



# Fortillus<sup>TM</sup>

## Defend The Gut

### Multi-Species



## The Problem Is In The Gut

Hundreds of millions of dollars are spent on interventions to manage disease in livestock. The most impactful animal diseases are often intestinal in nature.

**THE INTESTINAL BARRIER IS REGULARLY EXPOSED TO UP TO 10 TRILLION MICROORGANISMS.<sup>1</sup>**

Every day, through their environment, animals are exposed to pathogens, including *Clostridia*, *Salmonella* and *Escherichia coli*. This exposure can impact the microbiota of the gastrointestinal (GI) tract.

### STRESS + PATHOGENIC BACTERIA = GUT HEALTH CHALLENGE

Under stress events, both the mucosal layer and tight junctions are negatively impacted, often leading to inflammation and reduced integrity of the intestinal barrier. This breakdown in the tight junctions between the epithelial cell membranes allows for intestinal permeability by pathogenic organisms like *Clostridia*, which can make cattle more susceptible to diseases, while also reducing performance and profitability.

### THE SOLUTION: ACTIVE MICROBIALS

To optimize animal health, performance and profitability, you must optimize intestinal health.

### BENEFITS OF ACTIVE MICROBIALS:

- **Positively impact** intestinal bacterial populations
- **Improve** resistance to disease
- **Decrease** shedding of pathogens
- **Increase** intestinal immunity
- **Lessen** disease symptoms
- **Reduce** *Clostridia* and other pathogenic bacteria
- **Improve** overall health

### Stress Factors:

- Heat or cold stress
- Diet changes
- Other diseases
- Handling
- Pre- and post-partum
- Changes of cattle in pen or adding cattle to herd
- Limited water supply or low water quality
- Mold mycotoxins
- Overall feed quality



## SELECTING THE RIGHT ACTIVE MICROBIAL

FORTILLUS contains a unique, patented spore-forming strain of *Bacillus subtilis*, which was isolated from animals who had survived a high exposure to *Clostridium perfringens* in the environment.

- 1 DOES YOUR PRODUCT USE AN UNDERSTOOD AND PROVEN MODE OF ACTION?**
- 2 HAS YOUR PRODUCT UNDERGONE INVIVO AND INVITRO RESEARCH TO PROVE IT'S EFFICACY AGAINST A BROAD SPECTRUM OF PATHOGENS?**
- 3 DOES YOUR PRODUCT HAVE A PROVEN THERMOSTABILITY AND GI TRACT STABILITY?**
- 4 IS YOUR PRODUCT COMPATIBLE WITH COMMON ANTIBIOTICS AND ORGANIC ACIDS?**

## BROAD SPECTRUM PATHOGEN INHIBITION

A zone of inhibition test examines bacteria sensitivity and resistance to certain compounds. The size of the zone surrounding the common disk on the plate is an indication of microbial susceptibility to the compound.

## STABILITY AND COMPATIBILITY OF YOUR ACTIVE MICROBIAL

*Bacillus subtilis* of FORTILLUS has been tested both internally and externally to confirm the stability and compatibility of the product under environmental conditions and in different feed matrices.

## FEEDING INSTRUCTIONS:

Feed Fortillus during times of stress, including but not limited to:

- When new feeds are introduced
- Changes in the weather
- When animals are off feed
- Anytime loose manure is observed
- When animals are moved between groups

**Suggested Feeding Rate: 5 grams per animal per day**  
**Available in a 1 kg pouch**

**With Over 15 Years Of Research, The *Bacillus Subtilis* In Fortillus Has Proven Efficacy Against *Clostridia* And Other Pathogenic Species.<sup>2</sup>**

### References:

1. Vighi, G., F. Maruccci, L. Sensi, G. D. Cara and F. Frati. 2008. Allergy and the gastrointestinal system. *Clinical & Experimental Immunology*. 153:3-6. Doi:10.1111/j.1365-2249.2008.03713.
2. Lin, et al. 2007. United States Patent 7, 247, 299.

## Mode of Action

Once the *B. subtilis* spores in FORTILLUS are ingested, they begin to germinate and produce lipopeptide surfactants. These surfactants then break into the *Clostridia* cell wall, causing it to release its cytosol, resulting in death of the microorganism.<sup>2</sup>

## Multi-Species



**Fortillus™**  
**Defend The Gut**

Twenty-four hours a day, 365 days a year, throughout the entire life cycle and through all stages of life, your livestock are exposed to harmful environmental pathogens. Feed FORTILLUS active microbial daily to KNOCK OUT harmful bacteria and encourage beneficial bacteria while promoting a healthy GI tract.