
Sponsors

University of Minnesota

College of Veterinary Medicine

College of Food, Agricultural and Natural Resource Sciences

Extension Service

Swine Center

Thank you to **IDEXX Laboratories** for their financial support to reproduce conference proceedings

Production Assistants

Steven Claas

Michael Klatt

Layout and CD-ROM

David Brown

Logo Design

Ruth Cronje, and Jan Swanson;

based on the original design by Dr. Robert Dunlop

The University of Minnesota is committed to the policy that all persons shall have equal access to its programs, facilities, and employment without regard to race, color, creed, religion, national origin, sex, age, marital status, disability, public assistance status, or sexual orientation.

Factors Affecting the Behavior of Early-Weaned Piglets

Tina Widowski, PhD¹ and Stephanie Torrey, PhD²

¹Department of Animal & Poultry Science, University of Guelph, Guelph, ON Canada N1G 2W1

²Agriculture and Agri-food Canada, Dairy & Swine Research Station, Sherbrooke, QC, Canada J1M 1Z3

The behavior of early-weaned piglets is characterized by a delay in feeding, excessive drinking, and the development of oral behavior problems such as belly nosing and navel sucking. Although the specific causes of belly nosing are unknown, it appears to be related to nursing behavior and piglets' desire to suck or massage the udder. The excessive drinking might also be related to nursing motivation, with the piglets using the drinker as a sucking device or ingesting water rather than solid feed because the behavior or physical sensation is more familiar to them. This project involved several experiments aimed at examining the relationships among drinking, suckling and feeding and how they relate to the development of post-weaning behavior problems in early-weaned piglets.

In one experiment, we examined if playback of sow nursing grunts and drinker type in the nursery affected piglet behavior and performance. A total of 352 piglets were weaned at approximately 14 days of age into pens of 8 piglets each. Half of the pens were located in a room in which recorded sow nursing vocalizations were broadcast at hourly intervals while the other half were in an adjacent room without additional sound. Within each of the two rooms, half of the pens were outfitted with bite – style nipple drinkers and the other half with push-lever bowl drinkers (Egebjerg, Drik-o-Mat®). Behavior, feed intake, water usage and weight gains were recorded for three weeks after weaning. The broadcast sow vocalizations had no effect on either piglet behavior or performance. However, drinker type significantly affected behavior, feed intake and water usage. During the first 48 hours after weaning, piglets with nipple drinkers spent significantly more time at the drinker ($P<0.01$), used three times more water ($P<0.01$), and had lower feed intake than piglets provided water bowls ($P<0.03$). Over the course of the trial, piglets with nipple drinkers performed significantly more belly nosing than those

drinking from bowls ($P<0.02$). Although water usage remained over twice as high for piglets with nipple drinkers throughout the trial, there were no overall differences in feed intake or average daily gain.

In two additional experiments, we examined whether nursing behavior of individual piglets on the sow was related to their development of oral behavior problems after weaning. An additional aim was to determine how growth rates were related to piglet behavior. Ninety-five piglets from 16 litters were observed at 4, 7 and 10 days of age for sucking and massage, and then on days 7, 14 and 19 after weaning at 15 days for belly nosing and sucking on pen-mates. Contrary to what was expected, piglets that spent more time suckling the sow tended to spend less time belly nosing ($P<0.10$) or nosing their pen-mates ($P<0.05$) after weaning. Belly nosing tended to be negatively related with post-weaning average daily gain ($P<0.10$). In another experiment, feeding, drinking and nosing behavior were measured in 66 piglets after weaning at 21 days for a more in-depth look at the relationships among pre-weaning and post-weaning growth and behavior of individual piglets. Piglets that belly nosed more post-weaning tended to be smaller at birth ($P<0.10$) and weaning ($P<0.10$) and grew significantly slower after weaning ($P<0.001$). Piglets that spent more time at the feeder spent more time nosing the pen floors than they did nosing their pen-mates, and they were the faster growing pigs before ($P<0.01$) and after ($P<0.01$) weaning.

Results from these experiments suggest that there is an interaction among sucking, feeding and drinking motivation that can affect piglets' adaptation to weaning. The relationships between low birth or weaning weights and the likelihood of developing problems after weaning probably reflect differences in the degree of ingestive system maturation in individual piglets.