

# The Impact of Rubber Mats on the Health, Behavior and Welfare of Group-Housed Sows at Breeding

## A.S. Leaflet R2637

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### Summary and Implications

Lameness and leg injuries are common in the swine industry and are a serious welfare concern. The impact of rubber mats on measures of sow health, behavior and welfare were evaluated during 10 days at breeding. Sows preferred to rest in stalls with mats, showed a reduction in lesions and an increase in postural changes. The provision of rubber mats should be considered to improve sow welfare.

### Introduction

According to the USDA, lameness is the number three reason for culling sows on farm (~15% of sows). Concrete has been associated with hoof lesions in finishing pigs. The high incidence of leg injury in pigs may be an indicator that their flooring comfort needs are not being met in current systems. Lying comfort is an important aspect of swine welfare, as intensively-housed pigs spend ~80% of their day resting. Straw can improve the physical comfort of the floor, but can increase costs and cause difficulties for manure handling systems. Rubber mats offer an inexpensive and simple alternative to straw. When rubber mats were used at farrowing, sows spent more time lying, showed faster lesion healing time, and slipped less when making postural changes. However, the impact of rubber mats on the welfare of group-housed sows is largely unknown and was investigated in this study.

### Materials and Methods

Multiparous Landrace x Yorkshire sows (128) were housed in groups of four in pens with solid concrete feeding stalls (four, 1.8 m x 0.6 m) and a slatted concrete group area (2.2 m x 2.4 m). The control pen remained as described, while the treatment pen had rubber mats (1.8 m x 0.6 m x 1.3 cm) in the stalls.

Health (lesions and lameness) and behavioral measures (resting behavior and frequency of postural changes) were obtained to determine the impact of mats on sow welfare.

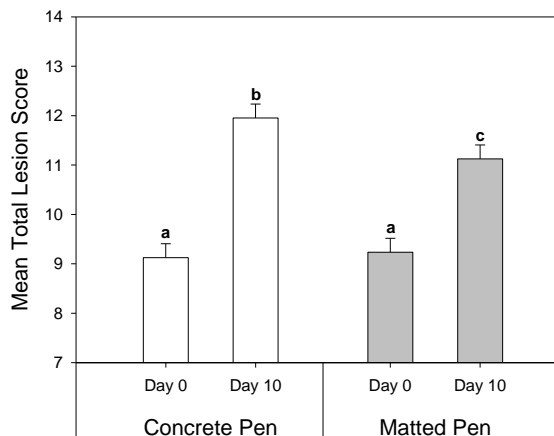
Data were analyzed as an REML and are presented as raw means  $\pm$  S.E.

### Results and Discussion

Resting behavior (i.e. lying, sitting and kneeling) differed by treatment, as sows in concrete pens spent more time resting in the group area ( $66.2\% \pm 4.5$ ), than sows in matted pens ( $42.2\% \pm 6.1$ ;  $P < 0.05$ ). While sows in matted pens spent more time resting in the stalls ( $48.7\% \pm 6.0$ ) than sows in concrete pens ( $23.6\% \pm 4.6$ ;  $P < 0.001$ ). The frequency of postural changes within the stalls was higher for sows on mats ( $98.5 \pm 12.5$ ) versus concrete ( $50.8 \pm 7.5$ ;  $P < 0.001$ ), which may indicate that sows on mats were more willing to change posture due to reduced pain (as observed in dairy cattle) or were better able to change posture due to reduced slipping (as seen in farrowing sows).

Lesion scores at the end of the study (Day 10) were higher than prior to mixing (Day 0) for both treatments ( $P < 0.001$ ). However, sows in matted pens had lower lesion scores on Day 10 compared to sows in concrete pens ( $P < 0.05$ ; Figure 1). Lameness scores showed a similar pattern to lesions, but treatments were not different on Day 10 ( $P > 0.05$ ), which may be due to the short length of this study.

Figure 1. Lesion scores for sows at breeding.



### Acknowledgements

This project was supported by the National Research Initiative of the USDA Cooperative State Research, Education and Extension Service, grant number 2005-35204-15215. Refer to Applied Animal Behaviour Science (123) for complete publication.