

ProTernative™

The Professional Alternative™

stress formula



Improve Feed Consumption and Health
During Periods of Stress

LALLEMAND ANIMAL NUTRITION

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ProTernative Stress Formula

Stress has a negative impact on cattle

Reduced feed intake
 Reduced response to vaccination
 Increased incidence of BRD and other diseases
 Increased death loss

Reduced weight gain
 Poorer feed conversion
 Reduction in carcass quality

Stress has an even greater impact on cattle in natural beef programs

Lost purchase price premium
 Lost sales price premium
 Fewer carcasses meeting specifications
 Inability to meet the demand for the branded product

Sick cattle eat less

A 7-year Study Comparing the Dry Matter Feed Intake (as a percent of body weight) of Healthy and Diseased Newly Arrived Calves

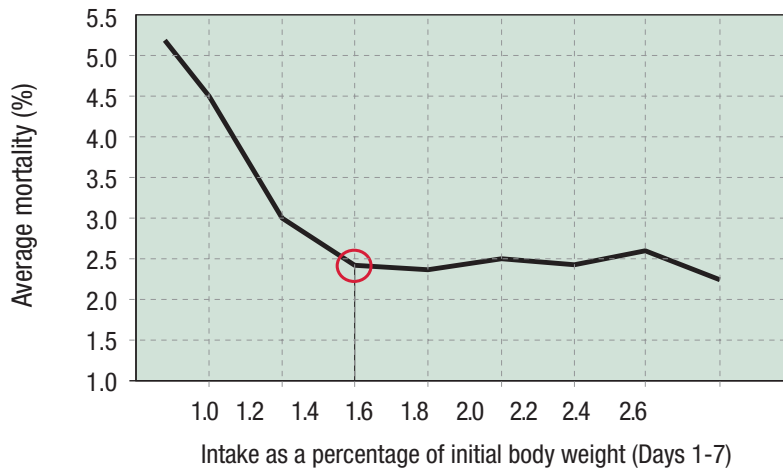
Days in Feedyard	Healthy (SD)	Diseased (SD)
0-7	1.55 % (0.51)	0.90 % (0.75)
0-14	1.90 % (0.50)	1.43 % (0.70)
0-28	2.71 % (0.50)	1.84 % (0.66)
0-56	3.03 % (0.43)	2.68 % (0.68)

Diseased cattle eat less as a percentage of their body weight than healthy cattle.

Hutcheson, et al., 1986

Low-consuming cattle have a higher mortality rate

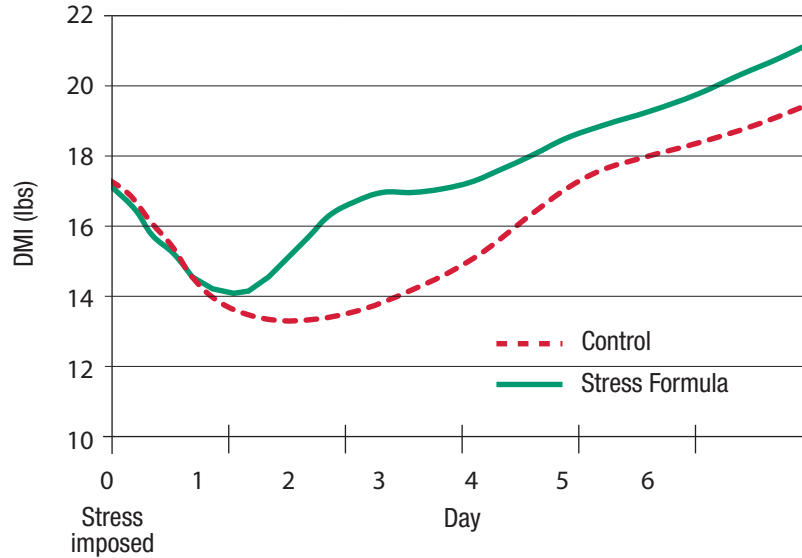
Population Data from More Than 500,000 Head of U.S. Feedyard Cattle



Data shows that when cattle eat less than 1.6% of their body weight during the first seven days on feed they are more likely to get sick and die than the cattle that eat more than 1.6%.

ProTernative Stress Formula improved feed intake when cattle need it most

Effect of ProTernative Stress Formula on Feed Intake



Cattle fed ProTernative Stress Formula tended ($P < .1$) to eat more than the control group after stress was imposed upon them.

ProTernative Stress Formula decreased the number of cattle treated for bovine respiratory disease (BRD)

Morbidity By Replicate
Percentage Of Calves Treated

	Control	Treated
Load 1	22.2%	13.1%
Load 2	24.0%	13.1%
Load 3	25.8%	15.1%
All loads	24.0%	13.8%*

* $P < .04$

Significantly fewer calves fed ProTernative Stress Formula were treated for BRD.

Control calves were 1.99 times more likely to be treated for BRD.

Texas Tech University studies demonstrated the effectiveness of ProTernative Stress Formula in improving feed intake and reducing the number of BRD treatments.

How it works

ProTernative Stress Formula Improves GI Tract Health especially in Times of Stress

Saccharomyces cerevisiae boulardii CNCM I-1079, the specific yeast in ProTernative Stress Formula, has been proven effective in studies around the world.

- Neutralize clostridial toxins^{1,2,3}
- Improve gut integrity⁴
- Reduce pathogenic Gram-negative bacteria

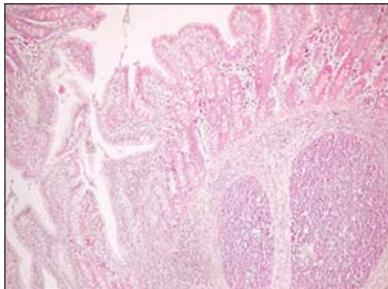
Effects on Villi Height and Crypt Depth in the Small Intestine

Intestinal Measurement	Control	ProTernative Stress Formula
Villi (µm)	194.3	243.0*
Crypt (µm)	133.2	177.2*

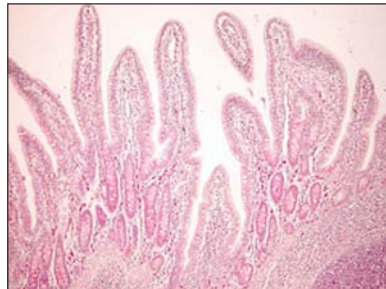
*P < .001

ProTernative Stress Formula protects the small intestine from the effects of stress.

Effect on Histomorphometry of Epithelial Cells



Control



ProTernative Stress Formula treated

Increased villi length and crypt depth results in increased surface area which allows greater absorption of nutrients.

Product forms

ProTernative Stress Formula is Available in Three Convenient Sizes

Unit Size	Head Days
500 g	2,000
20 kg	40,000
50 lb Farm Pack	800

Mix 500 mg of ProTernative Stress Formula/head/day or 1 oz/head/day of the Farm Pack into the concentrate in the receiving diet .

^{1,2} Castagliuolo I. : 1996, 1999 ; Infect Immun.
³ Czerucka D., 1999 : Gastroenterol
⁴ Di Giancamillo A. 2002. ; DPP 2003