RESEARCH ABSTRACT

ANIMAL WELFARE

Title: Effects of floor space during transport and journey time on transport losses and well-being of market-weight pigs - **NPB #:**08-037

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Date Submitted: April 29, 2010

Scientific Abstract:

The effects of floor space on the trailer and journey time during transport from the farm to the packing plant on physical indicators of stress and on the incidence of transport losses at the plant (i.e., dead on arrival, non-ambulatory injured, and non-ambulatory non-injured) were evaluated in a study involving 160 loads of pigs (BW 124.7 ± 4.38 kg) using a split-plot design with a 2 x 6 factorial arrangement of treatments: 1) Journey Time from the farm to the packing plant (main plot) [short (<1 h) vs. long (3 h)] and 2) Floor Space on the trailer during transport (subplot) (0.396 vs. 0.415 vs. 0.437 vs. 0.462 vs. 0.489 vs. 0.520 m^2/pig). The incidence of dead and non-ambulatory pigs and the percentage of pigs in each test compartment exhibiting physical indicators of stress (open-mouth breathing, muscle tremors, and/or skin discoloration) were recorded after unloading at the plant. Of the total of 17,652 pigs transported in test compartments, 0.24% died or became non-ambulatory during transport or during unloading. There was no effect ($P > 0.05$) of journey time or floor space on total transport losses or on the incidence of dead on arrival and non-ambulatory injured pigs. There was an interaction ($P = 0.05$) between journey time and floor space for the incidence of non-ambulatory non-injured pigs. There was no effect ($P > 0.05$) of journey time for the lowest and the three highest floor space treatments; however, for two of the lower floor space treatments (0.415 and 0.437 m^2/pig), the incidence of non-ambulatory non-injured pigs was greater ($P < 0.05$) for the short than the long journeys.

The effect of floor space on the incidence of open-mouth breathing was dependent on journey time (floor space by journey time treatment interaction; $P < 0.01$). On long journeys, there was no effect ($P > 0.05$) of floor space on the incidence of open-mouth breathing. However, on short journeys, pigs transported at the lowest two floor spaces (0.396 and 0.415 m^2/pig) had a higher incidence ($P < 0.05$) of open-mouth breathing than those transported at the highest three floor spaces (0.462, 0.489, and 0.520 m^2/pig). The frequency of skin discoloration was greater for pigs transported on short than on long journeys (2.08 vs. 1.30%; $P < 0.001$) and also for pigs transported at the two lowest floor spaces (0.396 and 0.415 m^2/pig) compared to the highest three floor spaces (0.462, 0.489 and 0.520 m^2/pig), with the other floor space treatment (0.437 m^2/pig) being intermediate. In summary, short journey time increased the frequency of physical indicators of stress during unloading at the plant for pigs transported at low floor spaces and, also, increased the incidence of non-ambulatory non-injured pigs at two of the three lower floor spaces evaluated. However, neither transport floor space nor journey time had any effect on total transport losses.