

Public Abstract

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Title:INFLUENCE OF SEASONAL ENVIRONMENT, TOP AND BOTTOM DECK TRANSPORT, TRANSPORT DURATION, AND TIME IN LAIRAGE ON OVERALL PORK QUALITY AND BLOOD SERUM CORTISOL CONCENTRATIONS OF MARKET HOGS

Objectives of this study were to determine effects of seasonal environment, top and bottom deck transport, transport duration, and time in lairage on overall pork quality and blood serum concentrations of the stress hormone cortisol of market hogs. Mixed commercial crossbred market hogs (PIC, Franklin, KY) were harvested at dates representing traditional seasonal environments in the Midwestern United States. Within season, pigs were randomly assigned to one of 6 treatments in a 2 x 2 x 2 factorial arrangement, with two transport durations; short (3 hours) or long (6 hours), two trailer deck locations; top or bottom, and two lairage durations; short (3 hours) or long (6 hours). Blood was collected from each carcass at exsanguination for analysis of serum cortisol concentration. Fresh pork loin quality parameters were evaluated on boneless pork loins for color (L^* , a^* , and b^*), pH, 24h drip loss, and a subsequent determination of pale, soft and exudative (PSE) lean. Least-squares means were generated and tested for least significant difference across all main effects and appropriate interactions for fresh pork quality parameters and serum cortisol concentration. Cortisol levels were the greatest during the summer and fall seasons and interacted significantly ($P < 0.05$) between lairage, deck, and haul. Furthermore, pigs removed from the bottom deck entering short lairage generated 5.28% PSE loins while the pigs that came off the bottom deck into a long lairage generated 2.86% PSE loins.