNE contents were analyzed. During storage periods, HNE contents in fried pork containing NaCl were significantly lower than those not containing NaCl. NaCl was also added to fried beef, stored at 4 °C and changes of HNE contents were analyzed. After 3 days of storage, HNE contents containing NaCl were significantly higher than those not containing NaCl.

NaCl was added to boiled sardine meat, stored at 4 °C and changes of HHE contents were analyzed. Significant difference were not observed in HHE contents in all samples.