



Founded as a nutritional ingredient manufacturer in 1961 by R.W. and Mary Nelson, Kemin Industries, Inc. is a privately owned company headquartered in Des Moines, Iowa (USA). Kemin is a producer of ingredients and inventor of processes that provide nutritional and health solutions for humans and animals.

In today's increasingly health-conscious world, livestock health is far more than just a responsibility – it's an opportunity. At Kemin, we are committed to developing the most advanced nutritional solutions available today. We'll help you deliver optimal well-being – all the way through the food chain.

WWW.KEMIN.COM



HEALTHY SOLUTIONS
TOTAL NUTRITION



BALANCED— FROM THE INSIDE OUT

CLOSTAT® Active Microbial.

For ideal gastrointestinal balance.



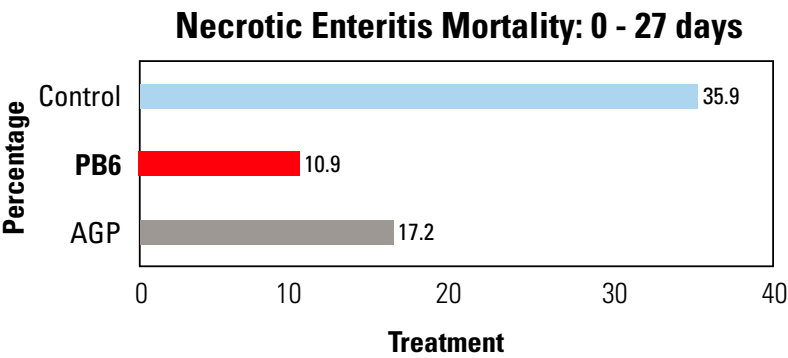
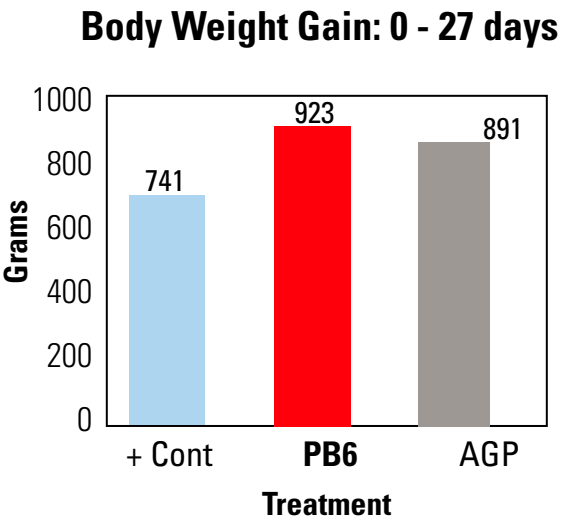
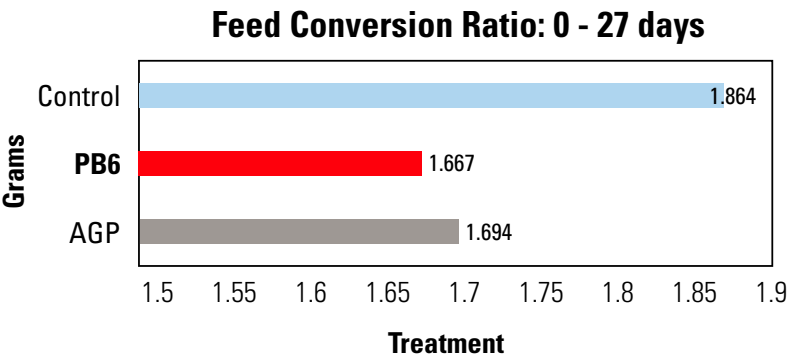
CLOSTAT contains a proprietary, patented strain of *Bacillus subtilis*, PB6. PB6 is a unique, naturally occurring spore-forming microorganism. Kemin identified and selected the specific strain of PB6 because it secretes an active substance that helps maintain the balance of microflora in the intestinal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

Features

- Heat resistant under normal pelleting conditions
- Stability for more than 12 months
- Compatible with organic acids and most antibiotics
- Inhibitory action against pathogenic organisms (U.S. Patent 7,247,299).

Benefits

- Positively impacts gut microflora
- Improves gut health
- Contributes to the overall well being of poultry and livestock



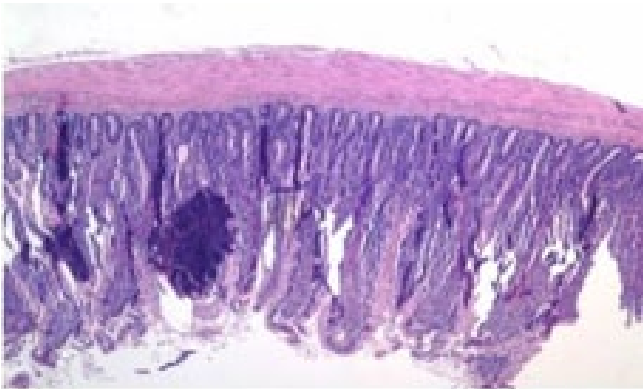
Boren et. al. 2007. Oral presentation, Dose comparison of the efficacy of CloSTAT for control of experimentally induced necrotic enteritis by *Clostridium perfringens* in broiler chickens. International Poultry Expo.

STRESSORS AFFECT EUBIOSIS

The poultry gut contains more than 400 strains of bacteria – beneficial bacteria such as *Lactobacillus* and *Bifidobacterium spp.* and pathogenic bacteria such as *Escherichia coli*, *Clostridium perfringens*, *Salmonella*. Under normal circumstances, there is equilibrium between the beneficial and pathogen bacteria called eubiosis. Stressors such as heat, humidity, overcrowding, and even antibiotics may kill beneficial bacteria causing an imbalance in the gut microflora. The result may be decreased performance, increased morbidity and mortality.

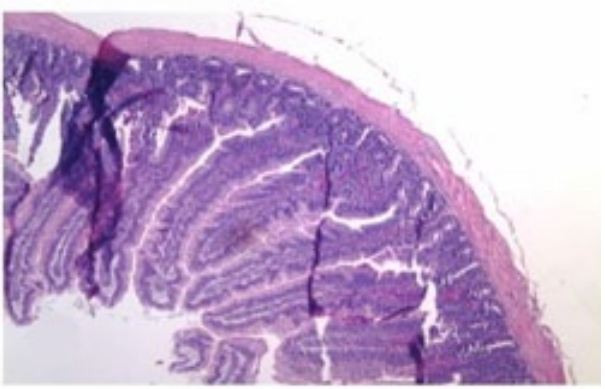


Chicken gut **without CLOSTAT**



Villus Area Index: 0.84^b

Chicken gut **with CLOSTAT**



Villus Area Index: 0.99^a

^{a,b}Villus Area- calculated from villus height and width at half height. P<0.05

Source: Mingan Choct, 2004, Technical Report on Investigation of Acid LAC and CloSTAT as alternatives to AGPs in Broiler Chickens challenged with *C. perfringens*, University of New England, Australia.