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The Effect of Salt Composition on the Quality of Meat Products

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Summary

The effect of salt composition on the quality of meat products was investigated using Japanese natural salt and salt mixtures prepared to refer the microcomponent composition in natural salt. The results obtained were as follows.

1) The extractability of muscle proteins and myosin heavy chain increased with the increasing the amount of microcomponents in natural salt, and  $MgSO_4$ ,  $MgCl_2$  and  $CaSO_4$  in salt mixtures. These changes tended to correspond with that of the ionic strength of each salt solution used. Furthermore, the extractability of myosin heavy chain especially increased with  $CaSO_4$  in salt mixture. Heat gel strength of myosin B also increased depending on the amount of same microcomponents in salt described above, and even more noticeable with the increase of heat temperature. Scanning electron micrographic observation showed that salt composition did not affect the ultramicrostructure of myosin B gel formed at 40°C and 80°C for 30 minutes.

2) Cured pork loin, cooked pork loin and bologna sausage were manufactured to study the effect of microcomponents in salt on binding capacity, water holding capacity and color. No effect of salt composition on water holding capacity and color of these products was observed. On the other hand, hardness of bologna sausage manufactured with salts which contributed to the increases of protein extractability and heat gel strength of myosin B tended to increase; particularly, the increase of hardness was significantly high in salt mixture with  $CaSO_4$ .

3) Prosciutto was manufactured to study the effect of microcomponents in salt on taste development during curing, aging and drying process. The proteolysis of muscle protein was enhanced by the increase of microcomponents in the curing salt. No effect of salt composition on the degradation of ATP was observed. Sensory evaluation on taste showed that umami and aftertaste of prosciutto became stronger depending on the increase of microcomponents in the curing salt. The improvement of umami and aftertaste corresponded to the increases of free amino

acids and peptides by the enhancement of the proteolysis.

4) These results suggest that microcomponents in salt show the possibility contributing to the improvement of texture and taste of meat products.