Ensuring a good start and digestive comfort for your piglets

Digestive security is still an important factor to manage the efficient growth of suckling and weaned piglets. High vitality and a good start in life are also the main goals to achieve at this time, allowing profitable development during the following stages of rearing.

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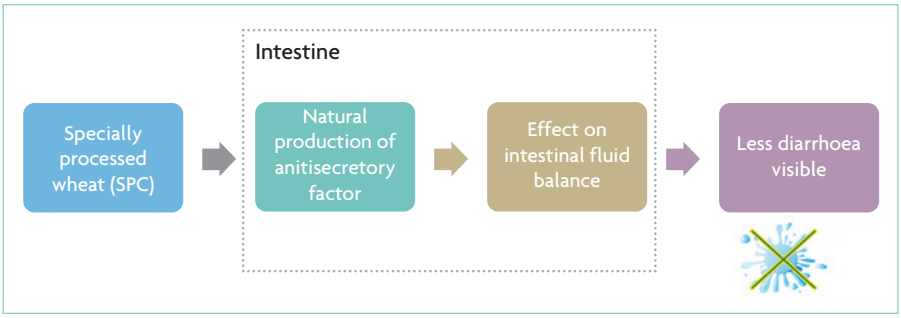


Fig. 2. Feeding piglets to boost the production of antisecretory factor.

Today, it is becoming more and more important to meet these challenges in a sustainable manner. Among the key topics for the swine industry, it is crucial to take part in the reduction of antibiotic resistance, by decreasing the use of antibiotics and zinc oxide in piglets.

With this in mind, CCPA Group has built a strong experience in antibiotic-free piglet nutrition.

The first concrete solution was AX'ECLA, a secure and non-medicated prestarter feed, launched in 2011. After 10 years of development, AX'ECLA is now a full piglet feed range, which allows the company to claim that almost 90% of its sales of prestarter piglet feeds are without antibiotics or zinc oxide.

Pursuing this orientation, CCPA Group has developed a new nutritional solution contributing to the digestive comfort of piglets and helping farmers to decrease the use of drugs for digestive disorders. It is a complementary solution for piglets, named Delta ElectroBoost, usable in diverse situations when diarrhoea can occur.

Diarrhoea manifestations

Secretory diarrhoea is the visible manifestation of gut disorders, with a large volume of faecal output caused by abnormalities of the movement of fluids and electrolytes into the intestinal lumen.

In a pathological situation, this fluid secretion is a way to protect the epithelium by 'rinsing' and diluting harmful substances from the environment. For young animals, and in particular for piglets, these secretions of fluids in the lumen can be very important and at this stage it is not well regulated. This hypersecretion leads to watery diarrhoea and can involve dehydration of the piglets.

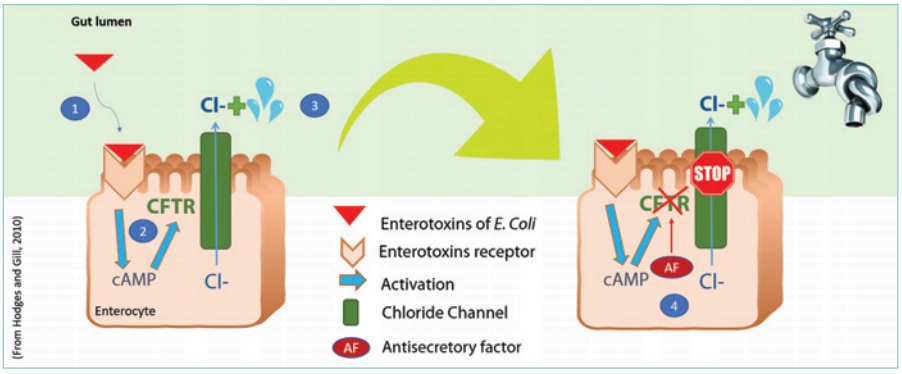
Anti-secretory factor

In the 1980s, Swedish researchers Stefan Lange and Ivar Lönnroth discovered that an endogenous protein, naturally produced by mammals, is able to regulate the intestinal fluid secretion and electrolyte balance. This protein is named antisecretory factor.

