

ENTEROSURE®

ENTEROSURE® is an effective proprietary blend of synergistic probiotic *Bacillus* strains (PB6, FxA, and G3). Through multiple proven modes of action, ENTEROSURE works to support a resilient gut. It is a proven protection against pathogens, including *Clostridium perfringens*, *Salmonella*, and *Escherichia coli* while simultaneously promoting, restoring, and maintaining healthy bacteria.

Pathogen inhibition is crucial in the overall strategy for managing intestinal health challenges, but ENTEROSURE goes to the next level. While pathogenic bacteria can coexist in the intestinal tract and cause minimal harm to the host, they pose a significant risk of clinical disease if they colonize and cross the intestinal barrier into the body.

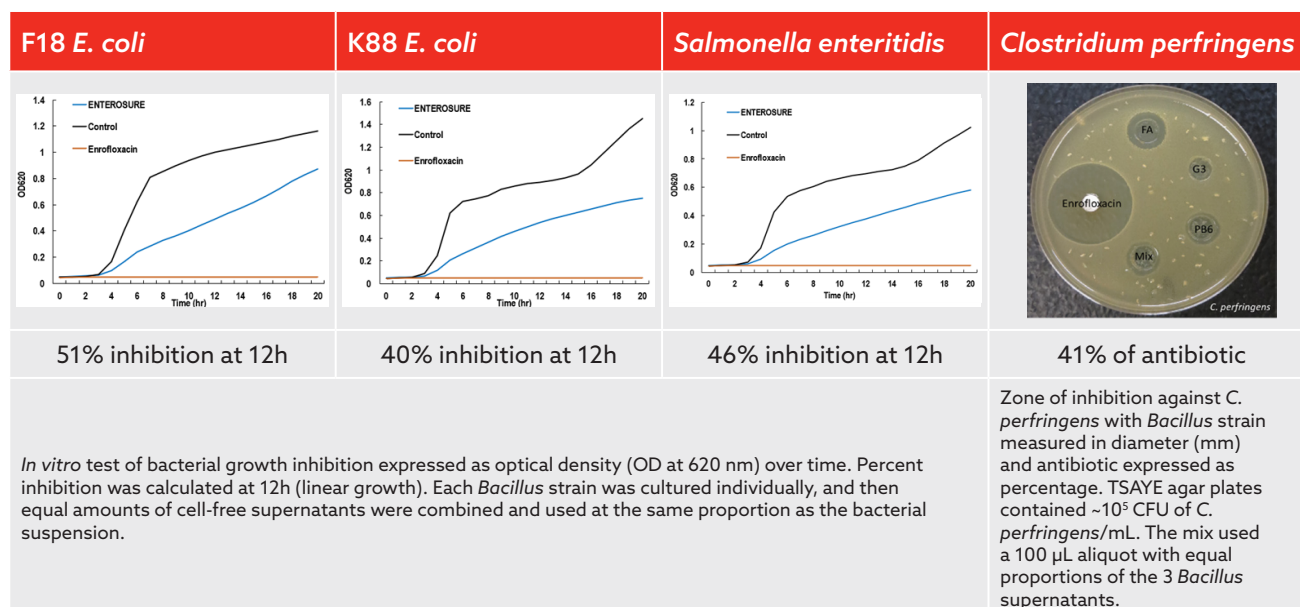
Table 1

Bacillus strains in ENTEROSURE®.

Strain ID	Species	Activity ¹
PB6	<i>Bacillus subtilis</i>	Bactericidal and inhibitory effects vs. <i>Clostridium</i> , <i>Campylobacter</i> , <i>Listeria</i> , <i>Streptococcus</i> , <i>Rhodococcus</i>
FxA	<i>Bacillus subtilis</i>	Inhibitory activity vs. <i>E. coli</i> and <i>Salmonella</i>
G3	<i>Bacillus licheniformis</i>	Inhibitory activity vs. <i>E. coli</i> and <i>Salmonella</i>

Figure 1

The blend of PB6, FxA, and G3 has shown efficacy *in vitro* to inhibit common pathogenic bacteria:¹



ENTEROSURE® also has proven efficacy in the field:

These nursery barns had a history of severe diarrhea outbreaks related to pathogenic *E. coli*, both K88 and F18. The use of antibiotics and mortality had doubled over time during the outbreaks. The antibiotic program included EXCENEL® and ENROFLOX® via intramuscular injections, as well as gentamicin and EQUISUL® in water during the outbreaks. ENTEROSURE was used at 1 lb/ton of feed.

