

eny test. The trial started when pigs were approximately 32 kg of BW and finished 84 d later. Before slaughter, pigs were individually released from their holding pen and allowed to walk freely (i.e., no handling involved) until they reached the weighing scale (distance 14 m). Time (s) needed to reach the weighing scale (TS) and body lesions in 11 regions of the pig's body (0 = normal to 5 = severe lesion) were scored as indicators of docility and aggressiveness, respectively. A total body lesion score (TBL) was calculated. Additionally, BW was also recorded. Tenderness, juiciness, and chewiness were scored by a highly trained 3-member professional sensory panel using a 10-point category scale (1 = low degree and 10 = high degree of each characteristic). Pen was considered the experimental unit and data were analyzed using mixed model equations. Models included breed, TBL, and TS as fixed effects. Body weight was included as a linear covariate. Total body lesion score was not a significant source of variation for any of the pork quality traits studied ($P > 0.05$). Pigs with lower TS had greater tenderness scores ($P < 0.05$), but TS had no relationship with either juiciness or chewiness score ($P > 0.05$). Berkshire pigs had greater tenderness scores compared with the other 4 breeds ($P < 0.05$). Berkshire pigs had greater juiciness scores compared with Landrace and Yorkshire pigs ($P < 0.05$). Furthermore, Berkshire pigs had lower chewiness score ($P < 0.05$) compared with Duroc, Landrace, and Yorkshire pigs. Heavier pigs before slaughter had greater tenderness and juiciness scores but lower chewiness scores compared with lighter pigs ($P < 0.05$). Results indicate that temperament indicators such as docility affect some meat quality characteristics. However, other factors such as breed and BW before slaughter had a greater influence in the traits studied.

Key Words: chewiness, juiciness, pig temperament, pork quality, tenderness

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015 Development of equations to predict the influence of floor space on average daily gain, average daily feed intake, and gain-to-feed ratio of finishing pigs. J. R. Flohr^{*}, J. C. Woodworth¹, M. D. Tokach¹, S. S. Dritz¹, J. M. DeRouchey¹, R. D. Goodband¹, *Kansas State University, Manhattan.*

Data from existing literature examining the influence of floor space allowance on the growth of finishing pigs was used to develop prediction equations for ADG, ADFI, and G:F. Two databases were used: the first included information from studies examining the influence of floor space allowance, and the second included the aforementioned papers along with papers examining the impact of floor space after pigs were removed from the pen. The first database included 27, 25, and 25 papers for ADG, ADFI, and G:F, respectively, and the second database contained 30, 28, and 28 papers for ADG, ADFI, and G:F, respectively. The predictor variables tested were floor space (m^2/pig), k (floor space/final BW^{0.67}), initial BW, final BW, feed space (pigs per

feeder hole), water space (pigs per waterer), group size (pigs per pen), gender, floor type, and study length (d). Floor space treatments within each experiment were the experimental unit and random effects of decade, paper within decade, and experiment within paper \times decade interactions were included in the statistical model. A weighted variance term was included in the statistical model to account for heterogeneity of experimental designs and replication across the existing literature. The statistical significance for inclusion of terms in the model was determined at $P < 0.10$. Further evaluation of models with significant terms was then conducted based on the Bayesian information criterion (BIC). Once the ADG and ADFI models for each respective database were determined, then the G:F model was evaluated as the predicted ADG/predicted ADFI. The optimum equations to predict finishing ADG, ADFI, and G:F for the first database were ADG, $g = 395.57 + (15,727 \times k) - (221,705 \times k^2) - (3.6478 \times \text{initial BW, kg}) + (2.209 \times \text{final BW, kg}) + (67.6294 \times k \times \text{initial BW, kg})$; ADFI, $g = 802.07 + (20,121 \times k) - (301,210 \times k^2) - (1.5985 \times \text{initial BW, kg}) + (11.8907 \times \text{final BW, kg}) + (159.79 \times k \times \text{initial BW, kg})$; and G:F = predicted ADG/predicted ADFI. The optimum equations to predict ADG, ADFI, and G:F for the second database were ADG, $g = 337.57 + (16,468 \times k) - (237,350 \times k^2) - (3.1209 \times \text{initial BW, kg}) + (2.569 \times \text{final BW, kg}) + (71.6918 \times k \times \text{initial BW, kg})$; ADFI, $g = 833.41 + (24,785 \times k) - (388,998 \times k^2) - (3.0027 \times \text{initial BW, kg}) + (11.246 \times \text{final BW, kg}) + (187.61 \times k \times \text{initial BW, kg})$; and G:F = predicted ADG/predicted ADFI. All multi-term models improved BIC values compared with single-term predictor models, signifying that multiterm models proved to better fit their respective databases.

Key Words: finishing pigs, models, stocking density

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016 Evaluating the effects of floor space allowance and pig removal from a group on the growth of finishing pigs. J. R. Flohr^{1,*}, J. C. Woodworth¹, M. D. Tokach¹, S. S. Dritz¹, J. M. DeRouchey¹, R. D. Goodband¹, G. Gourley², ¹*Kansas State University, Manhattan*, ²*Gourley Research Group LLC, Webster City, IA.*

A total of 1092 finishing pigs (initially 36.3 ± 1.2 kg BW) were used in a 117-d study to evaluate the impact of initial floor space allowance and removal strategy on the growth of finishing pigs up to 140 kg. There were 4 experimental treatments with 14 pens per treatment. The first treatment stocked pigs at 0.91 m^2 (15 pigs/pen) throughout the duration of the study. The other 3 treatments initially stocked pigs at 0.65 m^2 (21 pigs/pen) and were subject to 1 of 3 removal strategies. The second treatment (2:2:2) removed the 2 heaviest pigs from pens on d 64, 76, and 95. Treatment 3 (2:4) removed the 2 heaviest pigs on d 76 and the 4 heaviest pigs on d 105. Treatment 4 (6) removed the heaviest 6 pigs on d 105. All pigs remaining in pens after removals were fed to d 117. Overall (d 0 to 117), pigs initially provided 0.91 m^2 of floor space