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Management tools to assist in monitoring feed use at sow farms

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Introduction

Achieving production potential in today’s highly prolific sow may be limited by proper execution and control of the herd feeding program. Higher demands due to litter size and milk production along with selection for leaner genotypes have undoubtedly resulted in increased sensitivity to proper nutrition. Failure to minimize weight fluctuations throughout the reproductive cycle can be the culprit of persistent production losses.

While one goal of the gestation phase is to rebuild body stores stripped away during the heavy demands of lactation, feeding high levels of energy in gestation has actually been shown to reduce feed intake in the subsequent lactation resulting in increased sow weight loss (Coffey et al., 1994; Weldon et al., 1994) and excessive loss of backfat (Hoppe et al., 1989). Thus, over-conditioning during the gestation phase begins a downward spiral of farrowing complications and low farrowing feed intake followed by loss of both fat and lean tissue, an extended wean to service interval and reduced subsequent litter size (Eissen et al., 2003). Other telling signs of over-conditioning would include reduced reproductive longevity due to farrowing difficulty and stress, a high incidence of piglet lay-ons, and high herd feed costs.

Similarly, failure to rebuild and maintain adequate stores of fat and lean body mass throughout the reproductive cycle will result in premature removal from the herd. Under-conditioning sows can be the source of sow mortalities, premature culling, failure to recycle, and lower conception rates.

A high producing, highly efficient herd comes as a result of carefully balancing these production concerns. Proper body condition management takes uncommon commitment and consistent execution from management-level staff. The purpose of this paper is to outline practical application tools used on our farms to accomplish this goal.

Establishing a complete program

Synergy of several basic, but vital, elements is necessary for satisfactory management of the herd feeding program. Without any one of these elements, the program is subject to slip or even fail.

Body conditioning protocols

Initiating a working protocol for feeding gestating sows poses some interesting challenges. For starters, everyone on the team must have the same goals and objectives. If you ask 10 people how to feed a sow or what a properly conditioned sow looks like, you will undoubtedly get 10 different answers. One or two key staff members must clearly be given the task of developing and evaluating the protocol.

It is also important that everyone at the barn level understands the importance of the conditioning program and how it will be accomplished. For this reason, the protocol must be kept simple with seemingly low labor input. For example, whether the program is based on visual scores or ultrasound measurements, a program with no more than 3 scoring categories is much more likely to succeed. More is not necessarily better. Overachievers will naturally challenge this part of the protocol.

Keep in mind that the sow is not in a static environment. Many things are changing both biologically and environmentally throughout the gestating phase of her life cycle. For this reason, a successful conditioning protocol will allow for repeated review of how she is responding to her feeding level. It is not uncommon to score every sow every 30 days, in other words 3 groups of sows every week.

Execution, execution, execution

Commitment and consistency in implementing procedures will produce results. A good way to be sure that the protocols are executed is to have the same person accountable to do the conditioning on the same day of every week.

Budgeting

Herd feed usage can then become quite predictable, which is beneficial in setting and tracking annual goals for the quantity and cost of the inputs. It is helpful if everyone on the team can frequently review a financial report that compares the budget for feed expense to actual expense so that an action plan can be created for variances.

Measuring monthly feed delivery

Here again, simple is best. Distributing a monthly report in graphical form to all production and management staff can yield tremendous results. This practice allows timely
discovery of variances from protocols or other failures at the barn level. It also allows for open and frequent dialog between management and production staff.

Timely intervention
The monthly feed usage reports can be used like a critical control chart. Once one establishes a target range, then average feed intakes above or below those parameters will trigger an investigation into the change needed at the farm level to bring feed usage back under control. Although the importance of gestation feed intake has been emphasized, this step is critical for both gestation and lactation feed usage.

Quantifying results
Tracking feed delivery
Although, at first glance, the elements outlined above appear to be basic, many producers have not effectively put these practices into place or have denied their importance.

In late 2002, feed usage for a large sow system was analyzed on a per crate day basis to determine what some of the farms within the system were doing that was different from others. In the process, it was discovered that the average feed intake per crate day for 2002 was running high on all farms and varied among farms by more than .5 pound per crate day. At that point, new procedures to track feed usage in a more timely and frequent manner were implemented. The results in this case were quite dramatic. In comparing a rough analysis of feed usage in 2002 and 2003, the feed savings in gestation amounted to roughly .79 pounds per crate per day. With 18,200 crates, the feed cost savings was well over $300,000.

Looking at 2003 more closely, now adjusted for fluctuations in sow inventory (Figure 1), gestation feed delivered for the System was reduced by 22.8%, while lactation feed delivered went up linearly and dramatically. Production improvements followed.

Troubleshooting
Following the reports monthly in this graphical form has been a good tool to identify potential failures before they greatly impact production. For example, in Figure 2, investigation into the drop in lactation feed delivery in period 2 (p.2) revealed a recent unsuccessful change in procedures on that particular farm.

Frequent and consistent monitoring of feed deliveries has also given insight into potential differences in the amount of feed to target for different genetic lines. In figure 3 you will note the difference in feed delivery between two farms, one with an F1 female and the other with an F2 female. Body conditioning protocols on these two farms were the same and were monitored regularly by management staff.

Conclusions
Providing the proper nutrition to support production should be a priority. A complete nutrition program includes not only the right diets but also execution of feeding protocols and tools to monitor its success.

References


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