Figure 2

Nursery closeout 1. Midwest, October to December 2022. A total of 7,668 nursery pigs.²

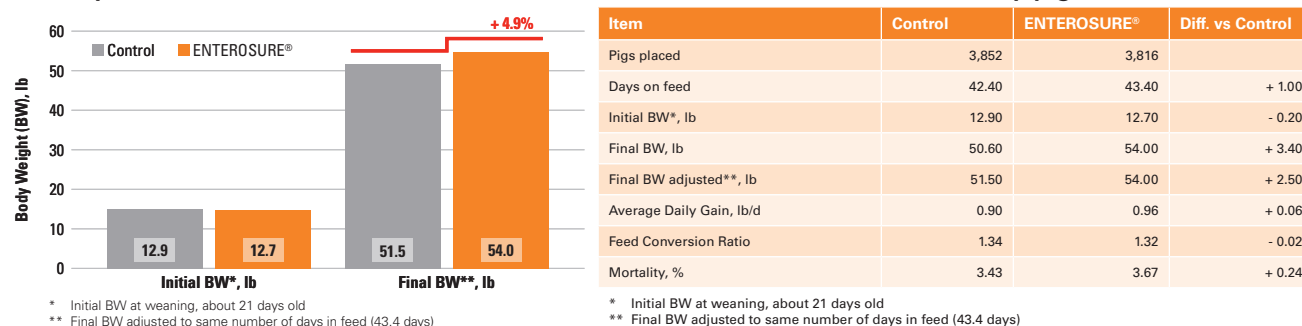
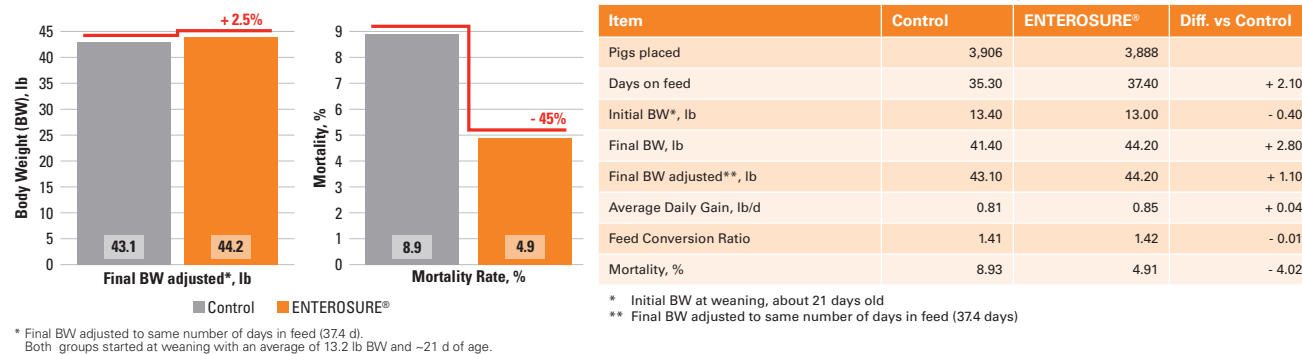


Figure 3

Nursery closeout 2. Midwest, February to March 2023. A total of 7,794 nursery pigs.²



ENTEROSURE key features:

- Supports intestinal health, resulting in a more productive and healthy herd
- Delivers research-proven efficacy of a blend of three proprietary *Bacillus* strains against a broad range of pathogens *in vitro* and *in vivo*
- Provides demonstrated safety in livestock and poultry
- Heat stable during pelleting, packaging, and storage
- Compatible with a wide range of feed ingredients including mineral/vitamin premixes
- Compatible with organic acids and most antibiotics

References:

1. *Bacillus subtilis* PB6 Inhibits a Broad Range of Clostridial Isolates From Poultry, Swine And Ruminants, WP-08-00049.
2. Validation of ENTEROSURE® in Commercial Production, TD-23-9069.



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