

**67 Pork quality of 1980 vs. 2005 pigs when fed 1980 or 2005 feeding programs.**

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The objective of this study was to assess changes over 25 yr in pork quality. Pigs ( $n = 162$ ) representative of the current commercial industry were compared to pigs representative of the commercial industry 25 yr ago. The 1980 genetic sample was produced from dams selected to minimize genetic improvement and frozen semen from boars available in 1980. Pigs within sex, farrowing group, and genetic sample (GS) were randomly assigned to a feeding program (FP) and placed 3 per pen ( $n = 54$ ) at an initial BW of  $7 \pm 0.4$  kg. The 2005 FP included a 7 phase FP (lysine from 1.51 to 0.73% and ME from 3428 to 3651 kcal/kg), pelleted diets, antibiotics and added dietary fat. The 1980 FP consisted of 4 meal diets (lysine from 1.05 to 0.62% and ME from 3262 to 3317 kcal/kg) based on formulations from the 1978 PIH which included no antibiotics or added dietary fat. Pigs were slaughtered on a weekly basis when average BW of pigs in a pen exceeded 116 kg. At slaughter hot carcass weight, carcass length, 45 minute pH and BF at 1st rib, last rib and last lumbar were collected. At 24 h post-mortem 10th rib BF depth and loin muscle area along with L\*, a\*, b\* and ultimate pH on loins and hams were collected. National Pork Board marbling score (1-10), firmness score (1-3), wetness score (1-3) and color score (1-6) were also collected 24 hours post mortem. Percent drip loss, Warner-Bratzler shear force, cooking loss and chemical analysis of lipid content in the loin were collected on later dates. Genetic sample x FP interactions ( $P < 0.05$ ) were observed for visual marbling scores and percent intramuscular fat in the loin muscle where 2005 GS pigs fed the 1980 FP had the highest visual marbling score and most percent intramuscular fat. Both subjective marbling score and percent intramuscular fat in the loin muscle were higher ( $P < 0.01$ ) for pigs from the 2005 GS vs. 1980 GS pigs (2.28 vs. 1.58; 4.83 vs. 3.60%) and pigs fed the 1980 FP vs. 2005 FP (2.29 vs. 1.59; 5.22 vs. 3.21%). Percent drip loss measured on loin muscle samples showed similar results; less ( $P < 0.05$ ) drip loss for 2005 GS vs. 1980 GS pigs (2.51 vs. 3.20%) and pigs fed the 1980 FP vs. 2005 FP (2.52 vs. 3.18 %). Percent of weight lost from loin chops during cooking was less ( $P < 0.05$ ) for 1980 GS vs. 2005 GS pigs (23.72 vs. 25.11%). Ham pH measured 24 hour postmortem was higher (5.86 vs. 5.70;  $P < 0.05$ ) and ham subjective wetness score was more desirable (2.17 vs. 1.73;  $P < 0.05$ ) for pigs fed 1980 FP vs. 2005 FP. Hams from 1980 GS pigs were more (11.29 vs. 10.44;  $P < 0.05$ ) red (a\*) and more (4.37 vs. 3.62;  $P < 0.01$ ) yellow (b\*) than hams from 2005 GS pigs. There tended to be a GS x FP interaction ( $P < 0.10$ ) for Warner-Bratzler shear force test where 2005 GS pigs fed 1980 FP and 1980 GS pigs fed 2005 FP had lower shear force values. No GS or FP differences were observed for loin measures of firmness, wetness, 45 minute pH, L\*, a\* or b\* values. Ham measures of 45 minute pH, color, firmness and L\* did not differ between GS or FP. Over 25 yr genetic improvement appears to have had favorable effects on intramuscular fat and water holding capacity in the loin muscle but increased cooking loss and changed ham a\* and b\* values. Changes in nutrition over the time have resulted in reduced intramuscular fat and water holding capacity of the loin muscle along with increased ham ultimate pH.