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# Managing lameness in sows

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When we look at lameness, particularly in sow herds, it is surprising how little emphasis has been placed on diagnosis and control. The central problem is that it is under-measured, and when it is measured it is measured at the wrong time. Most often we see a diagnosis of lameness at exit from the herd, however, we do not know when that lameness started nor do we then know what effect that lameness had upon the sow. Without that information we cannot evaluate the cost of lameness to the herd and sow and therefore justifications for interventions are usually impossible.

Conversely, there is a general unease when discussing this subject. We have seen the effects of lameness in herds when it is shown to the outside world, either through videotapes of lame and downer sows, both when euthanized and not euthanized. We have also seen evidence of concern about the delivery of lame sows to slaughter plants. However, we should also recognize the frustration of working with lame sows. Treatment protocols are often limited and indications of level of lameness associated with treatment are often nonexistent. Moreover, the effect of lameness upon productivity has often not been considered. Yet it is likely that the effects can be profound, not only upon reproductive parameters, but upon the survivability and quality of piglets at weaning.

Added to these problems is the simple fact that this is a complex disease. Single agent diseases such as PCVAD are in many ways easier to address if the agent can be controlled. Moreover, there is an entrepreneurial attraction to single agent diseases as control measures such as vaccines can be identified and marketed. There is no evidence, and there is much to the contrary, to suggest that there are multiple interacting factors that need to be considered in the control and treatment of lameness. These factors can vary from farm to farm and region to region and thus control measures need to be contextualized within farm in many cases.

## To address lameness we have identified three major factors to be considered:

### 1. Evaluation

When a sow becomes lame, it is important to understand what effects this disease has upon the sow, its economic output, and its effect upon the farm. The most common

problem attributed to lameness is a reduction in the sows life time within the herd. The cost of replacement has often been considered to be quite low, and the function of the ratio of the value of culled sows versus incoming gilts has been a major consideration. We have seen that lame sows are increasingly being discounted when sent to market and therefore this ratio is increasing.

What is often not considered is the loss in productivity associated with lameness. This occurs with lameness and has an effect upon the reproductive capability of the sow or its ability to nurture robust piglets to weaning. These effects of lameness are often underestimated as they are unmeasured. Moreover, there is often a generalized assumption that lame sows are rapidly removed from the herd, and thus lameness has a relatively low effect upon herd productivity. This assumption of lack of effect is untrue. Lame sows are consistently retained in the herd, either due to pressures of meeting breeding target or due to inaccurate assessment of lameness. Secondly, the effect of lameness is to significantly reduce the productivity of the sow. This effect upon productivity is at a level that we have not seen with other potential predictors of subsequent performance.

Moreover, the effect of lameness upon the sow reaches more deeply into the productivity of the sow farm than we can simply model by studying the sow. First of all, lameness decreases the productive inventory in a sow herd by creating more of what we call open sows space days. Low culling for lameness can often improve pigs per sow per year; this culling is only productive for the sow unit if there is an immediate replacement of that culled sow with another productive animal. This is often not the case, and we see empty nonproductive capacity days associated with culling.

We must also recognize the frustrations that can be associated with lame and downer sows. It is an obvious welfare concern as it usually involves a painful condition. It has been portrayed harshly in exposés of sow farms, and it is a frustrating disease for employees to manage. The inherent costs what we have here are difficult to define in a cogent manner. What we must do is provide methods of communication, not only of putative therapeutic methods, but also of generalized costs to the system.

## **2. Measurement**

In almost all sow herds, when asked for a measurement of lameness we simply find a record of estimated causes for culling. Though this may be useful, it cannot allow us to study the effects of lameness. A basic tenet of epidemiology is to have the effect followed the cause. Too often we try to attribute prior events to a diagnosis that occurred after the event. We must turn this around to be able to adequately understand the full extent of the disease. In our limited studies we have found that measurement of lameness on a regular basis, usually done at the time of movement from the stall to the farrowing crate predicts a profound difference in survivability and subsequent productivity. In a recent study the cumulative pigs produced subsequent to a lameness diagnosis is approximately 42% less over the following year. Regular measurement of lameness appears to be more predictive than any productivity variable that we find on the sow card, and records of such conditions in the sows should be a regular part of analysis.

Measurement of lameness can go beyond simply looking at gait to include analyses of lesions that can be contributing to lameness. Of particular interest to us are claw lesions. We have found correlations, particularly with wall cracks, white line lesions and heel erosions.

## **3. Intervention**

Factors involved in creating and exacerbating lame sows are currently limited and often based on application of findings from other species. Since measurement has been limited, there are few databases to understand the pathways of the development of lameness in specific herds. Moreover, the likelihood of retention of lame sows varies between herds and seasonally. The first step is to identify palliative treatment for those sows that are discovered to be lame. This is important particularly in the farrowing

crate where lameness can have significant effects upon lactation feed intake and compromised future viability. Palliative care should also be viewed in conjunction with treatment. In many cases lameness without palliative care results in an exacerbation of the case, often by extending into other limbs due to unequal weight bearing. We must also recognize that healing can only occur when the factors are eliminated.

## **Summary**

When these three major factors are brought together we end up with a whole new set of emphases in the sow herd. Longevity is an outcome of concern, but it must be recognized as having significant contributions to the stability of output as well as the quality of the output of the sow herd. Decreases in productivity, especially when considered as productivity of the sow unit, rather than the current inventory, is also important. Lameness can be identified as a loss of two or three pigs per sow space per year. Finally, a reduction in lameness increases the comfort level of sows and allows greater latitude for care.

