



# CALSPORIN®

Heat stable probiotic for broiler and turkey



Feed efficiency and high performance are related to a healthy gut and optimal nutrient absorption. The gut microflora can easily be disturbed by the emergence of coccidiosis and pathogenic bacteria. Calsporin® contains viable spores of *Bacillus subtilis* C-3102 and has proven to stabilize the gut flora in broilers and turkeys. As a result, addition of Calsporin® to poultry feed improves growth, feed efficiency and is able to control intestinal pathogens. The robust spores enable the probiotic to survive major feed production processes and is compatible with the main used coccidiostats, organic acids and anti-microbial products.

## OPTIMIZE INTESTINAL MICROFLORA

Healthy poultry guts ensure optimal nutrient absorption, essential for optimal growth and a healthy flock. The digestive tract of poultry contains large amounts of microorganisms. This commensal intestinal population assists in feed digestion and can protect the host from pathogenic colonization. These local bacteria compete with pathogenic species for epithelial binding sites and nutrients, positively support the host immune response and are able to control the growth of pathogenic bacteria.

Disturbance of the normal intestinal microflora can easily occur, for example after a coccidiosis infection or (heat) stress period. Potential pathogenic bacteria are better able to bind and colonize in the digestive tract. As a result, performance, mortality rates and food safety are compromised.

## Optimal nutrient absorption starts with a healthy gut

Calsporin® contains viable spores of *Bacillus subtilis* C-3102. This unique selected *Bacillus* strain is able to create a comfortable environment for the local beneficial bacteria in the gut, by the consumption of oxygen and the production of certain enzymes. By stabilizing the gut microbiota with beneficial bacteria, the addition of Calsporin® facilitates in better growth and feed efficiency. Various trials confirm that the administration of *Bacillus subtilis* C-3102 to poultry diets can reduce the most common pathogens like *Clostridium perfringens*, *Salmonella*, *Escherichia coli* and *Campylobacter*.

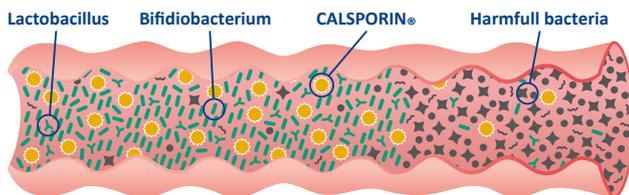
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## SUPPORT OPTIMAL MICROFLORA

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



## HIGHLY STABLE IN PRACTICAL USE OF ANIMAL FEEDS

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

High stability during  
feed processing and storage

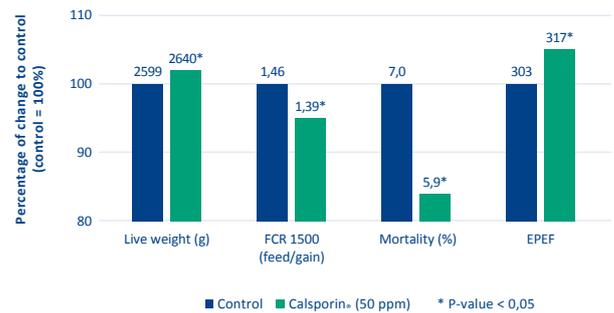
## ANIMAL TRIALS

Calsporin® contributes to an ideal balance in the intestinal microflora, which supports growth performance and help to control intestinal pathogens.

A meta-analysis of 4 efficiency studies with Calsporin® shows the supportive effect on broilers at 42 days of age.

- Improved growth (+1,6%), feed efficacy (-2,6%) and reduced mortality
- Higher efficiency: EPEF (+4,8%)

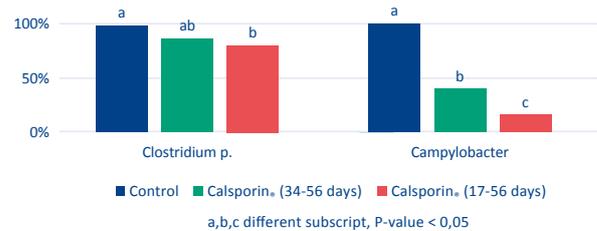
Efficacy of Calsporin® in broilers



Control of intestinal pathogens is key for high performance and food safety. Various trials show the ability of Calsporin® to reduce or even exclude pathogenic species.

- Lower levels of *Clostridium*, *E.coli*, *Salmonella* and *Campylobacter* in the gut content and feces
- Reduction of number of infected birds

Percentage of infected birds



## CALSPORIN®

- Probiotic *Bacillus subtilis* C-3102
- EU authorization at 50 ppm for broilers and 30 ppm for turkeys
- Stabilizes gut flora
- Robust spores, highly stable during feed processing

