

CLOSTAT® WS

Active Microbial: Gut Health Solution for Water

CLOSTAT® WS (water soluble) contains a proprietary strain of *Bacillus subtilis* PB6 — a unique, naturally-occurring probiotic that helps maintain the balance of microflora in the gastrointestinal (GI) tract of livestock and poultry. CLOSTAT WS is delivered through the water via a medicator and does not require any diet formulation changes.

MODE OF ACTION: HOW DOES PB6 WORK?

STEP 1

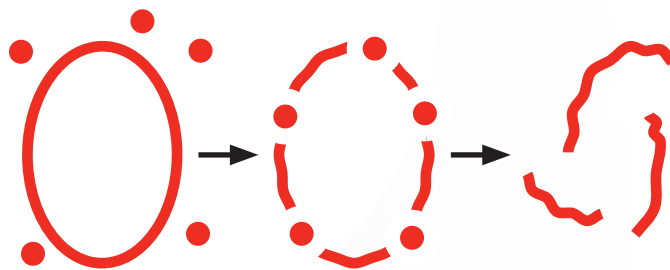
Animal **ingests**
B. subtilis PB6 spores

STEP 2

Spores **germinate** by
low pH and bile salts

STEP 4

The secondary metabolites **disrupt** the cell wall of the pathogen causing the loss of cytoplasmic contents, which ultimately **kills** the pathogen



STEP 3

Vegetative cells of *B. subtilis*
PB6 **produce** secondary
metabolites in the intestines

CLOSTAT WS FEATURES AND BENEFITS

- Unique, proprietary spore-forming strain of *B. subtilis* PB6 which was isolated from chickens who had survived a high exposure to *Clostridium perfringens* in the environment
- Enhances health status, resulting in disease resistance/reduction and reduced shedding of pathogens
- Compatible with organic acids and most antibiotics applied through a water medicator
- Highly effective against a wide variety of field isolates such as:

Clostridium perfringens ✓

Clostridium septicum ✓

Clostridium difficile ✓

Clostridium sordellii ✓

Table 1: University field isolations of *Clostridium perfringens*, *Clostridium septicum*, *Clostridium difficile*, and *Clostridium sordellii* demonstrate that *B. subtilis* PB6 has an *in vitro* inhibitory effect in livestock and poultry.

C. perfringens strain	C. septicum strain	C. difficile strain	C. sordellii strain
919 (ISU)	ARK124 (UARK)	677 (UA)	ARK0818 (UARK)
1537 (UA)	ARK126 (UARK)	679 (UA)	
1936 (UA)	ARK307 (UARK)	688 (UA)	
4057 (UA)	T40592 (UGA)	691 (UA)	
ARK07AM (UARK)	51181 (UGA)		
TCP3 (UGA)	D07-20687 (UMN)		
CP6 (UGA)	D07-21793 (UMN)		
CP2 (UGA)			
49824 (UGA)			
008-6130 (UMN)			
008-6429 (UMN)			

RECOMMENDED USE OF CLOSTAT WS

To support gut health and microbial balance, include the product in the water 7 days prior to anticipated Necrotic Enteritis (NE) break and keep the product in for 14 days after NE break.

Table 1. CLOSTAT® WS application guidelines

CLOSTAT® WS use	STOCK SOLUTION		
	Parts of CLOSTAT® WS (161 gram pouch)	Parts of tap water	Meter into drinking water at a rate of
Drinking water	1	5	1:128*

*1:128 equals 1 ounce of stock solution per 128 ounces (1 gallon) of water.

Note: Level of free chlorine in drinking water should be less than 1 ppm free chlorine.

Adapted from:

1. Antibacterial Spectrum of CLOSTAT® Against Enteric Pathogenic Bacteria in Animals, WP-09-00010.
2. *Bacillus subtilis* PB6 Inhibits a Broad Range of Clostridial Isolates from Poultry, Swine and Ruminants, WP-08-00049.

Learn more at kemin.com/clostat-poultry.



Kemin Animal Nutrition and Health
1900 Scott Avenue | Des Moines, Iowa USA 50317
1-800-752-2864