

Title: Well-Being of Early Weaned Piglets During Transport: Assessment of Seasonal Effects on Performance and Behavior - **NPB #02-166**

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Date Received: January 5, 2004

Abstract: Six groups of forty eight Cotswold piglets were weaned at 17 ± 1 day of age and placed on trial in one of three seasons: summer, winter or fall. Piglets in each group were transported for 6 h, 12 h or 24 h representing short, medium and long journeys. Data collected during and after transport were tested against non-transported (0 h) controls (CONT). During transport, temperature data were collected using a data logger with temperature probes in the air above the piglets, in the bedding and at the shell of the truck. Behavioral data were collected using a video recording system. As in commercial transport, feed and water were not available. Piglet skin and rectal temperatures were recorded at the end of each period of transport. Following transport, piglets were placed in groups of 4, in weaning pens with free choice feed and water. Behavior was recorded for 3 days post transport using a VCR and low light level cameras. Body weights were recorded daily until 7 days post-weaning and again at 14 days post-weaning.

Behavior changed markedly after 12 h of transport. Standing ($P < 0.01$) and sitting ($P < 0.01$) decreased while resting ($P < 0.01$) and fighting increased ($P < 0.05$). The changes in standing ($P < 0.054$) and resting ($P < 0.01$) were most noticeable during winter and fall. Ear and rectal temperatures also began to drop after 12 h of transport ($P < 0.02$).

Behavior of the piglets in the first 3 days post transport showed a strong seasonal pattern. Standing ($P < 0.05$) and resting ($P < 0.05$), were less frequently observed while sitting ($P < 0.01$) and drinking ($P < 0.01$) were more frequently observed in the fall. As transport duration increased, the frequency of standing ($P < 0.01$) decreased while resting ($P < 0.01$) feeding ($P < 0.01$) and drinking ($P < 0.01$) increased post transport. Behavior also changed during the first 3 days after transportation. Standing ($P < 0.01$) and feeding ($P < 0.01$) increased and sitting ($P < 0.01$), resting ($P < 0.01$), drinking ($P < 0.01$) and fighting ($P < 0.01$) decreased with time.

Behavior during transport often indicates the immediate challenges imposed by transport and the coping strategies of the piglets. The cold temperatures during winter transport changed piglet behavior and physiology, encouraging lower levels of activity and decreased ear and rectal temperature. These changes were most apparent after 12 h of transport.

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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Post-transport behavior was also important for determining transport stressors. Behaviors which increase during long transportation, or which are more prevalent in transported than non-transported piglets are usually indicative of higher transport stress. In this study standing was observed less frequently and resting was more common, in transported piglets, indicating fatigue following transport. Feeding was observed more frequently in piglets transported for 12 or 24 h, reflecting an increased motivation to feed and possibly an increase in piglet age at the time of introduction to feed. Transported piglets drank more often due to lack of water availability during transport. Transported piglets, irrespective of duration of transport and season showed some behaviors associated with transport. Standing was less frequently observed while sitting, resting (day 1) and drinking (day 1) were more frequently observed in transported piglets and can be associated with transport stressors.

Season, was found to affect both behavior and performance. Standing was less frequent and sitting more frequent in the fall, which was associated with longer and therefore more stressful transport in this study. Average daily gain post recovery was lowest following winter transport. Most (76 %) piglets less than weaning weight after 7 days were also observed following winter transport, indicative that winter transport, in unheated trucks, was most detrimental to production. Piglets transported during the summer were observed to rest more frequently on day 1 and 2 post transport, indicating that hot summer transport induced fatigue. Transport in all seasons was found to affect behavior while winter transport also affected production. It is important to determine which stressors have the greatest impact in each season and develop strategies to reduce the effects of transport on welfare and production.