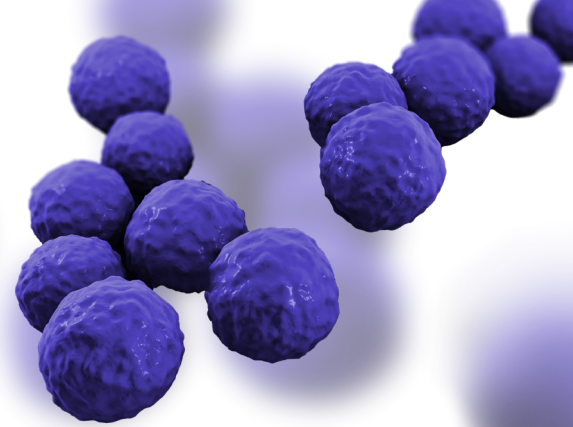
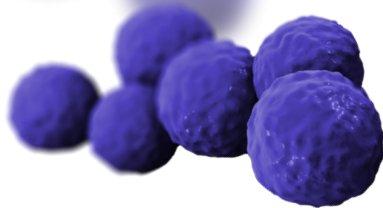


# MAXLAC

## GUT FLORA STABILIZER

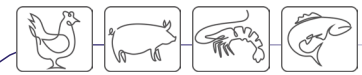


MAXLAC products are composed of *Enterococcus lactis*, a lactic acid bacterium. MAXLAC protects the intestinal mucosa by creating a protective biofilm, thereby reducing the colonization by potential pathogenic bacteria. Products are available for feed (MAXLAC/Pellets) and water application (MAXLAC/DW).



### LACTIC ACID BACTERIA FOR PRODUCTIVITY

Probiotics, also known as direct-fed microbial, can have several beneficial effects on immune function, intestinal structure and gut barrier function. MAXLAC increases potential beneficial bacteria and reduces potential pathogens in the gut, thereby supporting the immune function and animal performance.



### CHARACTERISTICS

- Supports potential beneficial microbiota
- Inhibits potential pathogenic bacteria
- Improves animal performance

### APPLICATION BENEFITS

- Water and feed application
- Coating for heat-stability
- Special solution for calves (MAXLAC/MR)

Tab.1: MAXLAC product portfolio.\*

Product	Strain	CFU/g product	Application
MAXLAC/Pellets	<i>Enterococcus lactis</i> (DSM 7134)	$1 \times 10^{10}$	feed
MAXLAC/DW	<i>Enterococcus lactis</i> (DSM 7134)	$1 \times 10^{10}$	water
MAXLAC/MR	<i>Enterococcus lactis</i> (DSM 7134)	$1 \times 10^8$	milk replacer
	<i>Lacticaseibacillus rhamnosus</i> (DSM 7133)		
MAXLAC/Aqua	<i>Enterococcus lactis</i> (DSM 7134)	$1 \times 10^{10}$	water
	<i>Lacticaseibacillus rhamnosus</i> (DSM 7133)		

\*Product-related information does not apply to all sales areas and can vary according to applicable law and regulations in various jurisdictions.

### HOLISTIC APPROACH WITH MAXACID

Synergistic effects can be achieved by feeding MAXLAC with other PROVITA SUPPLEMENTS products. For example, MAXLAC can be fed with medium-chain fatty acids (MCFA) included in MAXACID resulting in a greater performance in weaned piglets compared to Control.

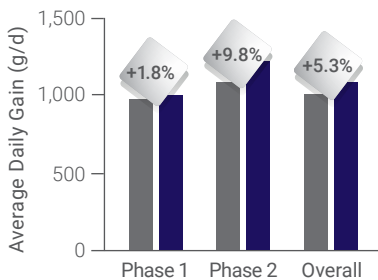
## COATED PROBIOTIC IMPROVES PERFORMANCE

**Animals:** Exp. 1: Growing pigs (n=144); 77-d trial; 2-phase feeding program  
Exp. 2: Broiler (Cobb 500; n=120); 35-d trial

**Treatments:** Exp. 1+2: Control; MAXLAC ( $1 \times 10^{10}$  CFU *E. lactis*/kg diet)



F1: Average daily gain of pigs.

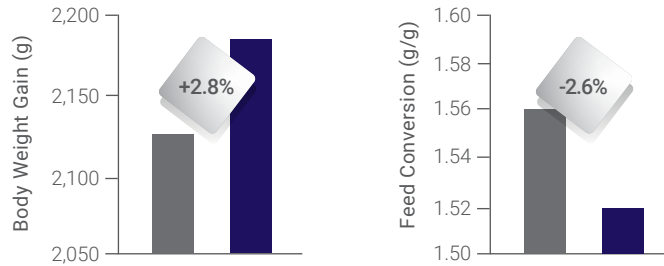


Source: CAU Kiel, 2014.

■ Control ■ MAXLAC



F2: Body weight gain and feed conversion ratio of broiler.



Source: FU Berlin, 2014.

Pigs fed with MAXLAC had a numerically greater average daily gain compared to Control. In broiler, body weight gain was numerically greater and feed conversion numerically lower for MAXLAC compared to Control. **MAXLAC applied in feed improves the performance in growing pigs and broiler.**

## GREATER PERFORMANCE IN SOWS AND PIGLETS

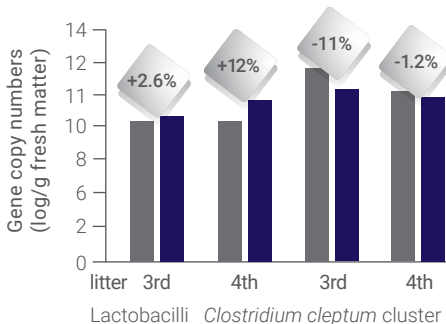
**Animals:** Sows (DANZucht line); piglets (DANZucht line × Piétrain), 12 pigs/sow

**Treatments:** Control; MAXLAC ( $5 \times 10^8$  CFU *E. lactis*/kg diet) fed over two complete reproductive cycles (3<sup>rd</sup> and 4<sup>th</sup> parity)

**Methods:** Performance (n=66-67); microbial composition (qPCR) of fecal samples (n=40)



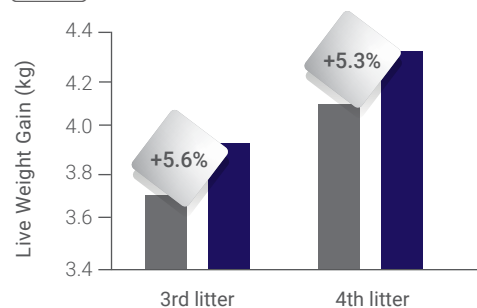
F3: Microbial composition of sow feces.



Source: FU Berlin, 2012.



F4: Litter weight gain.



Source: FU Berlin, 2012. ■ Control ■ MAXLAC

In sows, microbial composition of fecal samples was affected by MAXLAC. Gene copy numbers of lactobacilli were numerically greater for MAXLAC compared to Control, whereas the gene copy numbers of potential pathogenic bacteria, *Clostridium cleptum* cluster, were numerically lower for MAXLAC compared to Control for both litter. In piglets, the live weight gain was numerically greater for piglets of sows fed MAXLAC compared to Control for both litter. **MAXLAC improves sow and related piglet performance.**