

IMMUNITY

KemTRACE® Chromium is a highly bioavailable, organic source of chromium propionate that helps improve glucose utilization for increased cellular energy and function. This results in better animal maintenance, growth and immunity.

KemTRACE Chromium is supported by more than 20 years of Kemin research and is the only U.S. Food and Drug Administration-reviewed form of chromium propionate.

Animals with frequent immune challenges may experience



DECREASED PERFORMANCE



INCREASED METABOLIC FUNCTION



MORE DISEASE SUSCEPTIBILITY



MORE HEALTH TREATMENTS



DECREASED FEED INTAKE AND EFFICIENCY

= LOST PROFITABILITY



In order to combat an immune challenge,

an active immune system in a Holstein steer requires more than 2,000 kcal in a 24-hour period. The glucose meant for economically relevant tissues will instead be used to support this immune function, reducing total production and profitability.¹

AN ACTIVE IMMUNE SYSTEM REQUIRES
2,000+ kcal
IN A 24-HOUR PERIOD

Impact of chromium on immunity

Feedlot cattle are often faced with immune challenges demanding an increase in energy efficiency to prevent sickness. During these challenges, glucose metabolism increases, thus increasing chromium utilization and ultimately leading to a chromium deficiency. Research conducted at Texas Tech University suggests that **supplementing the diet with chromium propionate enhances the acute phase response of steers to an immune challenge** (Figure 1).²

Additional studies examining stressed beef cattle reported that the number of steers treated at least once tended to linearly decrease with increasing chromium propionate supplementation.

Supplementation of chromium propionate reduced the number of steers treated at least once by 18.37% compared to non-supplemented steers (Table 1).³

THE BOTTOM LINE

Mounting an immune response is energetically taxing and requires the reprioritization of nutrients that would otherwise be destined for productive purposes.¹ Upon activation, immune cells become obligate glucose utilizers.⁴ Improved glucose availability to active immune cells increases their longevity and function.⁵⁻⁸ Chromium supplementation primarily acts to improve insulin sensitivity, so more glucose can enter the cell. The additional glucose allows more energy to be available for proper cell function.

Figure 1: Acute phase response of steers to a lipopolysaccharide (LPS) challenge²

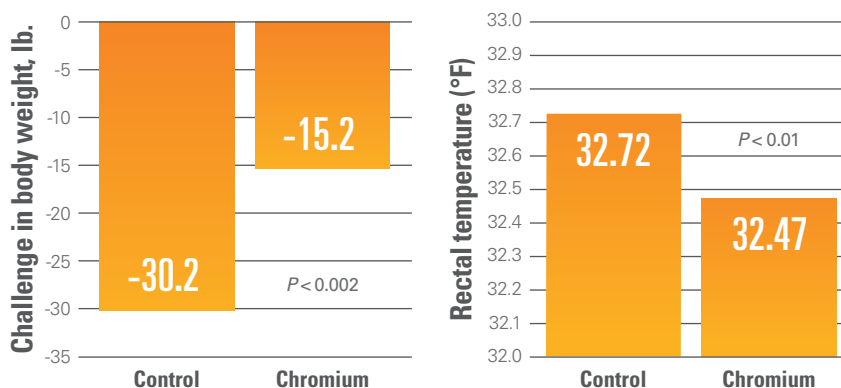


Table 1: Chromium performance and morbidity

	Chromium inclusion level, ppb		Chromium improvement		
	0	300	Linear contrast (P-value)	0 vs. 300 gain	%
Initial body weight, lb.	509.3	507.1	0.29	-	-
Final body weight, lb.	703.3	720.9	0.08	17.6*	2.5
Average daily gain, lb.	3.46	3.84	0.03	0.38**	11.0
Dry matter intake, lb./d	14.70	15.52	0.12	0.82*	5.6
Gain to feed	0.237	0.247	0.05	0.01*	4.2
Cattle treated at least once, %	25.85	7.48	0.07	18.37**	71.1

*A chromium effect (P ≤ 0.14) was detected. **A chromium effect (P ≤ 0.05) was detected.

KEMIN IS THE SCIENCE BEHIND HEALTHIER CATTLE.

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