

BacPack™
= CALSPORIN® + IMW50®



Unique synergistic boost for high challenge situations

BacPack

CALSPORIN® ***IMW50®***

QTI™

ANIMAL HEALTH & NUTRITION

Egg Quality

- Increases egg shell thickness (patented)
- Less broken eggs
- Improves color
- Improves albumen height
- Fresher eggs

Sustainability

- Healthier birds produce more and better quality eggs
- Reduces ammonia/nitrogen leaching in water and air

Food Safety

- Reduces pathogens, *Salmonella* and *E. coli*
- Reduces eggshell contamination
- Multiple modes of action to support control of public and poultry health pathogens

Animal Health

- Less stress
- Increased wellness
- Improves feed utilization
- Improves livability
- Increases ROI

Product for Today

- Non antibiotic
- All natural organic formulation
- Consistent, thermostable
- First class tech service: pathogen analysis and monitoring
- Proven results at leading universities, research labs and in the field
- Over 100 published research papers

Function

- Increases beneficial bacteria
- Stabilizes gut microflora
- Excludes harmful bacteria
- Stimulates immune function

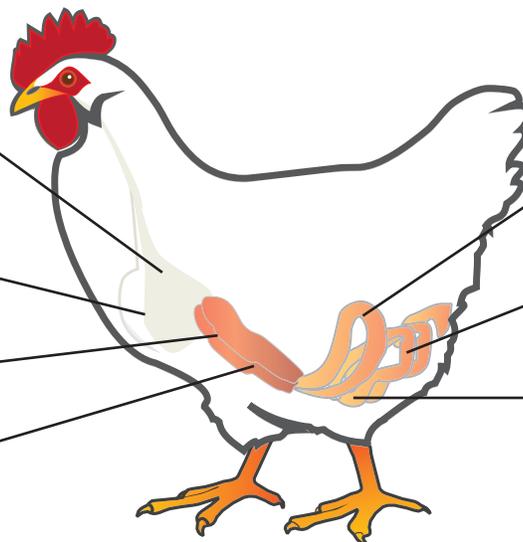
Survives the Low pH of Stomach

CALSPORIN Activated by
Moisture and Heat

Reduction of *E. Coli* and
Salmonella

Rapid Reduction of Harmful
Bacteria

Promotes Healthy Gut



Reduction of *Salmonella*

Reduction of *E. Coli*

Increases Lactic Acid
Producing Bacteria

QTI COMPANY BACKGROUND

Quality Technology International, Inc (QTI) is headquartered in Elgin, Illinois and is part of the Itochu family of companies. QTI's Animal Health & Nutrition division focuses on natural products used for animal health, performance, and food safety. Its keystone product, CALSPORIN®, is a probiotic which is often called a direct-fed microbial (DFM.) CALSPORIN products also are combined with prebiotics. (See back page.)

Concentrating on the digestive tract, these products have been proven in over 100 published studies to:

- Improve overall animal health
- Decrease invasive bacteria in the animal's digestive system
- Improve food safety
- Show substantial return on investment (ROI)

THE ANTIBIOTIC ISSUE & POULTRY

An important matter on consumers' minds is the issue of unrestrained antibiotic use as a general growth promoter (using antibiotics all the time, even if the animals are not sick.) For over a decade QTI has foreseen this concern and has produced products that can be used with or without antibiotic growth promoters (AGPs.)

With exhaustive and verified research, CALSPORIN has been proven to be one of the most effective products allowing producers to use less antibiotics to maintain animal health. CALSPORIN is based on beneficial bacteria that improves feed utilization and provides a natural alternative to antibiotic growth promoters on poultry farms. CALSPORIN is a leader in antibiotic-free poultry product production.

TECHNICAL SUPPORT & ANALYTICS

QTI supports and delivers continued pathogenic bacterial analysis to monitor the shift in environmental pathogenic load as the treatment progresses. Clients are provided the results.

Bacteria monitoring includes:

- *Salmonella/Campylobacter*
- *Clostridium perfringens*
- *Enterobacteriaceae*
- *Lactobacilli*
- Total anaerobes

FOOD SAFETY

Another huge consumer concern is the matter of food safety. Bacteria that is bad for humans, such as *Salmonella*, is not necessarily harmful to poultry. So a chicken can carry them and not be affected, but the food production process can pass along these pathogenic bacteria to humans. QTI's products have been proven to reduce *Salmonella*, *E. coli* and other harmful bacteria.

EGG QUALITY

Besides improving the health of chickens in general, CALSPORIN is unique in that it has been proven to improve egg quality.

- Increased egg shell thickness (patented)
- Improved color
- Fresher eggs

SUSTAINABILITY

By promoting healthier birds and enhancing efficiency, more and better quality eggs are produced with less feed. QTI products also reduce ammonia/nitrogen leaching in water and air, while reducing the potential harmful impacts on food safety, the environment, hen health and well-being, and worker health.

