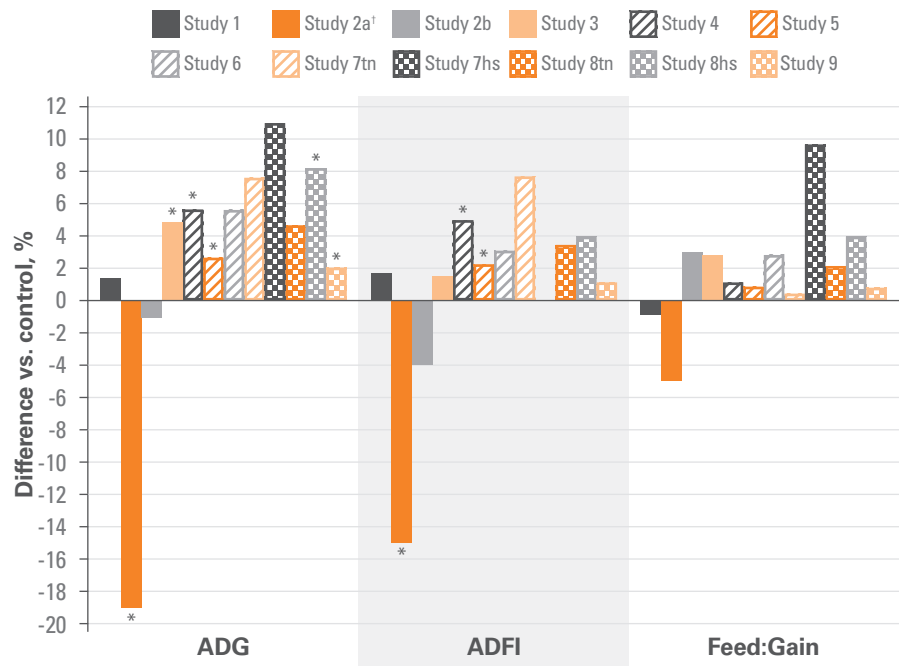


OPTIMIZING GROW-FINISH PERFORMANCE WITH CHROMIUM

KemTRACE® Chromium — the first product of its kind on the market — is a safe, proven trace mineral for use in swine. This highly bioavailable, organic source of chromium propionate increases mobilization of blood glucose into tissues, allowing for improved performance in the pig’s hierarchy of needs. Key uses of cellular energy for swine include maintenance, reproduction and muscle or fat deposition. The net benefit is increased production and profitability in your operation.

Benefits of chromium propionate in grow-finish

In nine finishing studies where KemTRACE Chromium was supplemented at 200 parts per billion (ppb), an improved growth rate was observed — driven in part by an increase in average daily feed intake (ADFI). This response was likely facilitated by the role of chromium propionate in potentiating the action of insulin, resulting in increased glucose uptake at the cellular level. Rapid growth of animals requires efficient utilization of supplemented energy. This is particularly important during periods when adequate feed intake is compromised, such as periods of stress, extreme temperature fluctuations or immune challenges.



tn = thermoneutral, hs = heat stress * Means differ from their respective negative control at $P < 0.05$
[†] Study 2 was a short-term trial designed to look at glucose clearance and insulin kinetics and not for performance measurements.

Figure 1: Summary of chromium propionate on grow-finish pig research

The increased average daily gain (ADG) observed in these nine studies follows the increased daily feed intake stimulated by the chromium propionate supplementation.

Chromium plays an important role in the pig's inflammatory response as well as the pig's response to stress by reducing cortisol (a stress hormone) levels. In a controlled study (Study 8), dietary supplementation with KemTRACE Chromium improved voluntary feed intake by 3.5% in pigs under thermoneutral conditions and 4% in pigs under heat stress conditions. The increased feed intake also improved growth rate and feed efficiency.

Table 1: Summary of results from grow-finish trials supplemented with 200 ppb of KemTRACE® Chromium

Production parameter	Range of improvement*
Final body weight	3-9 lb.
Average daily gain	1-11%
Average daily feed intake	1-7%
Feed conversion	0-10%

* Range of improvement based on the results of nine grow-finish studies
Note: Glucose kinetics experiment (study 2) not included due to fasting procedures.

Table 2: The effect of KemTRACE® Chromium on growth performance of grow-finish pigs supplemented at 200 ppb — a nine-trial summary

	No. pigs	Average daily gain (ADG), lb.			Average daily feed intake (ADFI), lb.			Feed conversion		
		Control	KemTRACE Chromium	Difference (%)	Control	KemTRACE Chromium	Difference (%)	Control	KemTRACE Chromium	Difference (%)
Study 1	500	1.59	1.61	1.26	3.76	3.83	1.86	2.36	2.38	-0.85
Study 2a	24	1.63 ^b	1.32 ^a	-19.02	4.61 ^b	3.92 ^a	-14.97	2.83	2.97	-4.95
Study 2b	32	1.98	1.96	-1.01	6.79	6.52	-3.98	3.43	3.33	2.92
Study 3	250	1.67 ^b	1.75 ^a	4.79	4.20	4.27	1.67	2.51	2.44	2.79
Study 4	258	1.87 ^b	1.98 ^a	5.88	4.91 ^b	5.15 ^a	4.89	2.63	2.60	1.14
Study 5	66,798	1.61 ^b	1.65 ^a	2.48	4.27 ^b	4.36 ^a	2.11	2.66	2.64	0.75
Study 6	16	1.90	2.01	5.79	5.45	5.62	3.12	2.87	2.80	2.44
Study 7^{tn}	20	2.70	2.90	7.41	7.30	7.80	6.85	2.70	2.69	0.37
Study 7^{hs}	20	1.29	1.43	10.85	4.10	4.10	0.00	3.18	2.87	9.75
Study 8^{tn}	24	2.05	2.16	5.37	7.78	8.04	3.34	3.80	3.72	2.11
Study 8^{hs}	48	1.59 ^b	1.72 ^a	8.18	6.11	6.35	3.93	3.84	3.69	3.91
Study 9	804	1.97 ^b	2.01 ^a	2.03	5.80	5.86	1.03	2.94	2.92	0.68

tn = thermoneutral, hs = heat stress ^{ab} Means with different superscript within a row differ $P \leq 0.05$

¹ Study 2 was a short-term trial designed to look at glucose clearance and insulin kinetics and not for performance measurements.

Kemin is committed to quality and safety.

Kemin knows chromium. Only Kemin has invested more than 20 years and millions of dollars toward scientific research, validating the benefits of chromium propionate while bringing this essential trace mineral to millions of pigs around the globe. KemTRACE Chromium is the only FDA-reviewed source of chromium propionate on the market today.



kemin.com/chromium

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