

## PIG TAIL POSTURE: A MEASURE OF STRESS

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### SUMMARY

Eight pigs were used to evaluate the affects of environmental stimuli on tail posture. Pigs were exposed to acute stressors and their tail posture was observed. Pig's tails were down for a longer period of time during the heat stress treatment ( $P < .05$ ) and up a longer period of time during familiar person touching ( $P < .05$ ) compared with a control stimuli. Other stimuli (noise, cold, slam door, enter room, unfamiliar touch, control, after) did not influence pigs' tail posture. We conclude that selected stimuli cause changes in pig tail posture, and changes in tail posture may be used to assess certain aspects of pig comfort.

### INTRODUCTION

Tail docking was first practiced because certain pigs bit other pig's tails. Pigs have been studied to determine if they bite tails more or less in different types of housing systems. Pigs in confinement systems seem to bite tails more than in outdoor systems. Management factors such as limited feeder or floor space have not associated with increased tail biting. However, when an episode of tail biting was observed in our past work, we noticed that the affected pigs held their tails in the down posture more often than unaffected pigs. Thus, the objective of this study was to evaluate the tail posture of pigs during periods of acute stress to determine if stress caused a lowering of tails as was observed in pens of pigs during a tail biting episode.

### PROCEDURES

Eight cross-breed nursery pigs (avg. wt. = 12 lb) with intact tails were randomly placed in two groups of four pigs each. The pigs' dams' were Yorkshire x Landrace and the sires were Duroc x Hampshire. Each group was housed in an environmental chamber. The environmental chamber consisted of two pens, each pen measuring 4' x 4'. Pigs were fed a 19% CP sorghum-soybean meal diet ad libitum (NRC). Water was provided by a single nipple waterer. Each pen had a camera which was connected to a VCR. The pigs were video taped during each treatment with a control period 10 min before and ten min after the treatment at a tape speed of 30 frames per second.

Two weeks prior to the start of the experiment,

pigs were fed Oreo cookies by the technician (later called familiar person). This two week acclimation period was used to acclimate the pigs to the person performing the experiment. Pigs were given Oreo cookies once a day throughout the entire experiment to assure acclimation.

Each group of pigs were exposed to all treatments in a random order. The treatments were as follows:

**Familiar touch:** The familiar person entered the chamber and touched the pigs. The pigs were handled and touched on their ears.

**Unfamiliar touch:** A person was unfamiliar to the pigs and who did not have much resemblance to the familiar person was used as an unfamiliar person. The unfamiliar person handled and touched the pigs on their ears as did the familiar person.

**Enter room:** A person would enter the room randomly several times during this treatment. This treatment startled the pigs.

**Slam door:** The familiar person first entering the room then would leave the room while slamming the door.

**Control:** The pigs were maintained at a temperature of 77° F without any human intervention or environmental distraction for a period of 2 h.

**After:** This is a second control period which was examined where the pigs are adjusting back to a control environment after one of the other experiments.

**Cold:** The cold treatment consisted of pigs being exposed to 59° F for 1 h. The chamber changed from 77° F to 59° F in less than 10 min.

**Noise:** Pigs were exposed to a sound blast of a car horn several times. The horn lasted for 2 s and was at an intensity of 100 dB

**Heat:** The heat treatment consisted of pigs being exposed to 95° F for 1 h. The chamber changed from 77° F to 95° F in less than 10 min.

**Down:** The down position of the pigs' tail is represent the tail hanging down in a relaxed state.

**Up:** The up position of the pigs tail represents the tail in the curled position up on it's back.

**Out:** The out position represents the pigs' tail sticking straight out from the body.

**Wag:** The wag position of the tail was represented by the tail in a wagging motion.

## RESULTS

Heat and familiar touch were the only treatments which influenced the tail posture of the pigs. During the control period, pigs spent 55.6% of the time with their tails down and 29.9% of the time up. Compared with the control period, when heat stressed, the tails were down 84.1% and up 3.8% of the time. Familiar touch affected posture in that the tails were up 60.1% and down 24.3% of the time. Tails wagging and sticking straight out were not influenced by any of the treatments. The other treatments did not have any significant effect on tail posture.

Table 1. Percentage of time tails were down, up, out, or wag during each treatment, N = 8 pigs per mean.

Treatment	Down	Up	Out	Wag
Familiar touch	24.3 <sup>c</sup>	60.6 <sup>a</sup>	11.7	3.4
Unfamiliar touch	39.5 <sup>b,c</sup>	42.5 <sup>a,b</sup>	17.0	1.0
Enter room	43.0 <sup>b,c</sup>	29.3 <sup>b,c</sup>	21.1	6.7
Slam door	47.9 <sup>b,c</sup>	30.8 <sup>b,c</sup>	14.9	6.4
Control	55.6 <sup>a,b</sup>	29.9 <sup>b,c</sup>	7.5	7.0
After	56.3 <sup>a,b</sup>	31.9 <sup>b,c</sup>	9.1	2.8
Cold	58.5 <sup>a,b</sup>	30.5 <sup>b,c</sup>	8.9	2.0
Noise	60.2 <sup>a,b</sup>	26.9 <sup>b,c</sup>	9.7	3.2
Heat	84.1 <sup>a</sup>	3.8 <sup>c</sup>	7.6	4.6
Pooled SE	9.83	9.40	5.21	2.56
P-value	.01	.02	.58	.68

<sup>a,b,c</sup> Means with different superscripts within a column differ P < .05.

## DISCUSSION

During periods of severe heat stress pigs tails are down for longer periods of time. Pigs were seen biting tails mostly during the heat stress period. Times when a familiar person enters the room, the pigs tails are up. When pigs were eating, they wagged their tails. Other stressors do not have the effects that heat stress and familiar touch did.

During the control period when the pigs were in a normal situation, they spent 55.6% of the time with their tails down or in a relaxed, neutral position. While they had their tails in the up position only 29.9% of the time. When wagging their tails (7.0% overall), they were either eating or walking around the pen. The out tail position occurred at many different occasions (eating, walking, laying down, etc.).

The "after" treatment had no effect on tail position therefore they recovered quickly from stressors and returned their tail to the neutral position.

During the periods of heat stress, pigs were seen biting each others' tails. In any of the other treatments, there was no tail biting observed. When the tails were being bitten, the posture was in the down position and the pig being bitten was typically lying down.

The "familiar" person had an effect on the position of the tail. The posture of the tail was in the up position for a longer period of time than in any other situation. The unfamiliar person did not seem to have any adverse affect of the posture of the pigs, but the tail was not up as long.

The other stressors did not have the same affect as familiar touch and heat stress. Startling the pigs by slamming the door or the sound blast might have had a brief effect, but it was not shown by these data. Cold stress did not significantly differ from the control period. Therefore stress in general did not cause significant changes in the tail postures.

We do not know enough about how the pigs use tail posture and for purposes such as communication, feelings, etc. However, we do not that certain, selected stimuli cause changes in tail posture. If producers observe changes in tail posture it may indicate changes in pig comfort.