Managing digestive troubles in the pig with algae extracts

Economical performance is strongly correlated with piglet performance in the farrowing unit. Today, pig production is a constant challenge. The number of piglets per sow has increased over recent years and this can lead to an inadequate colostrum intake (passive immunity). Moreover, immaturity of the piglets' immune system and gut microflora favour the development of pathogens which can lead to neonatal digestive troubles.

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Administration of SeaGut Paste with a dosing gun.

Digestive troubles represent the main cause of young piglet mortality and an almost systematic use of antibiotics. Moreover, neonatal digestive troubles lead to dehydration, followed by a loss of electrolytes, minerals and a poor absorption of nutrients leading to energy deficiency and thus poor growth. Considering there is a global demand to reduce antimicrobial use and increase welfare in livestock production, alternatives must be found.

Global approach

In this context, Olmix has developed an algae and clay based product called SeaGut Paste to naturally manage piglets' neonatal digestive troubles. SeaGut Paste is at the heart of the global 'Antibiotic Free Thanks to Algae Program' developed by Olmix technical experts in swine production to support farmers in improving pig performance, while progressively reducing the use of antibiotics.

This program, adapted to each farm, is based on a global approach and relies on strong technical and management support together with the use of specific and unique algae-based products developed by Olmix. Indeed, the program addresses the whole animal ecosystem (internal and external).

SeaGut Paste has been developed to protect the digestive tract of piglets to have fewer digestive troubles in the farrowing unit and better performance. The solution has three synergetic actions gathered in a single and complete easy-to-use product that:

- Protects the digestive tract through mucosa barrier improvement.
- Favours the balance of the intestinal microflora.
- Contributes to maintain homeostasis.

Improve the mucosa barrier effect

The protection of the intestinal mucosa is a key point for piglet digestive welfare. Intestinal mucins are large glycoproteins secreted by goblet cells in the intestine. They constitute the mucus gel that coats the intestinal epithelium and protects it. The mucus layer prevents the attachment and colonisation of bacteria on the mucosa and limits the intestinal absorption of toxins. Therefore, stimulating the production of mucin in order to protect the intestine turns out to be a relevant strategy to support the intestinal development of young piglets and to reduce digestive troubles.

The presence of MSPMUCIN, a specific macroalgae extract and micronised clay in SeaGut Paste reinforces, in a synergetic way the mucosa barrier effect. MSPMUCIN has the capacity to increase mucin secretion by goblet cells. Mucin improves protection of epithelium against pathogens and restores epithelium integrity.

Micronised montmorillonite clay from 'Olmix technology' combines a soft grinding process preserving the layered structure of montmorillonite and increasing the contact surface and thus adsorption and swelling properties. Micronised montmorillonite clay can adhere to the intestinal epithelium, physically strengthening the mucus layer protection. It also increases the water holding capacity which reduces dehydration of the piglets and helps them to recover.

Montmorillonite also has the capacity to adsorbs toxins as endotoxins, exotoxins or mycotoxins.

Balance intestinal flora and maintain homeostasis

The use of selected essential oils (clove and oregano) and yeast extracts provide a joint action to support the development of the commensal microflora, improving the young piglets' digestive welfare. Moreover, challenged piglets with digestive troubles are thinner and weakened. SeaGut Paste provides the highly assimilated necessary elements for a good protein, energy and physiological balance (dextrose and

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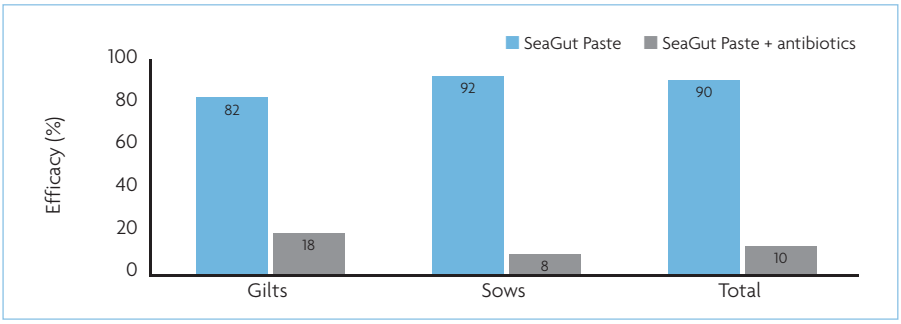

Fig. 1. Efficacy of SeaGut Paste in managing digestive troubles. Meta-analysis of 203 litters.

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spirulina) and the associated electrolyte blend (chloride, sodium and potassium) to rapidly rehydrate the affected piglets. Hence, SeaGut Paste boosts piglet body weight.

The paste can be put directly in the mouth of the piglet and is easy to use thanks to its packaging: pre-dosed airless tube or cartridge dosing gun. Early identification of digestive troubles signs are essential to immediately initiate SeaGut Paste administration for the whole litter. It is also possible to use SeaGut Paste in case of recurrent digestive troubles.

Meta-analysis of field trials

A multi-site study was implemented in France, Italy, Ireland, Vietnam and Denmark to evaluate the efficacy of SeaGut Paste in farms with different sanitary challenges.

In the meta-analysis 203 litters are included. All farrowing units followed the same protocol, which consisted of SeaGut Paste administration to all piglets of a litter showing digestive troubles (at least one animal). If the troubles persisted after two days (post 24 hours), the farmers could continue SeaGut Paste or use antibiotics after consulting their veterinarian. The global results proved that the use of SeaGut Paste alone was successful in managing digestive troubles in 90% of the case. Only 10% needed medical treatment. SeaGut paste alone was successful in 82% of gilt litters and 92% of sow litters (Fig. 1).

Moreover, in Seagut paste used alone sucessful cases, one day of use only was enough in 69% of the cases. One application was sufficient for 70% of gilt litters and 68% of sow litters (Fig. 2).

Farmer's testimony

Cyril Haouisée is an employee in a collective farrowing unit of 1,500 sows in Brittany, France: "The symptoms usually appear at five days of age. This is the time when we use SeaGut Paste. We tested this product as soon as Olmix launched it. We give it to all litters presenting digestive disorders. We use the 100ml tube, which is very practical for us to use. The administration is accurate and the tube fits in the pocket of our coveralls. If the piglets do not get better two days after the administration of SeaGut Paste, we give them a second dose. But usually 75% of the litters only need a single dose and the result can be seen within a day. SeaGut Paste is effective, and even if we still treat 10% of litters with antibiotics, overall, we have drastically reduced our antibiotic consumption."

All in all, SeaGut Paste proves to be an efficient tool to support digestive welfare of neonatal piglets and considerably limit antibiotic use. These results were further validated by the successful use of the product in other countries, including Cambodia and Philippines.

SeaGut Paste has already helped many farmers looking for natural solutions to limit the impact of digestive troubles – one of the most important issues affecting newborn piglets. ■

Fig. 2. Number of doses of SeaGut Paste needed to manage digestive troubles. Meta-analysis of 203 litters (1 dose = 2ml).