EGF Helps Piglets Get Growing

By Geoff Geddes, for Swine Innovation Porc

While the fable about the tortoise and the hare proved that a fast start isn't everything, it sure helps. That's especially true in the pork industry, as margins are razor thin and any edge is a welcome one. With that in mind, research on epidermal growth factor (EGF) (J. Li) is looking at where piglets are falling short in the early stages and what industry can do about it.

"EGF is produced naturally in the sow's milk and supports development of the piglet's intestine," said Dr. Julang Li, Professor in Animal Biosciences at the University of Guelph. "Due to changes in nursery practices today based on business decisions and concerns about the spread of disease, we are weaning piglets early now, around 21 days."

Missing milk

The earlier weaning means that piglets don't get enough milk and EGF, slowing their growth and development. Unfortunately, the chemical approach to making EGF commercially available is too expensive to be a practical option for producers. Given that reality, Dr. Li's group collaborated with the late Dr. Kees de Lange to create more cost-effective EGF.

"In collaboration with Dr. de Lange's group, we did some initial testing in pigs. Now that we have financial support from the swine cluster, in addition to industries and NSERC, we are conducting further animal trials, producing EGF in feed grade material or yeast and feeding it to piglets."

Based on a three-week trial, researchers have concluded that EGF supplementation can improve the intestinal development of piglets and enhance their growth, body weight gain and gain-to-feed ratio. The impact increased ac-

Photos: University of Guelph

cording to the dose received as per dosage amounts tested in this trial, and the added EGF seems to be especially effective where feed quality is lower.

Preferred protein

As an added benefit, EGF can alleviate some concerns around blood plasma.

“Blood plasma is often used as a protein source, but there is concern about the risk of pathogens in plasma. It appears that piglets receiving EGF do well without blood plasma.”

Additional testing is underway - in collaboration with Dr. Martin Nyachoti’s group - to determine the effect of EGF on E coli infection, so this may be one supplement that can multitask. Perhaps that explains why industry is quick to embrace it.

EGF causing a stir, naturally

“I’ve been talking to many people at conferences who think this is a great idea. We’re making EGF naturally and at a reasonable cost, using food-grade yeast to avoid any safety issues. We’re also pre-empting any concerns around genetically modified organisms by using only what is secreted by the yeast, which are enzymes that have been widely used in feed supplementation for many years.”

With the weaning stage representing one of the biggest bottlenecks in the pork industry, Dr. Li is hopeful that the regulatory hurdles can be overcome as soon as possible for the benefit of all.

“We now have the ability to boost the growth of early weaned pigs and decrease the chance of infection while reducing the use of antibiotics and blood plasma. That’s significant for our industry, and all that remains is securing government approval. In theory, the fact that EGF is a well-known, natural component of milk rather than a drug should help in getting it registered.”

Even if that approval process proves to be lengthy, researchers may be heartened by another maxim from the “tortoise and hare” tale: Slow but steady wins the race.

Learn more...

For more information about the work described in this article, please contact Dr. Julang Li at: jli@uoguelph.ca

This research was part a larger national project titled *Innovative piglet management strategies for optimum performance up to slaughter weight and profitable pork production*.

You may find additional resources related to the project by consulting our website:

www.swineinnovationporc.ca/research-animal-nutrition

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