

Early detection and interventions for reducing lameness in gestating sows

Jennifer Brown, Ph.D.;
Yolande Seddon, Ph.D.; Fiona Lang, Ph. D.;
Nika Zillman BSA.; Megan Bouvier, BSA.

Background

Sow lameness is the second most common cause of culling after reproductive failure. While good conformation and genetics contribute substantially to reducing lameness in sow herds, hoof problems commonly arise in fully slatted concrete systems. Pressure exerted from the concrete flooring generates a response in the hoof to increase horn growth. Combined with unbalanced weight distribution this can lead to malformations of the foot such as claw overgrowth and heel erosion (Figs 1 – 3).

Hoof abnormalities are perhaps overlooked, but contribute to the development of lameness in sows. Heel and wall cracks provide a route of entry for infection, while overgrown claws increase the risk of injury on slats and can impede sow movement. Hoof abnormalities do not take long

to develop, and on visits to commercial herds a surprising number of low parity sows have been observed with hoof abnormalities.

The discomfort of lameness can cause sows to reduce feed intake, which can result in decreased reproductive and lactation performance. Sows with less stability on their feet (Fig. 4) are also at a greater risk of crushing piglets from lack of control while lying down.

Little research has been conducted on the impact of early intervention and prevention of sow lameness during gestation. Historically, there was little option to treat sows with hoof problems due to the unwillingness of sows to have their feet held. The Zinpro Corporation, Minnesota, USA have now developed the first chute (Fig. 5) to restrain sows allowing hoof trimming to take place, and a range of corrective trimming protocols to prevent and restore correct hoof conformation in sows. The use of corrective claw trimming can be used as a preventative or early treatment option for lame sows, and could significantly increase sow productivity and longevity.

A study being conducted by the Prairie Swine Centre is using the FeetFirst® chute to evaluate



Figure 3. Heel erosion in a low parity sow



Figure 1. Overgrown hind toe and dew claws

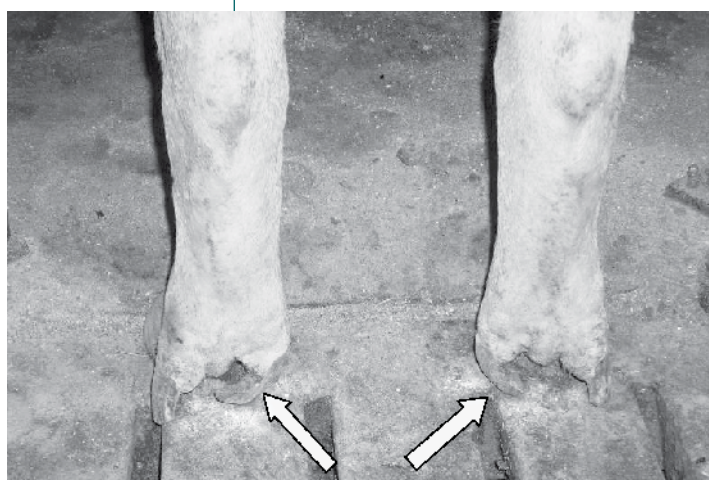


Figure 2. Overgrown and bent over dew claws – risk of injury

the effectiveness of using hoof trimming on non-lame sows to prevent lameness, and as an intervention treatment in lame sows. This the first time the FeetFirst® chute has been used in Canada.

Study design

The project is being carried out at a large commercial sow herd in southern Saskatchewan. Performing the study on a large sow herd will give us the opportunity to evaluate a large number of sows. The project has three objectives which form three stages to the study:

Objective 1 will determine the occurrence and severity of lameness in the sow herd: A detailed survey on the occurrence and severity of sow lameness is being conducted, and will include 50% of the sow herd (approximately 2,500 sows).

Objective 2 will determine the effectiveness of preventative hoof trimming on non-lame sows at preventing lameness and

increasing sow performance. Two hundred non-lame sows will be evaluated for lameness using locomotion scoring as they exit the breeding unit. At 8 weeks post breeding, 100 sows will receive a preventative hoof trim, and 100 sows will be studied for hoof abnormalities but will not be treated (control group).

Objective 3 will evaluate a comprehensive early treatment protocol for lame sows, and will study lameness progression and sow productivity. Three hundred lame sows will be identified upon leaving the breeding unit, and of these 150 will be assigned to treatment group and the remaining 150 sows will act as controls.

The treatment protocol for lame sows takes a novel approach to maximise healing by addressing a number of the problems created by lameness. Sows will be given:

- two courses of an anti-inflammatory drug to reduce inflammation and initiate healing

- a corrective hoof trim to improve foot comfort and treat abnormalities that may be contributing to lameness
- a rubber stall mat to alleviate pressure on joints and feet from the concrete.

The Bottom Line

The results of this study will provide producers with a greater understanding of the prevalence and severity of hoof lesions encountered in commercial sow herds, the impact of lameness on sow productivity and the effectiveness of prevention and treatment regimes that are able to target hoof abnormalities. The experience of operating the FeetFirst® chute in a commercial sow barn will help to evaluate the validity of trimming and determine whether this practice is viable option for producers.

Acknowledgements


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Figure 4. Overgrown dew claw and excessive heel overgrowth can be improved with hoof trimming



Figure 5. Sow Feet First chute by Zinpro® Corporation