KEMIN
Compelled by Curiosity™

A TARGETED APPROACH TO IMPROVING CATTLE HEALTH

THE SCIENCE BEHIND CLOSTAT® *BACILLUS SUBTILIS* PB6 ACTIVE MICROBIAL FOR BEEF CATTLE

CLOSTAT® is a *Bacillus subtilis* with efficacy proven through large pen commercial data. Through enhanced intestinal health, CLOSTAT improves overall health and performance of beef cattle. In the large pen commercial study outlined on the back, you'll see how CLOSTAT will positively impact your bottom line.

INTESTINAL HEALTH

IMMUNE SYSTEM HEALTH

ANIMAL HEALTH

THE FACTS ON BOVINE RESPIRATORY DISEASE (BRD)

BRD affects **16.2% of all cattle placed in feedlots**, resulting in economic losses exceeding

$2 BILLION PER YEAR.[1]

BRD is potentiated by **stressors like shipping, receiving, comingling and inclement weather,** often resulting in cattle succumbing to

BACTERIAL PNEUMONIA.

BRD treatment costs account for

$75 MILLION IN ANNUAL LOSSES.[2,3]

BRD WEAKENS THE IMMUNE SYSTEM

and damages the upper respiratory tract, **allowing bacterial pathogens to grow.**[4]

See all the research at **kemin.com/clostat-beef**.

LARGE PEN COMMERCIAL RESEARCH SHOWS BENEFITS OF CLOSTAT®

A large commercial yard in the Texas Panhandle studied the effects of CLOSTAT on health outcomes of low-risk yearling steers. The study evaluated 1,050 steers on feed for 198 days.[5]

The effect of supplementing CLOSTAT 500 (*B. subtilis* PB6) on yearling steers in a commercial feedyard on health, *Salmonella* spp. prevalence, feedlot performance and carcass characteristics[5]

Item	Control	CLOSTAT	*P*-value
Steers, *n*	1,050	1,050	
Days on feed (DOF)	196	198	0.09
Growth Performance*			
Arrival body weight, lb.	678	680	0.71
Final body weight - deads in, lb.	1,413	1,442	0.05
Final body weight - deads out, lb.	1,488	1,493	0.29
Hot carcass weight (HCW), lb.	957	959	0.37
Dry matter intake (DMI), lb.	22.16	22.36	0.14
Total gain, lb.	730	761	0.05
Average daily gain (ADG), lb./d	3.74	3.83	0.08
Feed:Gain	5.93	5.81	0.06
Animal Health			
Total first pull rate, %	13.43	10.38	0.03
Respiratory morbidity (1st treat), %	12.76	9.14	< 0.01
Respiratory morbidity (2nd treat), %	3.33	2.10	0.03
Total outs (deads & removals), %	6.95	5.05	0.06
Shipped, *n*	977	997	
Salmonella			
Salmonella fecal counts, CFU/g	2.04 $\log_{10}$	1.59 $\log_{10}$	0.07
Lymph node *Salmonella* prevalence, %	28.66	15.48	0.46

*Deads and removed steers included in data reflecting actual financial gain or loss from dead and removed animals.

CLOSTAT from Kemin is a unique, proprietary strain of *B. subtills* PB6 that effectively targets and disrupts *Clostridium perfringens*, *Salmonella* and *Escherichia coli*, resulting in better overall intestinal health in beef cattle. Through its three modes of action — pathogen inhibition, reduction in intestinal inflammation and quorum quenching — it has been shown to support intestinal health, and therefore the immune system. **Supplementing with CLOSTAT results in an ROI of 6:1 with decreases in BRD incidence and associated antimicrobial treatment costs.**

CLOSTAT IS THE PROBIOTIC OF CHOICE FOR IMPROVED CATTLE HEALTH.

Ready to see what it can do for your feedyard? Visit **kemin.com/clostat-beef**.

DISCOVER MORE DATA ON CLOSTAT

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References:

1. National Animal Health Monitoring System (NAHMS) USDA. (2013). Animal Plant Health Inspection Service-National Animal Health Monitoring System; Ft. Collins, CO: Feedlot 2011. Part IV: Health and Health Management on U.S. Feedlots with a Capacity of 1,000 or More Head.
2. Holland, B. P., et al. (2010). Effect of bovine respiratory disease during preconditioning on subsequent feedlot performance, carcass characteristics and beef attributes. Journal Animal Science. 88:2486-2499 doi.org/10.2527/jas.2009-2428.
3. Peel, D.S. (2020, July). The Effect of Market Forces on Bovine Respiratory Disease. Veterinary Clinics of North America: Food Animal Practice. ;36(2):497-508. doi: 10.1016/j.cvfa.2020.03.008. PMID: 32451038.
4. Galyean, M.L., G.C. Duff and J.D. Rivera (2022). Galyean Appreciation Club Review: revisiting nutrition and health of newly received cattle-what have we learned in the last 15 years? Journal Animal Science. 2022 Apr 1;100(4):skac067. doi: 10.1093/jas/skac067. PMID: 35246687; PMCID: PMC9030209.
5. Word, A.B., et al. (2022). The effect of supplementing CLOSTAT® 500 (*Bacillus subtilis* PB6) to yearling steers in a commercial feedyard on health, *Salmonella* spp. prevalence, feedlot growth performance and carcass characteristics. Translational Animal Science. https://doi.org/10.1093/tas/txac131.

23.01466
PTP-11911
Rev. Apr 2024