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Effects of Cooking Methods on Gel-forming Ability and Color of Surimi-like Pork

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The objective of this study was to evaluate the effect of various cooking temperatures and times on gel properties of surimi-like material (SLM) made from pork. The *semimembranosus* muscle was obtained by hot boning and a commercial washing process was used to manufacture SLM. The SLM was heated for 20 min in a water bate at a constant of 65, 70, 75, 80 and 85℃, and heated at 75℃ for 15, 20, 25, and 30 min. Color (CIE L*, Chroma and Hue) and gel strength of cooked SLM was measured. SDS-PAGE was also applied to investigate changes in sarcoplasmic proteins by cooking temperatures and times. The values of lightness, yellowness, chroma and hue were significantly ($p<0.05$) increased, whereas redness was significantly ($p<0.05$) decreased of cooked surimi-like pork by increasing of cooking temperature over 75℃. Also, hardness, springiness and gel strength were increased linearly as increasing of cooking temperature. There was no significant difference in moisture % of cooked surimi-like pork among cooking times. The values of lightness, hue and chroma were significantly increased with increasing cooking times, but lightness value was not changed over cooking of 25 min. Hardness and gel strength values of cooked SLM at cooking time of 15 min were significantly higher compared to cooking times over 20 min. Sarcoplasmic protein fraction pattern in SDS-PAGE showed that various enzymes were decreased as increasing of cooking times. The phosphorylase was remained at cooking of 15 min, but it was disappeared over 20 min cooking. Proteins, 60 kDa and 32 kDa bands approximately, were remained until 30 min cooking, and they were dim at 35 min. These results suggested that proteins remained in sarcoplasmic could attribute to dark color and undesirable gel-forming ability of cooked surimi-like pork. Especially it was assumed that approximately 46 kDa protein might be related to gel-forming ability and color of cooked surimi-like pork.