RESEARCH ABSTRACT

ANIMAL WELFARE

Title: Comparison of chute design on the ease of loading finisher pigs. How does this affect their performance, welfare parameters and overall economics to the producer? **– NPB #06-062**

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Scientific Abstract:

Handling and transport losses can encompass several challenges experienced frequently by producers and packers alike. Marketing and transportation stress not only costs the industry due to mortalities, but has direct impact on the quality of pork delivered to the consumer (Barton-Gade, 1992; Geverink et al., 1996; Hambrecht, 2005). The objectives of the current study was to determine if loading system affects welfare parameters for the finisher pig at the time of marketing, incidence of transport losses during transportation or at the packing plant, and pork quality attributes. Two loading systems (prototype loading gantry [P] vs. traditional chute [T]) were compared on the first pigs marketed from a finishing facility (first pull [FP] pigs) and on the last pigs marketed from a finishing facility (closeout [CO] pigs). ***Experiment One:*** Loading system influenced welfare parameters ($P < 0.01$) of both FP and CO pigs at the time of marketing. Pigs loaded on the P chute experienced fewer electric prods, slips, falls, vocalizations, and pile ups, regardless of time of marketing. ***Experiment Two:*** Loading system influenced total losses ($P < 0.03$) in FP pigs. Pigs loaded on the P chute during the FP had fewer total losses. However, all other performance measures at the plant between pulls and loading system design were not different ($P > 0.05$). ***Experiment Three:*** Loading system did influence several meat quality attributes evaluated. In a comparison of FP pigs, loins from pigs loaded with the P loading system had higher ($P < 0.05$) initial and 24 h pH and tended to have higher ($P = 0.08$) JCS cut values, but lower ($P = 0.03$) loin L* values. The higher JSC cut values and lower L* values indicate a darker, redder color meat. Among CO pigs, loins from pigs loaded with the P loading system had higher ($P = 0.01$) 24 h pH and JCS rib values, but lower ($P = 0.06$) L* values. Understanding key factors influencing losses during this time frame enables targeted interventions to improve both welfare and meat quality. This investigation has provided data to support changes in loading system design that may ultimately lead to the improvement of performance, welfare, and pork quality.

These research results were submitted in fulfillment of checkoff-funded research projects. This report is published directly as submitted by the project's principal investigator. This report has not been peer-reviewed.

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