

Utilization of Transglutaminase for the Improvement of Binding Capacity in Restructured Meat Products Manufactured with PSE Pork Hams

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The objectives of this study were to develop restructured meat products (RMP) using a transglutaminase and especially to improve the binding capacity of RMP manufactured with abnormal PSE pork hams which were selected based on the pH values 1 hr (pH 1hr <5.5) right after slaughter. The normal and abnormal PSE pork hams were through the cutting machine to make 1 inch-cubes and tumbled with ingredients for 4 hrs including soy protein isolate as a substrate for TGase. The mixed 25kg batches were stuffed into regular fibrous casings (90mm, dia), put into a refrigerator (5-7oC) for 2 hrs for enzyme reaction. Then, chubs were cooked to an internal temperature of 72oC, showered with cold water and moved to a cooler overnight. pH, chemical analysis, water activity (Aw), cooking yield (CY, %), color values (L*, a*, b*), textural hardness, microbial counts and sensory evaluation were determined. The both RMPs had 70-72% moisture, 4-5% fat, 18-20% protein and approximately 3% ash contents. No differences in chemical compositions and hunter color values were observed (P>0.05) between normal and PSE RMPs, except for protein content (%) which were higher in PSE pork RMPs rather than in normal pork counterparts. However, RMPs having PSE pork hams were higher (P<0.05) in drip loss (%) than those with normal pork hams after 10-days of refrigerated storage. Although no differences were observed (P>0.05) in instron hardness and sensory evaluation, RMPs manufactured with PSE pork hams tended to have more pores and less binding capacity in the products than to those with the normal counterpart. These results indicated that the additional substrates or more tumbling time for the manufacture of RMPs containing abnormal PSE porks are required to have similar palatability to those with normal porks.