Grasping at Straw to Boost Sow Milk Yield

By Geoff Geddes, for Swine Innovation Porc

As some kids learn the hard way on Halloween, you can get too much of a good thing. The same can't be said for piglets when it comes to milk during weaning. It seems the more they get, the more they grow, which has made increasing sow milk yield a growing area of interest for researchers. That was the focus of the project "Increasing sow milk yield and piglet growth via low cost feeding and management strategies."

Satisfied?

"Part of the impetus for this study is the potential for aggression with group housing in the gestation barn," said Dr. Denise Beaulieu, Assistant Professor - Monogastric Nutrition in the Department of Animal and Poultry Science at the College of Agriculture and BioResources. "If sows are hungry during the day, they can become restless and move around looking for food, leading to conflict. Anything that improves their feeling of satiety can help prevent this and enhance animal welfare."

Researchers thus investigated a process that could potentially do two things at once: reduce aggression and maintain optimum production in gestating sows. They investigated whether processing straw into feed can improve its satiating effect by altering its fibre content and structure.

Top: Straw 'briquette' maker. Bottom: Straw pucks. Photos: University of Saskatchewan

"Past studies have shown that feeding pigs straw can help them feel full, and that insoluble fiber like the kind found in oat straw has a greater effect than the insoluble fiber contained by wheat straw. We wanted to see if, through processing straw vigorously, we could change the solubility of it and increase symptoms of satiety."

Digesting the results

Through initial in vitro studies in the lab and work with larger growing pigs, they found that processing improved energy digestibility from the straw, and more so with oat straw versus wheat straw. After feeding pigs typical gestation diets and top dressing the diets with about 10 per cent straw, they looked at a number of reproductive parameters such as number of pigs born and piglet growth rate, as well as blood metabolism levels that indicate satiety.

“We found some effect of straw on digestibility, especially with oat straw, and glucose levels were sustained longer in the body with oat straw, which we assume would be a signal of satiety to the animal. It’s similar to humans where your blood glucose drops and it signals your body to eat.”

Worth the weight

While they found no effect from the straw on the parameters of “born alive” and “still born”, there was an improvement in weaning weights with processed oat straw, most likely due to increased milk production.

“Sow lactation feed intake was higher with oat straw than wheat straw. That’s a key finding, as it means lactation feed intake increased just after farrowing when it’s important for the sow to start eating.”

The finding of a positive effect from oat straw, and perhaps some benefit from processing that straw, is something producers can act on quite easily to reap the rewards.

KISS (Keep it Simple Sows)

“It could just be a matter of having some ground oat straw available to sows in the last part of gestation. They may not all eat it, but it should benefit those who do. Encouraging sows to eat post-farrowing is always a good idea. I like to think we are improving sow lactation, and anything that improves milk production for sows is a win. This is something that’s practical and can be done cheaply.”

As a nutritionist, Dr. Beaulieu would also like to figure out why one type of straw works better for these purposes than others.

In the meantime, kids will continue to overeat at Halloween; but if researchers can maintain their progress on the tricky subject of milk yield, producers may be in for a treat.

For more information….

For more information about the work described in this article, please contact Dr. Denise Beaulieu at : denise.beaulieu@usask.ca.

You may find additional resources related to the project *Increasing sow milk yield and piglet growth via low-cost feeding and management strategies during gestation and/or lactation* by consulting our website:

www.swineinnovationporc.ca/research-animal-nutrition

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