



NUTRITION NOTES

Innovation + Research from Kent Nutrition Group

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SUPPLEMENTAL CHROMIUM IN KENT NEXGEN ADVANCED PIG STARTERS

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Chromium is a trace mineral that helps improve the cellular uptake of glucose, which provides energy to support biological processes such as growth and immunity. Chromax® branded chromium tripicolinate is a scientifically researched source of organic, highly bioavailable chromium that when fed to sows was found to improve the number of pigs weaned as well as having positive effects on carcass leanness when fed to finishing pigs. Our objective was to evaluate Chromax (to supply 200 ppb added Cr) throughout the starter stages (32 days) on nursery performance and economics. Prior to the 32-day test period, we fed all pigs NG 8-13 pellets for the first 8 days post-weaning. We conducted the following study at the Kent Research Farm with 450 pigs and 48 pens per treatment. The average initial starting weight was 12.7 lbs. The data are shown below:

TREATMENTS	NG	NG + Chromax
Days 8-15	-	+
Average Daily Gain ¹ , lb	0.59	0.67
Feed/Gain ²	1.15	1.04
Cost/Lb of Gain ² , cents	48.4	43.6
Net Return ¹ , \$/Pig @ \$0.80/lb Live Weight**	1.45	1.87
Days 8-22		
Average Daily Gain ³ , lb	0.61	0.64
Feed/Gain	1.44	1.39
Cost/Lb of Gain, cents	45.9	44.4
Net Return ⁴ , \$/Pig @ \$0.60/lb Live Weight**	2.99	3.29

*1st 8 days post-weaning pigs were fed NG 8-13 pellets

**value of pig weight gain minus feed cost

¹Chromax effect (P = 0.001); ²Chromax effect (P < 0.01); ³Chromax effect (P = 0.11); ⁴Chromax effect (P = 0.09)

During Days 8 to 15 (1st 7 days on grind and mix), we observed highly significant increases in gains (13.8%), and improved feed efficiencies (10%) along with markedly lower cost of gains (4.5 cents) and improved (P = 0.001) net returns of \$0.42/pig from supplemental Chromax, as opposed to those pigs on the control diets. While there were not significant improvements from supplemental Chromax during Days 8 to 22, we still had positive trends for improved gains (4.9%) and net returns of \$0.30 per pig. We did not find performance improvements from Chromax during the last 18 days of this study.

A follow up study evaluating Chromax in nursery diets was conducted at a contract research site in central Iowa. In this study using 840 pigs (initially 12.4 lb), there were 20 pens containing 21 pigs for each treatment group (Control vs. 200 ppb added Cr from Chromax). In nursery phase 1 (Days 0 to 9) and nursery phase 2 (Days 9 to 20) of the study, pigs fed diets supplemented with Chromax tended to have increased average daily gain. Over the course of the study, significant reductions in mortality and pigs requiring individual treatments were observed in pigs fed Chromax.

Table 2. Effect of Chromax in Nursery Diets		
TREATMENTS	CONTROL	CONTROL + CHROMAX
Days 0 to 9	-	+
Average Daily Gain, lb ¹	0.43	0.45
Average Daily Feed Intake, lb	0.39	0.41
Feed/Gain	0.93	0.91
Cost/lb of Gain, cents	32.9	32.1
Days 9 to 20		
Average Daily Gain, lb ²	0.78	0.82
Average Daily Feed Intake, lb	0.99	1.02
Feed/Gain	1.27	1.26
Cost/lb of Gain, cents	37.3	36.9
Days 0 to 42		
Mortality, % ³	2.6	0.7
Individual pig treatments, % ⁴	8.6	2.4

¹Chromax effect (P = 0.17); ²Chromax effect (P < 0.18); ³Chromax effect (P = 0.03); ⁴Chromax effect (P = 0.002)

Summary

Based on the benefits observed in this series of nursery pig studies, such as improved early performance, improved livability, decreased treatments, and favorable economic responses to added Chromax, we have incorporated organic chromium from Chromax into all of our early wean advanced starters.