

Studies on Heating Stability and Functional Properties of DFD-Porcine Muscle

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DFD pork is advantageous in the production of emulsion-type sausages or of cooked cured products; however, problems arise if it is used for raw cured products or fermented sausages. The purpose of this study was to investigate the thermal denaturation of pork muscle protein and the water holding capacity, viscosity, emulsion stability and rheological properties with the variation of NaCl concentration and the change of TBA Value by the storage periods was compared with prepared DFD and normal meat batter. The endothermal enthalpy of the myosin plus sarcoplasmic protein in DFD muscle post mortem was lower than that of normal muscle. As the concentration of NaCl was increased, protein solubility of both normal batter(NB) and DFD batter(DFDB) was increased. The protein solubility of DFDB was higher than that of NB. The value of apparent viscosity of DFDB was higher than that of NB with the increase of NaCl concentration. When fat was not added, there was big difference in viscosity value between NB and DFDB at low NaCl concentration, while it was similar at 3% NaCl concentration. Cooking loss in NB and DFDB showed significant differences with 5% in NB and 10~15% in DFDB at 2% and above concentration of NaCl. With the similar trends with cooking loss, the rate of diameter reduction of DFDB was smaller than that of NB. High value of water holding capacity of DFDB might be due to the high pH. When NaCl was not added, protein losses between NB and DFDB during cooking was not different. As the concentration of NaCl was increase to 2%, the protein losses of DFDB were less than 1%. The protein loss of NB was 4~5 times larger than that of DFDB at 2~3% NaCl, while no further losses were observed more than 3% NaCl. As the concentration of NaCl was increased, emulsifying stability of DFDB was better than that of NB as the results of the decrease of fat separation, the increase of protein solubility with high pH and the release of salt soluble protein. As the concentration of NaCl was increased, the hardness of both NB and DFDB was increased. The TBA-value of DFDB was smaller than that of NB.