



ProPhorce™ AC 299

Making a difference in
cost-effective acidification

Feed additive that gives key benefits

- ➔ Improves dietary Electrolyte Balance (dEB)
- ➔ Contributes to a profitable production
- ➔ Inhibits growth of pathogenic bacteria
- ➔ Can be used in premixes
- ➔ Excellent free flowing characteristics

Highly cost-effective acidifier

Perstorp is well known as one of the global leading feed additive companies. As it is more important than ever to manage your costs without compromising on animal performance, Perstorp introduces ProPhorce™ AC 299: an innovative new non-corrosive, dry acidifier that enables you to manage the dietary electrolyte balance in a very economical way.

ProPhorce™ AC 299 consists of sodium and formate and is a free flowing product which is easy to handle.

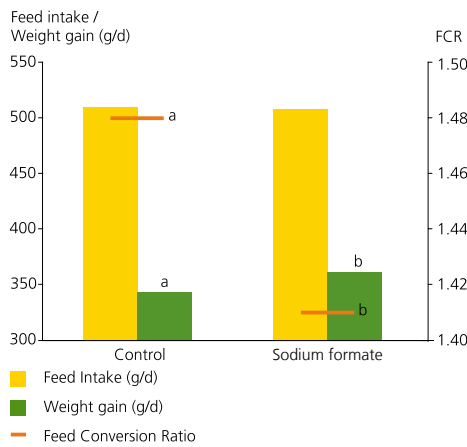
Sodium and formate have the following unique properties:

- ➔ Managing the electrolyte balance in a cost-effective way. Optimizing dEB has proven to enhance live weight gain in growing animals and to reduce leg problems in growing and lactating animals.
- ➔ Reducing the buffer capacity of the gastric content of piglets.
- ➔ Enhancing the conversion of pepsinogen into pepsin, a major enzyme involved in protein digestion.
- ➔ Reducing the emptying rate of the stomach, resulting in an improved nutrient digestibility.

Higher bottom line profit

The formate in ProPhorce™ AC 299 is a highly cost-effective acidifier. It improves your profitability by cost-effectively improving feed acidification. The sodium of ProPhorce™ AC 299 is actively involved in the absorption of valuable nutrients.

The graph below shows that sodium formate has consistently proven to enhance animal performance in piglet growth experiments.



Feed intake, weight gain and FCR 1-4 weeks after weaning. Sodium formate enhances weight gain and improves feed conversion ratio significantly. Bars with different superscript (a,b) differ significantly ($P < 0.05$) (De Schothorst, 2005).

Inhibiting the growth of harmful bacteria

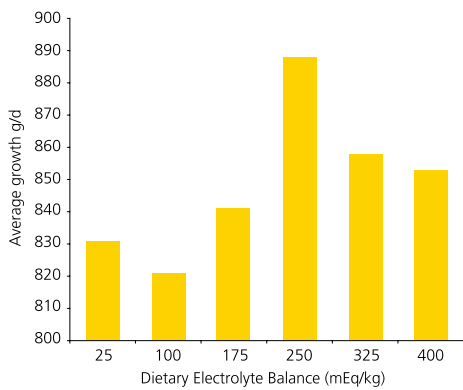
Formic acid and their salts have a strong bacteriostatic effect on pathogenic bacteria such as *Salmonella* and *E. coli* as it reduces the pH in the stomach, thereby preventing the passage of harmful bacteria from the stomach to the small intestines.

The formate anion of the salts has proven to inhibit major metabolic processes within the bacterial cell. Therefore the formate molecule is a very good replacement for other organic acids and their salts.



Dietary Electrolyte Balance

Sodium supplementation for animal feed must meet the level needed by the animal and take into account a balance between Na⁺, K⁺ and Cl⁻ to respect the dEB. In growing animals such as swine and broilers it is important to optimize the dietary electrolyte balance (dEB). The dEB level affects the weight gain, feed consumption, and feed conversion ratio (FCR). The optimum level should be somewhere between 230 and 250 but differs between animal species and age.



Effect of dietary electrolyte balance (dEB) on performance of growing-finishing swine (Haydon et al. 1990).

Versatile sodium source

Because ProPhorce™ AC 299 contains sodium it gives you the tools to manage the dietary electrolyte balance in a very cost effective way. It combines the properties to manage the electrolyte balance with the antibacterial property of the formic acid anion.

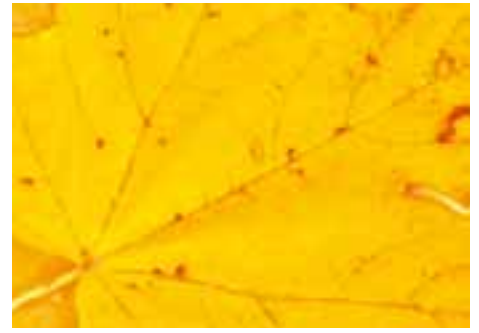
The tables below show that the inclusion of ProPhorce™ AC 299 in piglet prestarter feed gives a significant reduction of the variable feed cost because it can replace both the formic/lactic acid mix and the sodium bicarbonate.

Feed with formic/lactic acid mix and sodium bicarbonate	
Raw material	Percentage
Formic/lactic acid mix	0.76
Sodium bicarbonate	0.81
Sunflower 31% CP	5.00
Limestone	0.78
Mono calcium phosphate	0.93
Lysine synthetic	0.32
Methionine synthetic	0.08
Threonine synthetic	0.01
Barley	10.82
Wheat	50.00
Soya bean expeller	7.50
Soya protein concentrate	8.84
Fat/animal fat	2.50
Whey powder	8.82
Fat/palm oil	1.85
Premix pigs	1.00

Feed with ProPhorce™ AC 299	
Raw material	Percentage
ProPhorce™ AC 299	0.83
Sunflower 31% CP	5.00
Limestone	0.78
Mono calcium phosphate	0.93
Lysine synthetic	0.32
Methionine synthetic	0.08
Threonine synthetic	0.01
Barley	11.99
Wheat	50.00
Soya bean expeller	7.50
Soya protein concentrate	8.65
Fat/animal fat	2.50
Whey powder	8.82
Fat/palm oil	1.58
Premix pigs	1.00

When ProPhorce™ AC 299 is included in the recipe of piglet prestarter feed the feed costs decline with € 2.70/mton.





Your Winning Formula

The Perstorp Group is the world leader in several sectors of the specialty chemicals market. Few chemical companies in the world can rival its 125 years of success. Today we have a rich performance culture distilled from our long history and extensive knowledge in the chemical industry. That culture and knowledge base enables us to produce Winning Formulas for a wide variety of industries and applications.

Our products are used in the aerospace, marine, coatings, chemicals, plastics, engineering and construction industries. They can also be found in automotive, agricultural feed, food, packaging, textile, paper and electronics applications.

Our production plants are strategically located in Europe, North America and Asia and are supplemented by sales offices in all major markets. We can offer you speedy regional support and a flexible attitude to suit your business needs.

If you want a partner for feed additives who can offer you focused innovation to enhance your product or application, which is delivered reliably and responsibly, look no further. We have a winning formula waiting for you.