Boosting piglet health with RFCs

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Getting piglets off to a great start is the key to long-term success. Of course, proper nutrition is one of the most important building blocks to swine health and productivity. For instance, research has shown that the Refined Functional Carbohydrates (RFC) in Celmanax act in synergy to enhance gut health and consistently help improve piglet performance. This unique feed additive is designed to improve overall health, growth and feed conversion in swine and other livestock and poultry species.

RFCs are the components harvested from yeast cells (S. cerevisiae) using specific enzymes during a proprietary manufacturing process. This enzymatic hydrolysis yields:

- MOS (Mannan Oligosaccharides).
- Beta 1.3-1.6 glucans.
- D-Mannose.

These compounds are naturally present in all yeast cells, but are not readily bioavailable. The method of processing used to refine the yeast cells influences the size and structure of these liberated components, which, in turn, affects bioavailability and functionality.

RESEARCH RESULTS

Data shows that the inclusion of Celmanax in gestation, lactation and nursery diets increased average piglet birth weight by 180 grams ($P<0.05$). This increase translated to:

- 780 grams ($P<0.05$) at weaning.
- 1,260 grams ($P<0.01$) by the end of the nursery phase.

Ultimately, the research found that supplementation of Celmanax in diets for sows and nursery pigs can result in heavier pigs through the end of the nursery phase. This can contribute to pigs requiring fewer days to reach slaughter weight, resulting in improved profitability.

STARTER DIETS BENEFIT, TOO

A trial conducted at a private U.S. research centre shows further benefits of Celmanax in swine starter diets. The trial was conducted in a high health research nursery barn. Pigs were not stressed, had good health and mortality was very low. Weaned pigs between 17 and 22 days old were randomly assigned to one of two treatment groups. There were 16 pigs per pen with six pens per treatment. Control and treatment groups were fed the same diet containing antibiotic, but the treatment group diet was supplemented with Celmanax. Results show:

- Pigs supplemented with Celmanax had improved average daily gain ($P<0.06$), and average daily feed intake ($P<0.05$) across the entire treatment period (days 0-28).
- Overall, Celmanax helped to improve animal performance when added to the starter diet.

References are available on request.

Table 1. Average daily gain and average daily feed intake in nursery pigs.

0-28 DAYS	CONTROL	CELMANAX	*P*-VALUE
Average daily gain (lb)	0.73	0.78	0.06
Average daily feed intake (lb)	0.99	1.08	<0.05
Feed/gain	1.36	1.38	NS

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RFCs help strengthen piglet immunity

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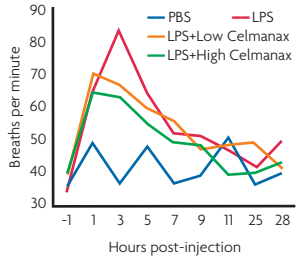
The tie between nutrition and healthy piglets with well-functioning immune systems cannot be emphasised enough. Researchers at Kansas State University note that studies have shown that increased feed intake in the postweaning period will increase nursery growth rate, but also that this weight advantage is maintained and in some instances increased in the finishing phase compared with pigs with poor feed intake after weaning. Further, studies also show that increased feed intake will dramatically reduce the risk of enteric disease in the nursery phase.

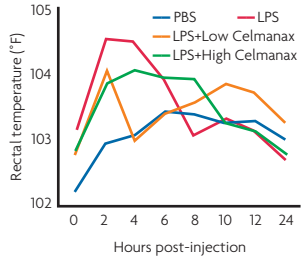
RESEARCH RESULTS

To illustrate this point about health and nutrition, take a look at these results from an Arm & Hammer trial conducted to evaluate the effect of the Refined Functional Carbohydrates (RFC) found in Celmanax on performance, health and immune response in young pigs faced with a simulated immune challenge. This unique feed additive is designed to improve overall health, growth and feed conversion in swine and other livestock and poultry species. RFCs are the components harvested from yeast cells (S. cerevisiae) using specific enzymes during a proprietary manufacturing process. This enzymatic hydrolysis yields MOS (Mannan Oligosaccharides), Beta 1.3-1.6 glucans and D-Mannose. After the four-week growth performance evaluation period of the trial, one barrow and one gilt from each treatment pen received 5ml phosphate buffered saline (PBS) or lipopolysaccharide (LPS) at a rate of 50µg/kg suspended in PBS to assess immune competence.

RESULTS

- Respiratory rate of pigs that received LPS was higher than those that received PBS at three hours post treatment. It decreased linearly with increased inclusion of Celmanax (P<0.01, below left).
- Pigs fed Celmanax had lower rectal temperatures than LPS control pigs at two hours post-injection (P=0.03, below right).





This leads to the conclusion that compared to the LPS-challenged pigs in the control group, pigs supplemented with Celmanax had lower temperature and respiratory rate during the first four hours post-challenge. These results imply that Celmanax may positively influence immune function to benefit weaned pigs during an immune challenge.

MORE RESULTS

Further research examined the ability of RFCs to agglutinate, or adhere, to bacteria and render them ineffective. Laboratory tests show that Celmanax agglutinated E. coli at all the concentrations examined. Additionally, Celmanax decreased the unagglutinated E. coli F18 population by more than 50% in an in vitro study. The decrease in unagglutinated E. coli cells with Celmanax was found to be statistically significant at P<0.01 when compared to the control. Given these results, it is easy to see that the RFCs in Celmanax offer an important nutritional solution that helps support animal immunity and positively influences piglet health.

References are available on request.

To learn more, visit www.AHanimalnutrition.com

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