They found that this protein has the potential to reduce diarrhoea by inhibiting CFTR in the enterocytes and thus reducing the activation of chloride channels which limits the secretions of water and ions.

Unfortunately, the endogenous production of antisecretory factor is affected by stress. The stressful period of weaning for piglets leads to a reduction of the production of this protective protein, resulting in a higher risk of diarrhoea during the days following weaning.

Fig. 1. Left, an example of the mechanism of secretory diarrhoea due to E. coli enterotoxins. ❶ Attachment of the toxins to the receptors of epithelial cells in the intestine. ❷ Induction of cyclic adenosine monophosphate (cAMP) pathways and binding to cystic fibrosis transmembrane conductance regulator (CFTR). ❸ Leakage of Cl- ions by the transporter and hypersecretion of water. Right, the antisecretory factor (AF) effect on the enterocytes. ❹ Antisecretory factor (AF) inhibit CFTR and reduction chloride and water secretion.



SPC wheat (Specially Processed Cereals)

Lange and Lönnroth also found that there is a way to boost production of antisecretory factor by feeding the piglets with a specific

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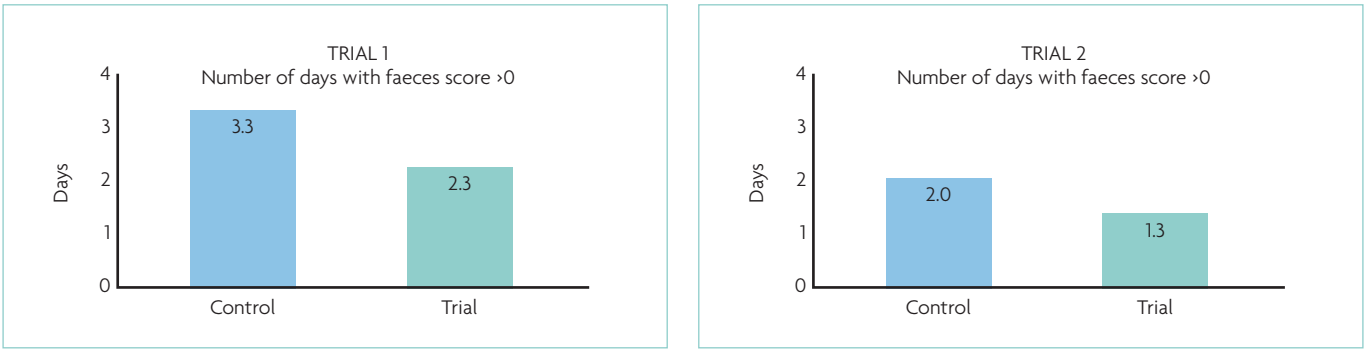

Fig. 3. Results of trials carried out by CCPA on the use of Delta ElectroBoost in piglets.

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ingredient. SPC treatment wheat (Specially Processed Cereals) is a patented hydro-thermal treatment on wheat, which induces antisecretory factor production by the piglet.

SPC cereals are also used in human medicine to reduce discomfort of patients suffering from inflammatory bowel disease with hypersecretions (such as ulcerative colitis or Crohn's disease).

Delta ElectroBoost

CCPA Group has gained experience by using SPC wheat in its prestarter piglet feed range. They have extended its use by including it in the Delta ElectroBoost solution. Besides SPC wheat, the nutritional solution also contains electrolytes to help with rehydration.

Particular attention has been paid to the palatability of the product, with an association of flavours and ingredients for sweet, salty and sour tastes.

To validate the efficiency of the product, two trials have been carried out by CCPA in an experimental station.

A trial group of piglets weaned at 21 days of age received 10g per day per piglet of Delta ElectroBoost in a specific trough plus a non-medicated prestarter feed.

It was compared with a control group of the same age which only received the non-medicated prestarter feed. Faeces consistency has been measured daily and assessed with a scale (0: normal, 1: soft, 2: liquid, 3: very liquid). The number of days with score ›0 is reported in the figures for the two trials.

In both situations, a decrease of the duration with soft faeces was observed with the use of Delta ElectroBoost.

The trials confirm the capacity of the product to improve digestive comfort.

The powder form allows for versatile use as it can be used in a specific trough, pure or mixed into the feed, dry or diluted in water. ■

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