

Sow Welfare Fact Sheet



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Sow Lameness and Longevity

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Current Challenge: Data from 2008 indicate that the total annual culling and death rate for sows and gilts is 45.7 and 8.3 percent respectively. The average parity at culling is 3 (approximately 23 months of age) with 50-69% of sows being culled by parity 4. Fifteen percent of the sows culled between January and June of 2006 were due to lameness. The three main reasons for culling from the herd are age (36.6%), reproductive failure (26.3%), and lameness (15.2%). Young sows may be at a higher risk of locomotor problems due to slight nutritional problems, poor conformation, management, and the environment. The occurrence of culling for locomotor problems decreases with sow age, possibly because unsound sows have already been removed from the herd. Reproducing females are the most valuable animals in the herd. The length of a sow's reproductive life influences many economic factors such as cost per pig sold and profit per sow. Decreasing the replacement rate of productive females increases returns by decreasing sow replacement costs and increasing sow output. Increasing sow longevity will increase the size and weight of litters, decrease non-productive days, increase sow salvage value and decrease replacement costs. Estimates of economic loss, calculated in 1989, due to lameness in the United States was over \$24 million. Of major importance is that concern for sow welfare is paramount, because sows that are culled due to lameness likely are in a state of poor welfare prior to the time at which they are removed from the herd.

Causes of Lameness: Conditions that may be responsible for locomotor problems include osteochondrosis, osteoarthritis, arthritis (3 diseases related to cartilage integrity problems), leg weakness, foot rot, foot and leg injuries, and fractures. Osteochondrosis and foot lesions were found to be the primary causes for culling of growing and breeding age swine. Osteomalacia and osteoporosis are more commonly found in gilts and parity 1

sows. Older sows are more prone to foot problems than younger sows, likely due to increased time on rough or improper flooring. Several different factors are considered to be responsible for causing the various presentations of lameness. Housing systems can influence the amount of physical trauma to the body and the feet. For example, group-housed sows tend to have more injuries and stall-housed sows tend to have more joint, foot, and leg problems. Another factor that affects lameness is the type of feeding system. Longevity has been shown to be shorter and incidence of injuries higher for sows fed individually with electronic sow feeders (3.0 parities) than sows fed as a group in individual feeding stalls (3.9 parities). Genetic selection has also been identified as a major catalyst of lameness due to selectively breeding for desirable production traits while not attending to causes of lameness. For example, low levels of back fat have been associated with leg weakness problems. Research in our laboratory has shown that, stall-housed parity 1 sows already have negative effects on their musculo-skeletal system, in particular, the condition of the articular cartilage and hooves.

Recommendations: Every housing system poses its unique set of challenges when managing the herd to reduce lameness. Slatted-floor systems which have inappropriate widths need to be eliminated. A flooring material which is resilient to the activity of the sow, yet yielding enough to relieve strain on the sow would help to decrease lameness. The interaction between genetics and nutrition, relative to osteochondrosis, osteoarthritis, and osteomalacia needs to be fully understood. Genetic selection against these diseases, while keeping productivity stable, will help decrease lameness over the long run. It is important to remember that skeletal adaptations occur in young animals, indicating that the best time for prevention of musculo-skeletal problems is early in development.

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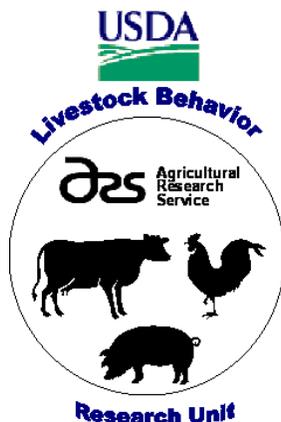
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