

# Modular acidifier concept – ingredients in free and microencapsulated form

Diarrhoeal diseases continue to cause the heaviest mortality rates in piglet production and entail significant economic losses. These can be up to 20% depending on the production system. Intestinal health is therefore a critical factor affecting performance and profitability in pig production.

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Harmful bacteria, such as *E. coli* and salmonella, can colonise the gastrointestinal tract, resulting in clinical and subclinical diseases. Animals with bacterial infections exhibit reduced feed intake and daily weight gain in addition to diarrhoea. With 4% of piglet losses attributed to diarrhoea, it is highly significant. Between 75 and 100% of these losses are caused by the Gram negative bacterium *E. coli*.

It makes economic sense to use feed acidifiers to prevent diarrhoeal diseases in piglets, stabilise the gastrointestinal tract, increase daily weight gains and optimise feed conversion rates. They can support a balanced gut environment and reduce concentrations of harmful bacteria such as *E. coli* and salmonella. Latibon Plus ME is a particularly effective and innovative feed acidifier concept which combines carefully selected organic acids and salts for young animal nutrition.

## Critical phases

The weaning period is a critical phase in terms of the number of piglet losses. The transition from milk to solid food and the increased bacterial load associated with rehousing and regrouping adversely affect the intestinal health of piglets and increase the risk of diarrhoea.

When piglets are weaned, their gastrointestinal tract is still not fully developed. The gastric acid (HCl) needed for optimal digestion is produced in insufficient quantities at this stage. This causes increased

levels of potential pathogens in the gastrointestinal tract.

Reduced enzyme activity in the pancreas is a further consequence of low HCl secretion. The ensuing reduction in protein and nutrient digestion has a pronounced negative impact on the risk of diarrhoea in piglets. The use of acids such as Latibon Plus ME and the associated reduction in pH levels in the stomach of piglets can activate trypsin and chymo-trypsin, thereby increasing protein digestion. Less undigested protein remains in the intestine, leading to optimised feed conversion rates.

## Micro-encapsulation

A combination of different acids should ideally be added to the feed to prevent this problem of diarrhoea in piglet production. Since some of the components in Latibon Plus ME are present in micro-encapsulated form, they can remain effective throughout the digestive tract. Rather than being entirely digested in the stomach, some active ingredients in the acid complex are not released until they reach prececal or ileal level.

This continuous release mechanism optimises the mode of action of the acids in the corresponding section of the digestive tract, thereby increasing the effectiveness of acids used in pig production.

The combination of different acids in Latibon Plus ME provides a



larger spectrum of activity than individual acids.

A further advantage of using Latibon Plus ME is its ability to control bacteria at different pH levels. Lactic acid is effective at a pH level of 6, whilst formic acid is most effective at a pH of 4. In this way colonisation by bacteria that cause diarrhoea can be prevented in all areas of the digestive tract.

In addition, the Latibon Plus ME complex provides a highly available source of calcium with a low buffering capacity. Consequently, the amount of lime added to the feed can be reduced, which has a positive effect on the buffering capacity of the feed and the calcium intake of young animals.

The effect of Latibon Plus ME in feed on the incidence of diarrhoea in piglets was investigated in a feed trial conducted at Nong Lam University in Vietnam. Some 272 piglets were divided into four feeding groups: one standard ration with no acid supplement (control), two different doses of Latibon Plus ME and supplementation with potassium diformate (KDF) were tested.

The lowest incidence of diarrhoea was recorded in both Latibon Plus ME groups (Fig. 1). Overall the incidence of diarrhoea was reduced by 4.1% compared with the control group and 2.5% compared with the potassium diformate group. As well as a reduction in diarrhoea, the feed conversion rate also increased by 15%, since less feed is required per kilogram of weight gain.

Further trials have confirmed that the improved piglet health has a positive impact on growth rate in the subsequent fattening period.

## Conclusion

Latibon Plus ME improves feed hygiene, can reduce diarrhoea-causing pathogens, lowers the buffering capacity of the feed and stabilises the pH level in the digestive tract.

It is a valuable tool for preventing diarrhoea and increasing profitability in modern pig production. ■

References are available from the author on request

Fig. 1. Left, the influence of Latibon Plus ME on the incidence of diarrhoea in piglets and, right, improved feed conversion rates through the use of Latibon Plus ME in piglet feed.

