
# Early Detection of Lameness in Growing Pigs

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## TAKE HOME MESSAGES:

1. Lameness is a complex diagnosis that has a wide range of subjective classifications.
2. The detection of lameness in growing pigs is important for animal welfare and disease control.
3. Early detection of lameness can improve animal health and decrease euthanasia.

## What is lameness?

Lameness is a diagnosis of abnormal movement and activity. According to Dorland's Illustrated Medical Dictionary, lameness is the "incapability of normal locomotion, deviating from the normal gait." Lameness is often painful while, it reduces the welfare of the animals and reduces profitability for the system owner based on a decrease in growth rate and feed conversion.

Lameness has a wide range of classifications depending on perspective. According to Dr. Kent Schwartz, lameness can be classified by clinical signs, the body system affected, injury type, disease-causing observations, diagnostic findings, the impact of disease, and others, depending on one's perspective. Figures 1 and 2 are examples of a lame and normal pig based on a clinical assessment of posture and eating behavior.

According to an article from Swine Vet Center, a recent case study determined lameness was the number one cause of mortality in the mid-late finishing hogs across a specific production system. Within this production system, lameness has been on an upward trend over the past couple of years.

Dr. Chris Rademacher and his team at Iowa State University found that sow morality has increased significantly between 2015 and 2020. The number of pigs has increased as the amount of available labor has decreased. This study results in a significant decrease in sow mortality due to training the production staff on how to identify at-risk animals early and treat the animals before their problem is beyond intervention.

## Importance of Lameness Detection

Lameness can cause animals to go off feed or progress to non-weight bearing on multiple limbs. Due to these causes, many animals will become a candidate for euthanasia. By detecting lameness early, there is an opportunity for treatment, a greater potential for that treatment success, and a decrease in euthanasia candidates. Figures 3 and 4 are examples of euthanasia candidates due to lameness. Figure 3 is a pig with a body condition score of 1 due to right hind lameness and going off feed. Figure 4 is an animal with a front limb that is non-weight bearing.

Early Lameness detection is critical to the health and welfare of swine production systems. Early detection and treatment are needed to prevent economic losses and welfare concerns. Lameness costs include an increase in labor, medication, loss of productive animals, and an overall increase in the cost of production.

According to Azarpajouh, the estimated cost of lameness in the US swine industry is 230 million dollars annually. The early detection of lameness will improve the welfare of the animal and create fewer amounts of euthanasia candidates, which will improve the work environment for the staff and increase the production benefit.

Figure 1. Lame pig based on clinical observation. Swine Medicine Education Center.

Example of a LAME pig:
-Swollen back leg
-Non-weight bearing
-Treatment indication

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Figure 2. Normal pig based on clinical observation. Swine Medicine Education Center.

Example of a HEALTHY pig:
-Bright, alert, and responsive
-Body condition score of 3
-No physical abnormalities

Table 1. Lameness scoring table adapted from Nalon et. al.

| | | |
|---|---|---|
| ***Perfect Gait*** | | |
| **0** | Even Stride | Ease of movement.<br>Comfortable on all feet. |
| **1** | Uneven Stride | Movements not fluid.<br>Still moves easily. |
| **2** | Shortened Stride | Lame in one leg, limping. |
| **3** | Reluctant To Walk | Unwilling to put weight on the affected limb.<br>Lame in more than one leg.<br>Back-end swagger. |
| **4** | Does Not Walk | Does not place the affected limb on the floor.<br>Very unwilling to walk. |
| ***Downer Pig*** | | |

## How to detect lameness in growing pigs?

Clinical assessment is the most important observation when detecting lameness. Walking each pen and looking for observable behaviors such as posture, activity, eating, and abnormal social interactions are important daily tasks. Daily routines should include observing all pigs within their pens and analyzing their mobility and ability to move freely without pain. Injury causes pigs to stand, sit, and react differently to social interactions.

An important consideration during a clinical assessment is the prevalence or percentage of animals affected. This assists with understanding the severity of the lameness problem and begins to narrow down the cause. If multiple animals are infected, we consider infectious disease, nutritional imbalances, or a possible structural difference in the pen that could be harming the animals. If only one animal is clinically affected, we consider individual injury or infection.

Dr. Darin Madson states, "Grow-finish lameness is frustrating to diagnose because of the complexity of multiple noninfectious and infectious associations that are sometimes confounding." This has become a problem that production systems see routinely and is a reason for a lameness scoring system or protocol. Table 1 is a commonly used example of a lameness scoring system adapted from the manuscript by Nalon et al.. The authors explain how lameness can be described as a welfare indicator and can be associated with an increasing economic loss in both the removal of animals and the treatment of animals.

Figure 3. Euthanasia candidate with a body condition score of 1 due to right hind lameness and going off feed. (Swine Medicine Education Center).

Figure 4. Euthanasia candidate with a front limb that is non-weight bearing. (Swine Medicine Education Center).

REVIEWER: Dr. Laura Greiner

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