



HEALTHY SOLUTIONS  
TOTAL NUTRITION



# TOTAL NUTRITION™

SAFE - HEALTHY - EFFICIENT

Through **TOTAL NUTRITION™**, Kemin offers a range of nutritional solutions for raising healthy animals. Kemin understands you need to raise healthy livestock that gives consumers the nutritional and health benefits they are looking for, while also returning a profit. We focus our products and services to help you achieve:

- Safe Solutions
- Healthy Solutions
- Efficient Solutions

Our Total Nutrition solutions can help you feed the world.

[WWW.KEMIN.COM/CLOSTAT](http://WWW.KEMIN.COM/CLOSTAT)  
1-800-752-2864



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# BALANCED— FROM THE INSIDE OUT

## CLOSTAT® Active Microbial

For ideal gastrointestinal balance.



**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.



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 Week 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%.

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## Stressors affect eubiosis

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.

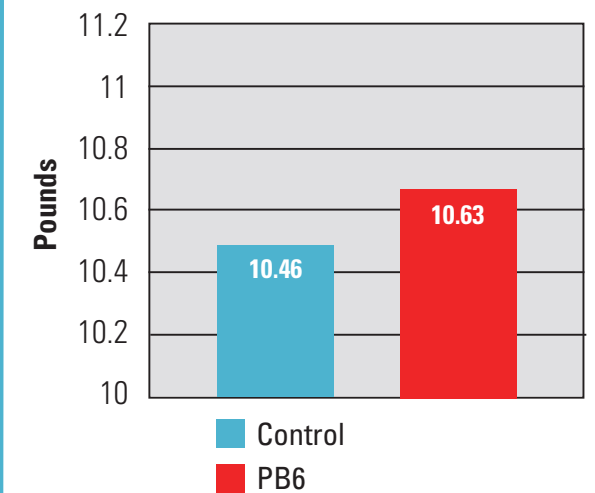
Under normal circumstances, there is equilibrium between the beneficial and the pathogenic bacteria called eubiosis.

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 microflora balance. The result may be decreased maternal performance, reproductive inefficiency and increased morbidity and mortality of nursing piglets.



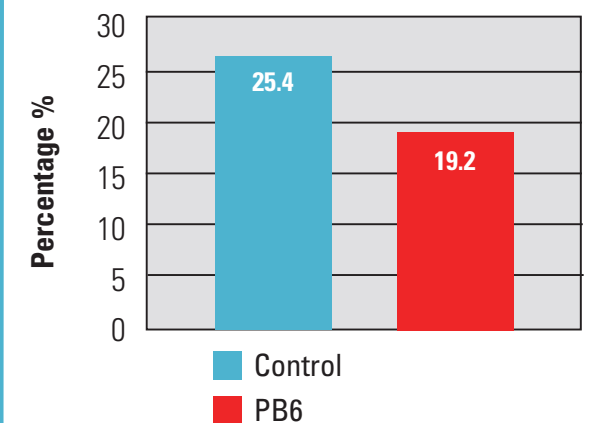
A sow lactation trial conducted in a typical production unit:

## 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.*