WORK CONDITIONS AND AMMONIA

A major concern for the poultry workplace is ammonia that is produced by the animals' fecal matter. High ammonia/nitrogen levels are harmful to the birds' respiratory system, legs, skin and eyes. This is also harmful to workers who breathe it in, and ammonia in the air will also affect worker's eyes. In research studies, CALSPORIN has shown to reduce harmful ammonia levels in the air. Besides lowering the ammonia levels in the air, it also can reduce ammonia that could runoff and leach into water sources.

RETURN ON INVESTMENT

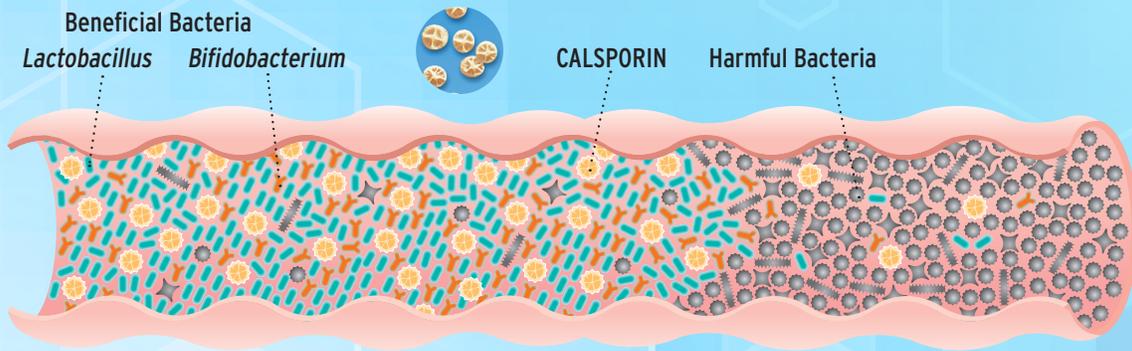
CALSPORIN and the other QTI Animal Health Care products show a significant return on investment. Money spent up front brings more profits down the road.

- Healthier chickens produce more and better quality eggs
- Improved feed conversions (food intake in relationship to weight gain)
- Less mortality
- Less stress

OVERVIEW

Ten years ago, QTI was pretty much alone talking about the benefits of DFMs and the possibility of raising chickens and producing eggs without antibiotics. Over time, and with unmatched proven performance, top poultry companies have incorporated CALSPORIN and other QTI products into their regular dietary/supplement programs.

Today there are numerous feed companies that have jumped on the bandwagon having seen the benefits of direct-fed microbials. When evaluating your options, consider who has the proven performance and experience providing DFMs to the marketplace.



Continuous feeding of CALSPORIN is essential in order to ensure consistent seeding of the intestinal tract with viable spores.

Mode of action based on known properties of aerobic and anaerobic bacteria.

When consumed by the hen, CALSPORIN is activated by heat and moisture in the crop. Spores break dormancy and become metabolically active. CALSPORIN spores start reproducing through the intestinal tract. In the intestines, CALSPORIN spores are active, consuming oxygen. Harmful aerobic bacteria become “starved” without the oxygen. Helpful anaerobic bacteria begin to flourish. *Lactobacilli* & *Bifidobacterium* proliferate, lactic acid is produced, pH is lowered.

CALSPORIN:

- Reduces pathogenic bacteria pressure
- Promotes gut function
- Decreases heat stress impact
- Reduces ammonia
- Stimulates growth of good bacteria

Extensive research has confirmed lower counts of harmful bacteria

- *Clostridia*
- *Salmonella*
- *E. coli*

CALSPORIN is patented to improve egg shell quality: less broken eggs means huge savings. Better quality eggs (fresher, improved color, etc) improve customer satisfaction and confidence. QTI is the leader in helping producers go antibiotic-free, working with companies for over a decade in the U.S. Healthier chickens produce more and better eggs. QTI products improve food safety, for animals and for humans, by reducing *Salmonella*, *E. coli*, etc.

QTI ANIMAL HEALTH PRODUCTS

QTI’s base products are often referred to as *direct-fed microbials (DFMs)* or *probiotics* and are often used in combination with *prebiotics*. These can then have additional minerals and essential vitamins added to them. They are ingested by the animals when added to feed or mixed in drinking water.

CALSPORIN is a naturally occurring *Bacillus subtilis* bacteria (probiotic.) Its presence in the digestive tract helps the animal get rid of harmful bacteria, allowing good bacteria to proliferate. (Think about how yogurt has a positive effect on a human’s digestive system.)

Finelact is a naturally occurring bacteria that is present in the digestive tract of healthy birds. It is often used to help reestablish good bacteria in the gut when an animal has been sick.

IMW50 is a prebiotic referred to as a MOS product. Another all-natural product, it is derived from yeast cell walls. Like CALSPORIN, it helps induce growth of helpful microorganisms, but does it in a different way. Instead of reducing the bad bacteria, MOS (mannan oligosaccharides) products work as a substrate for the advantageous bacteria to grow in the gut.

BacPack combines CALSPORIN and IMW50, offering two different modes of action that help good bacteria grow while reducing harmful bacteria in the intestinal tract.

Refresh is a water soluble product used primarily to reduce stress. Commonly used when transporting young chicks.

CALSPORIN Organic is an OMRI certified organic version of CALSPORIN.

