TECHNICAL ARTICLE

Question:

What will improve your sows’ profitability?

As you know, the success of your swine business depends on the summation of numerous factors and paying attention to the details. When it comes to nutrition and feeding of breeding herds, it is the same story. Highly prolific female lines are pushing production standards higher and constantly bring new challenges to sow longevity and the quality of piglets at birth and weaning. All these elements have been considered in the development of the new Shur-Gain/Landmark sow feeding program. Every detail counts in order to succeed in our mission of ensuring nutrition is not limiting your breeding herd’s productivity while keeping cost of production as low as possible and reducing any negative environmental impacts. We are committed to our “mission” by helping you solve your problems by looking at the issues from many different angles.

Energy, the most important and costly nutrient, is better utilized by sows

Compared to growing pigs, sows have a greater digestive capacity. They benefit from a larger intestinal tract, especially the colon, and therefore have a greater capacity for fermentation. Sows are able to utilize feed ingredients more efficiently than growing pigs and particularly the dietary fibre fraction. Examples of these differences in digestibility are summarized in Table 1.

Table 1. Nutrients digestibility (%) for sows vs growing pigs

<table>
<thead>
<tr>
<th>Nutrient</th>
<th>Growing pigs</th>
<th>Dry sows</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organic matter</td>
<td>82.0</td>
<td>86.4</td>
</tr>
<tr>
<td>Crude fibre</td>
<td>38.2</td>
<td>54.0</td>
</tr>
<tr>
<td>Energy</td>
<td>75.5</td>
<td>81.0</td>
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</tbody>
</table>

How can this improved digestibility capacity of the sow be utilized to your advantage as well as the environment? Shur-Gain has created a new energy metric in our formulation program called the Effective Energy for sows. This energy value incorporates the increased digestibility of the fibrous fraction of each ingredient. In this system, proteins of animal origin as well as fats and oils which actually do not contain plant fiber are unaffected. However, all plant feedstuffs, and especially those high in fibre, have the greater potential to provide available energy to the sow. In practice, this new energy system for sows enables us to formulate sow diets at a lower cost by giving greater nutritional value to high fibre ingredients. With current feed prices this could translate into $1.45/sow/year saving on feed cost, a small detail that counts!

Dry sow requirements calculated with precision

Often overlooked if not neglected, is the management of dry sow feeding and yet it represents about 70% of all the feed required by a breeding herd and therefore most of the feed bill and the largest environmental impact factor. Moreover, we know that underfeeding and, even worse, overfeeding can have deleterious effects on the subsequent reproductive cycles. With the goal of building precise feeding allowance recommendation for dry sows, we have developed a dry sow feeding model. This tool will help our Swine Nutrition Advisors and Swine Nutritionist to formulate tailor made dry sow feeding programs based on the following inputs:

- Live weight (actual or estimate) and back-fat depth at weaning
- Gestation weight gain and fat depth at farrowing (these targets could be genetic line specific)
- Litter size and birth weight of piglets
- Dry sow housing (pens or crates)
- Room temperature
- The energy density of dry sow feed
- The feed management applied to your barn (reconditioning period in early gestation and timing of increase feed allowance at end of gestation)

This would appear to be a lot of detail but it is necessary if we want to properly manage this vital stage of production with important economic, environmental and technical impacts. This new approach has taken a number of years to develop and validate but in connection with our new Effective Energy system for sows we can fulfill our mission to provide technologies that will work for you in your commercial operation. For example, in the case of gestation overfeeding which is a common problem, applying our program leads to improved lactation feed intake and a reduced annual sow...
feed cost. Sometimes, total feed required/sow/year is reduced by 40 kg. If underfeeding is the problem, then it is the quality of the litter at weaning which can be improved as well as the body condition of the sow. In some cases, we have observed an improved weaning weight of 0.5 kg/piglet. These details count for the profitability and sustainability of your swine business!

**Lactation and its challenges**

We also have looked at the best ways to fill the complex requirements of lactating sows. We have updated and validated our nutrient specifications including energy and amino-acid density of lactation diets, and we have studied different lactation feeding curves. Our lactation feeds are well balanced to maximize feed intake during lactation and address production challenges of high prolificacy sows. If intakes are low, it may be necessary to “Top-Dress”, ensuring an adequate supply of essential nutrients during lactation (e.g. amino acids and functional nutrients). Based on our R&D trials we will be introducing a new lactation sow top-dress, which could improve wean-to-estrus interval and litter growth rate in cases where sow lactation intakes are low.

**Element24, still inside!**

In early 2010, we introduced a new nutritional technology which affects sow metabolism by improving glucose (main source of energy) utilization. **Element24** remains in our new program because it is a detail that counts. A feeding program that supports glucose utilization sustains sow productivity and also improves sow longevity. [Lindemann, 2011]. Remember, when adding Element24 to the sow nutrition program we observed in 95% of situations a saving of 0.53$ or more per piglet cost of production, on average the saving was 1.51$/pig which is worthwhile.

**And there is more...**

Our innovation and sustainability efforts continue to thrive as we search for alternative solutions to the problems pork producers face every day. One of our key research areas is the improvement of piglet viability by feeding functional nutrients at strategic phases during the sow’s reproductive cycle. Currently there are a number of studies underway on both sides of the Atlantic. So stay tuned!

We also are working on new ways to reduce the cost of production, an important contributor to farming sustainability.

We’ll keep you informed as part of our goal to contribute to the success of your swine business through our innovations. “**Every detail counts**” and our new sow feeding program “**Mission**” is part of the toolbox available to reach this goal.

To find out more, contact your Swine Nutrition Advisor or the Shur-Gain Swine Centre of Excellence in your neighbourhood. 😊