RESEARCH ABSTRACT
ANIMAL WELFARE

**Title:** The use of bedding in ramp to reduce slipping and falling while loading and unloading weaned and finishing pigs – NPB #12-005

**Investigator:** John McGlone[1], Key Graduate Assistant: Arlene Garcia

**Institution:** [1] Laboratory of Animal Behavior, Physiology and Welfare, Department of Animal and Food Sciences, Texas Tech University, Lubbock, TX 79409-2141, USA

**Date Submitted:** 09/18/2014

**Scientific Abstract:**

1. Loading and unloading weaned pigs: effects of bedding types, ramp angle, and bedding moisture

The use of non-slip surfaces during loading and unloading of weaned pigs plays an important role in animal welfare and economics of the pork industry. Currently, the guidelines available only suggest the use of ramps below 20 degrees to load and unload pigs. Three ramp angles (0, 10 or, 20 degrees), 5 bedding materials (no bedding, sand, feed, wood shavings or wheat straw hay), 2 moistures (dry or wet bedding; > 50% moisture) over 2 seasons (> 23.9ºC summer, < 23.9ºC winter) were assessed for slips/falls/vocalizations (N = 6,000 pig observations). "Score" was calculated by the sum of slips, falls, and vocalizations. With the exception of using feed as a bedding, all beddings provided some protection against elevated slips, falls, and vocalizations ($P < 0.01$). Providing bedding reduced scores regardless of whether the bedding was dry or wet ($P < 0.05$). Scores increased as the slope increased ($P < 0.01$). Provision of bedding, other than feed, at slopes greater than zero, decreased slips, falls and vocalizations. Minimizing slips, falls, and vocalizations when loading and unloading pigs improved animal welfare.

2. Loading and unloading finishing pigs: effects of bedding types, ramp angle, and bedding moisture

The use of non-slip surfaces during loading and unloading of finishing pigs plays an important role in animal welfare and economics of the pork industry. Currently, the guidelines available only suggest the use of ramps with a slope below 20 degrees to load and unload pigs. However, the total time it takes to load and unload animals and slips, falls, and vocalizations are a welfare concern. Three ramp angles (0, 10 or, 20 degrees), 5 bedding materials (no bedding, sand, feed, wood shavings or wheat straw hay), 2 moistures (dry or wet bedding; >50% moisture) over 2 seasons (>23.9ºC summer, <23.9ºC winter) were assessed for slips/falls/vocalizations (N = 2,400 pig observations) and analyzed with a scoring system. Heart rate and the total time it took to load and unload the ramp increases as the slope of the ramp increases ($P < 0.05$). The use of bedding during summer or winter played a role in the total time it took to load and unload the ramp ($P < 0.05$). Bedding, bedding moisture, season, and slope significantly impacted the total time to load and unload ($P < 0.05$). The current study suggests that several factors should be considered in combination to identify the appropriate bedding for the specific occasion.