

# MAXACID

## ACID MIXTURES FOR EVERY NEED

The MAXACID program offers acid mixtures for a wide range of applications in animal nutrition, feed hygiene and cereal preservation. It comprises not only classic mixtures of organic acids (formic acid, lactic acid, propionic acid), but also special products such as monoglycerides and monobutyryl.

### PERFORMANCE AND HEALTH-PROMOTING EFFECTS

Acids increase the barrier function in the stomach and help decrease the proliferation of enterobacteria in the small intestine and colon. The different acid combinations offered by PROVITA SUPPLEMENTS cover all the target places in an animal's body. When used alone, a single acid may have a strong impact on specific parts of the body, such as the mouth, esophagus, and the stomach or gut. When used in combination, however, our acids deliver their full effectiveness throughout the whole of the animal. The table below explains the essential properties and effects of our acid combinations in pig and poultry feeding.



### MAXACID

- Increases feed intake and promotes more efficient feed conversion
- Highly effective against gram-positive and gram-negative bacteria
- Supports the intestinal flora and, therefore, stable health
- Improves feed hygiene and stable hygiene in pipe systems

### GOOD TO KNOW

We also develop customized solutions that are tailor-made for your needs. We can combine many different organic acids, carrier substances and acid supplements.

		Citric acid	Formic acid	Lactic acid	Acetic acid	Propionic acid	MCM (C8, C10 & C12)
physical characteristics	biological activity at pH 4.5	3.7%	15%	19%	64%	71%	independent
spectrum of activity	bacteria	+	+	+	+	+	+
	yeasts		+		+	+	
	special action						+
site of action	crop/stomach						
	small intestine						
	colon						
site of action	mouth/esophagus						
	stomach						
	gut						

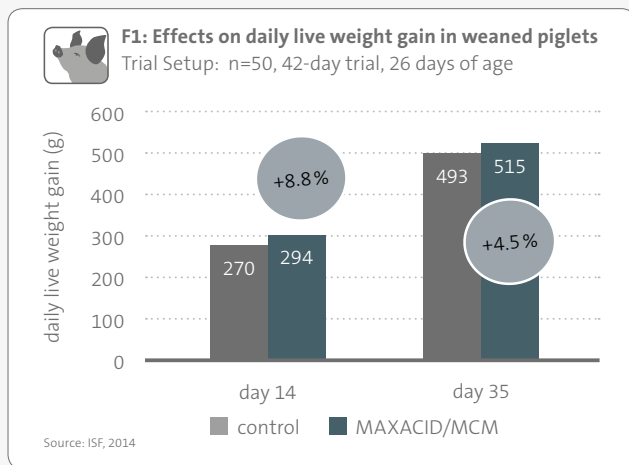
PERFECT COMPONENTS. MAXIMUM RESULTS.

**MONOGLYCERIDES AND MONOBUTYRIN FOR INCREASED PERFORMANCE**

**MAXACID/MCM**

Monoglycerides are created when a free medium-chain fatty acid (MCFA) is bound to glycerin via esterification. **MAXACID/MCM** uses a compound of three esterified MCFAs: caprylic acid (C8), capric acid (C10) and lauric acid (C12). It has shown to inhibit unwanted germs such as gram-positive clostridia and streptococci and gram-negative bacteria such as *E. coli* and salmonella. MCMs are taste- and odor-neutral, which improves animal's willingness to ingest the products. They are emulsifiable, thanks to their polarity, and they are effective even in a pH-neutral medium and when used in small amounts.

Figure 1 shows the beneficial effect of **MAXACID/MCM** on daily live weight gain in weaned piglets. The treated piglets showed significant better daily weight gains in both the first feeding-phase and the overall period (0–14 and 0–42 days) compared to the control group.

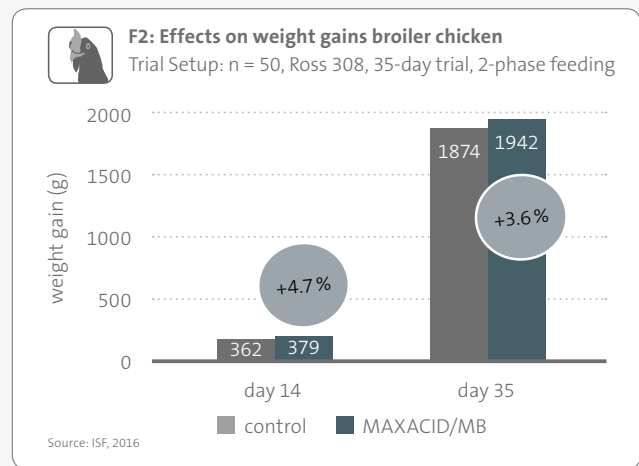


- MAXACID/MCM**
- Enables fatty acids to penetrate the bacterial cell because MCMs are easily absorbed
  - Inhibits gram-positive bacteria such as clostridia, streptococci and staphylococci
  - Suppresses harmful bacteria and promotes the development of beneficial bacteria in the intestinal flora

**MAXACID/MB**

**MAXACID/MB** is an odor-free compound of mono- and diglycerides of butyric acid (C4), which is an energy source for the intestine and has an antibacterial effect. The molecule has a highly stable covalent bond, which makes the efficacy of the product independent of the pH. Furthermore, it plays an important role in proliferating and strengthening epithelial cells.

Figure 2 shows the effects of **MAXACID/MB** on weight gain in broiler chickens in a dose-response trial. This trial shows that broilers got off to a faster start when fed **MAXACID/MB**, and they maintained their weight-gain advantage through 35–days of growth.



- MAXACID/MB**
- Stimulates the development of favorable intestinal flora (e.g., lactobacilli)
  - Supplies 50% of energy demand from gastrointestinal mucosa
  - Plays an important role in proliferating and strengthening epithelial cells