RESEARCH ABSTRACT

PORK QUALITY

Title: Optimization of Commercial Harvest Processes that Affect Pork Water Holding Capacity and Color - **NPB # 02-032**

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Abstract: The objective of this study was to determine the impact of duration of carcass scalding on pork loin color, water holding capacity and texture. Commercial pigs (n=655) were slaughtered at a commercial processing facility on two days within one week. Three hundred thirty six pigs were harvested and assigned to scald duration treatment groups of 7.6 (n=161) or 5.6 (n=175) min. The procedure was replicated on a separate day (7.6 min scald, n=150; 5.6 min scald, n=169) with the slaughter order of the treatments reversed. As a consequence of a shorter scalding duration, carcasses in the 5.6 min scald treatment entered the cooler 5 min earlier than the 7.6 min scald treatment. Loin temperature and pH were recorded as carcasses entered the cooler, at 2 h and 6 h postmortem. Loins representing each treatment group were selected for meat quality evaluation. Loin quality traits measured at 24 h (n=260) included pH, temperature, color, and drip loss. Purge loss, color, pH, and star probe values were measured on chops aged 5 d postmortem (n=160). The longer duration of scalding resulted in higher loin pH as carcasses entered the cooler ($P< 0.01$), but lower pH at 2 h postmortem ($P <0.01$). Loin pH did not differ between treatments at any other time measured. Treatment did not influence loin temperature at cooler entry or 2 h postmortem. The longer duration of scalding produced pork loins with greater drip loss ($P<0.01$), and higher L* values at 24 h postmortem ($P<0.05$).

At 5 d postmortem, loins from carcasses in the longer scald treatment had higher L* values ($P<0.01$), b* values ($P<0.01$), and greater discoloration as determined by hue angle ($P< 0.05$). Treatment differences for loin a* values, purge, cook-loss, and star probe values were not observed. These data suggest that shortening the duration of scalding, coupled with earlier entry in the cooler, has no detrimental effects on pork quality and may improve pork color and water holding capacity.