



SOLUTIONSⁿ Palisade

Product Description:

A proprietary combination of *Bacillus* bacteria and Essential Oils (EO) designed to help maximize gut function in livestock.

Key functions:

Bacillus based probiotics are common to the livestock industry. Adding EO to *Bacillus* is a novel concept designed to help maximize the positive effects of Bacilli.

- Improves feed efficiency and performance.
- Produce enzymes targeted to what the animal is consuming.
- Decrease health challenges by lowering the load of pathogenic bacteria.
- Maintains normal gut function.
- Allows livestock to fight disease on their own.

The resilience and versatility of *Bacillus* allow this new technology to be used across species and feed types.

Overview:

- Palisade is comprised of
 - Two species of *Bacillus* bacteria
 - Essential oils targeted to improve gut health.
- *Bacillus* bacteria have been shown to:
 - Produce enzymes according to the type of diet the animal is consuming.
 - Motile (able to move on their own) and able to actively seek pathogens.
 - Direct inhibition of bacterial pathogens due to Bacteriocin production (natural antibiotics)
 - Enhance the mucus layer in the gastrointestinal tract (GIT), preventing pathogens from adhering to the GIT.
 - Exclude pathogens from binding by occupying the binding sites they would use.
 - Increase cytokine production by upregulating the immune system.

- The *Bacillus* probiotics have been extensively tested for survivability in most feed manufacturing processes and have shown excellent and repeatable results.
 - Liquid feeds
 - Low Moistures Blocks/tubs
 - Pelleted feed
 - Mineral or meal mixes

- Results from a recent field study with Palisade fed to steers grazing Kansas native range.
 - Reduced fecal aNDF by an average of 3.8 percentage units.
 - This is an indicator of how well the forage has been digested.
 - Decreasing the aNDF indicates increased extent of forage digestion.
 - Improved ADG by 0.14 lbs. compared to the control.

- Essential oils are added to help improve the benefits of Palisade.
 - Our blend of EO have been designed to maintain gut health.
 - Maintaining gut health impacts the animal's health and productivity.
 - A healthy gut = a healthy animal, about 80% of the immune system starts in the gut!
 - A healthy gut increases nutrient absorption allowing the animal to perform to its genetic potential.

Applications:

Palisade should be used to:

Lower inflammation
 Promote gut health and repair
 Maximize ration digestibility through enzyme activity

Palisade should be fed to:

Growing and finishing cattle
 Developing replacements
 Cows
 Small ruminants

Feeding directions:

Palisade is fed at a rate of 1 g/h/d to deer and small ruminants, 2 g/h/d for beef and dairy cattle.

Supplement Feeding rate, lb./d	Deer, Small Ruminants	Cattle
	Lbs. Palisade / ton supplement	
0.25	17.6	35.2
0.5	8.8	17.6
1.0	4.4	8.8

Suthers Solutions provides practical and cost-effective technologies that address real world production issues so that producers can produce wholesome, healthy animals that perform. profitably.