



Pork Loin Quality is Not Indicative of Fresh Belly or Fresh and Processed Ham Quality

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Objectives

A key challenge facing the pork industry is the lack of insight on the relationship of pork primal quality. It is uncertain whether pigs that produce high quality loins will also produce high quality hams and bellies. Thus, the objective of this study was to correlate fresh loin quality with fresh belly quality and fresh and processed ham quality.

Materials and Methods

Data were collected on 7,684 pigs (94.50 ± 9.39 kg hot carcass weight) that were housed in 8 different barns. Four barns of pigs ($n = 4,290$) were raised and slaughtered during the cold season and four barns of pigs ($n = 3,394$) were raised and slaughtered during the hot season. Within season, 2 barns of pigs were raised on farms focused on lean growth ($n = 1,491$ in the hot season, $n = 2,136$ in the cold season) and 2 barns of pigs were raised on farms focused on meat quality ($n = 1,903$ in the hot season, $n = 2,154$ in the cold season). A target of 100% of the pigs were evaluated for carcass composition, ham instrumental color, and subjective loin quality. Other loin and belly quality characteristics were evaluated on a target of 50% of the population, and 10% of pigs were targeted for slice shear force (SSF), ham weight, and processed ham characteristics. Temperature decline curves for the *longissimus dorsi* and *semimembranosus* were evaluated on 10% of the population. Pearson correlation coefficients between loin quality and other carcass

quality and composition traits were computed using the CORR procedure of SAS (SAS Inst. Inc., Cary, NC).

Results

Equilibration of ambient temperature to *longissimus dorsi* temperature occurred at 15 h postmortem ($P = 1.00$), yet the *semimembranosus* had not equilibrated with ambient temperature ($P < 0.0001$) at 22 h postmortem. Boneless loin weight was correlated ($P < 0.0001$) with increased HCW ($r = 0.723$), belly weight ($r = 0.476$), 1 d ham weight ($r = 0.706$), and cooked ham weight ($r = 0.648$), but was not correlated with cooked ham yield ($P = 0.68$). Loin ultimate pH (24 h) correlated ($P < 0.0001$) with *semimembranosus* pH ($r = 0.333$), and percent moisture of the ham ($r = 0.153$). Loin L* correlated ($P \leq 0.01$) with L* of the *gluteus profundis* ($r = 0.154$), *gluteus medius* ($r = 0.329$), *semimembranosus* ($r = 0.312$), and cured ham ($r = 0.111$). Loin SSF was correlated with belly flop score ($r = -0.348$; $P < 0.0001$), but not with ham bind strength ($P = 0.94$).

Conclusion

Primal weights were correlated with other primal weights. However, correlations between loin quality and belly and fresh and processed ham quality were weak. Differences in chilling rates between the loin and ham may have contributed to weak relationships. Using loin quality to draw conclusions about fresh belly and fresh and processed ham quality may be misleading. This project was funded, in part, by The Pork Checkoff.