CLOSTAT™

BALANCED FROM THE INSIDE OUT

KEMIN®
INTESTINAL HEALTH

CLOSTAT™ contains a proprietary, patented strain of *Bacillus subtilis*, PB6. PB6 is a unique, naturally occurring spore-forming microorganism. Kemin identified and selected the specific strain of PB6 because it secretes an active substance that helps maintain the balance of microflora in the intestinal tract of poultry and livestock.

Features

- Contains PB6, a unique strain of *Bacillus subtilis*.
- Stable during processing and packaging, when blended with other feed ingredients, and under normal commercial pelleting conditions.
- Proven efficacy in research studies.
- An active microbial from Kemin.

Benefits

- CLOSTAT, formulated with PB6, provides consistent performance and value.
- Easily mixed into swine diets to ensure that the proper dose is delivered through the feed to the animal.
- Contributes to stable and healthy microflora in the gut.

Stressors affect Gut Health and Intestinal Integrity

The intestinal tract of healthy swine contains a great number of different microorganisms whose balance promotes digestion, absorption of nutrients and overall health of the gut. These microorganisms are both beneficial bacteria, such as *Lactobacillus* and *Bifidobacterium spp*, and pathogenic bacteria, such as *Escherichia coli*, *Salmonella* and *Clostridium spp*. Under normal circumstances, there is equilibrium between the bene cial and the pathogenic bacteria called eubiosis.

Sows are subjected to many stressors during their reproductive life cycle of breeding, gestation, farrowing and lactation. During these phases, different housing, management and feeding conditions affect the gut micro ora balance. The result may be decreased maternal performance, reproductive

i ciency and increased morbidity and mortality of nursing piglets.

An improved maternal line of sows housed in a typical production unit were fed *Bacillus subtilis* PB6 for 12 weeks. Production parameters on the farm were compared to the previous 12 week period where no *Bacillus subtilis* PB6 was fed:

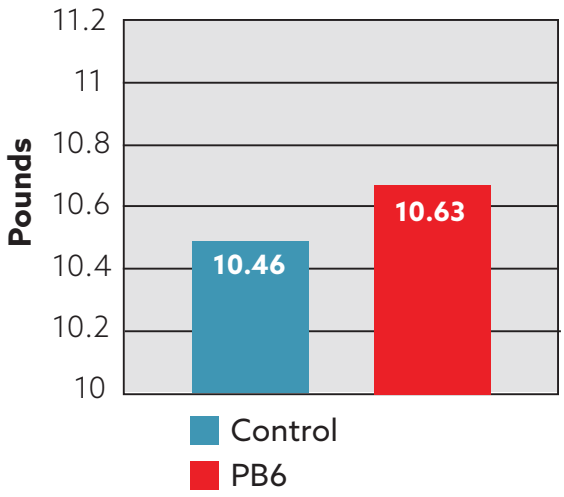
Comparison of Sow Parameters

Item	Previous 12 Weeks	12 Weeks Trial Period
Non-Productive Sow Days	57.70	54.40
Wean to 1st Service (days)	6.36	6.51
Pre-Weaning Mortality (%)	18.41	18.05
Pigs weaned/litter	9.63	9.75
Weaning weight/pig (lbs.)	12.84	12.92
Sow Mortality (%)	9.52	9.05

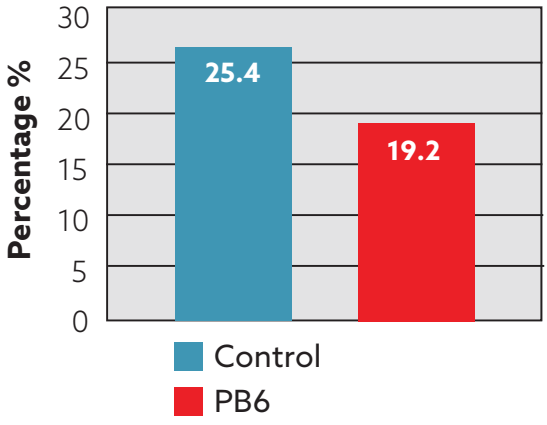
Bacillus subtilis PB6 fed to sows resulted in a 3-5 day improvement in non-productive sow days and a 0.36% reduction in pre-weaning mortality. Pigs nursing *Bacillus subtilis* PB6 sows were heavier (12.92# versus 12.84#) and there were more of them (9.75 versus 9.63) at weaning. Sow mortality also decreased from 9.52 to 9.05%.

A sow lactation trial conducted in a typical production unit:

Piglet Weaning Weights



Piglet Attrition
(Combined Mortality & Culls)



Yersin et. al. 2009, Oral Presentation, Utilization of a direct-fed microbial (Bacillus subtilis PB6) to improve performance of nursing piglets: Comparison of sow, piglet and combination treatment regimens. American Association of Swine Veterinarians Annual Meeting.

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