



# CALSPORIN®

Probiotic to stabilize microflora in weaned piglets



After weaning, piglets could use some support to stabilize their microflora to create a healthy microbial population in their gastro-intestinal tract. Calsporin® contains viable spores of *Bacillus subtilis* C-3102 that have been proven to beneficially affect the gut flora of weaned piglets, resulting in improved performance and reduced pressure of *E.coli*, *Clostridium p.* and *Salmonella*. The robust spores enable the probiotic to survive major feed production processes and make the product compatible with the main used anti-microbial products.

## STABILIZING GUT FLORA AFTER WEANING

A healthy gut ensures optimal nutrient absorption which is essential for good performance. The digestive tract of the piglets contains large amount of micro-organisms. This microflora is in imbalance after the suckling period when the young pigs change to their weaning diets. Stabilizing the microflora with beneficial microbes helps the young pigs cope with this challenging period.

### Support the imbalanced microflora after weaning

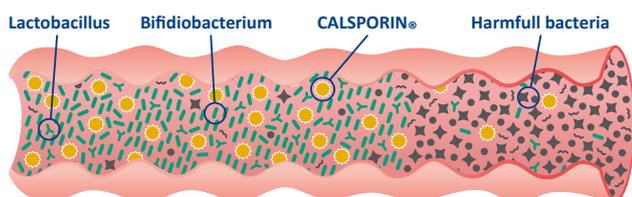
The microflora has a symbiotic relationship with the host and protects the body against infections, assists digestions, produces metabolites and plays an important role in the immune function. Disturbance of the microflora by emerging pathogenic bacteria results in weaning diarrhea and lower health status of the herd.

Calsporin® contains viable spores of *Bacillus subtilis* C-3102. This unique selected *Bacillus* strain has several pathways in which the probiotic improves gut health. *Bacillus subtilis* creates an environment which is positive for the beneficial gut bacteria (e.g. *Lactobacilli* and *Bifidobacteria*) by consumption of oxygen and the production of certain enzymes. *Lactobacilli* colonize the gut mucous layer and block the adhesion sites for pathogenic bacteria, also known as competitive exclusion. In combination with the produced lactic acid, the beneficial bacteria reduce the amount of pathogens such as *Salmonella*, *E.coli* and *Clostridium*.

In this way, Calsporin® promotes the proliferation of a beneficial microflora and reduces the pathogenic bacteria. The result is a healthy gut for better utilization of nutrients, less digestive disorders, healthier animals and better performance.

## SUPPORT OPTIMAL MICROFLORA

- *Bacillus subtilis* creates an anaerobic environment to favor the growth of beneficial gut bacteria (e.g. *Lactobacilli* and *Bifidobacteria*)
- Competitive exclusion and lactic acid production by local gut bacteria limit pathogenic bacteria such as *Salmonella*, *Clostridium* and *E.coli*



## High stability during feed processing and storage

### HIGHLY STABLE IN PRACTICAL USE OF ANIMAL FEEDS

- Robust spores of *Bacillus subtilis* resist high temperatures during feed processing, proven to be stable during feed pelleting and can survive expansion
- Stable in stored premix and feed under practical conditions
- Compatible with EU-approved antimicrobials and organic acids

#### PELLETING STUDY (AT 90°C)

Mean counts (Log 10 CFU/g)

#### MASH

5,93

#### PELLETS

5,82

#### EXPANSION STUDY (AT 105°C)

Mean counts (Log 10 CFU/g)

#### BEFORE EXPANSION

5,64

#### AFTER EXPANSION

5,62

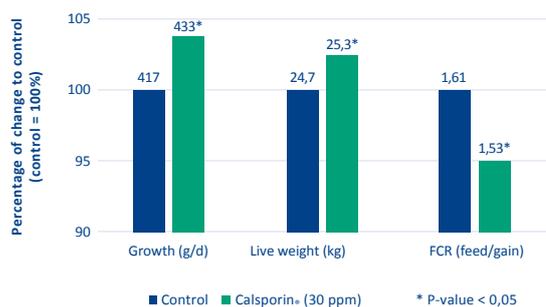
## ANIMAL TRIALS

Calsporin® supports the weaned piglets to stabilize their microflora, resulting in higher performance and a better control of the intestinal pathogens.

Results from 4 EU-efficacy studies are combined in a meta-analyses. Calsporin® improved the zootechnical performance of piglets in the 42-days after weaning.

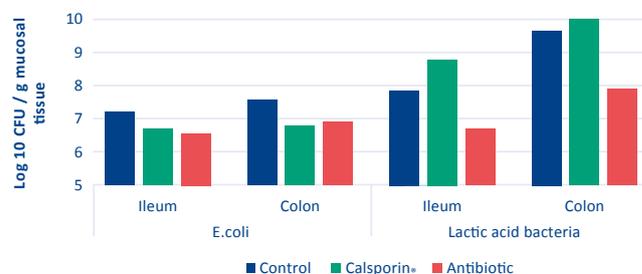
- Improved daily gain (+ 3,8%)
- Better feed conversion ratio (+ 5,0%)

#### Results 0-42 days post weaning



Calsporin® balances microflora after *E.coli* infection in piglets.

- Lower intestinal *E.coli* and reduced severity of diarrhea.
- Stimulation of the beneficial lactic acid bacteria in contrast to an antibiotic treatment



## CALSPORIN®

- *Bacillus subtilis* C-3102
- EU authorization at 30 ppm for weaned piglet < 35 kg
- Stabilizes gut flora after weaning
- Robust spores, highly stable during feed processing

