



# Zinc from Zinpro Performance Minerals<sup>®</sup> Improves Growth in Feedlot Cattle: Results from a Nine-Study Pooled Analysis



Beef Feedlot

## Summary

- No ZPM × RAC interactions were observed ( $P \geq 0.28$ ), indicating the effects were additive in nature
- ZPM supplementation improved ADG, Feed:Gain, and Final BW on a carcass-adjusted basis ( $P \leq 0.10$ )
- Feeding ZPM increased both dressing percentage and hot carcass weight ( $P = 0.01$ )
- Incidence and severity of liver abscesses were decreased in ZPM supplemented cattle
- Optimum ZPM response was realized at a feeding rate of 60 to 89 ppm (avg = 64 ppm)
- Feeding Zn from Zinpro Performance Minerals represents a reliable program to enhance performance of finishing beef cattle

## Economics<sup>a</sup>

- Supplementing Availa-Zn at a rate of 60 ppm throughout the finishing period resulted in 10 lb of additional HCW
- This represents a Net Return of more than \$15.00 per head and an ROI of 4 to 1

<sup>a</sup> Economics were based on the following assumptions: 22 lb DMI, 160 days on feed, and \$120/cwt fed cattle

## Background

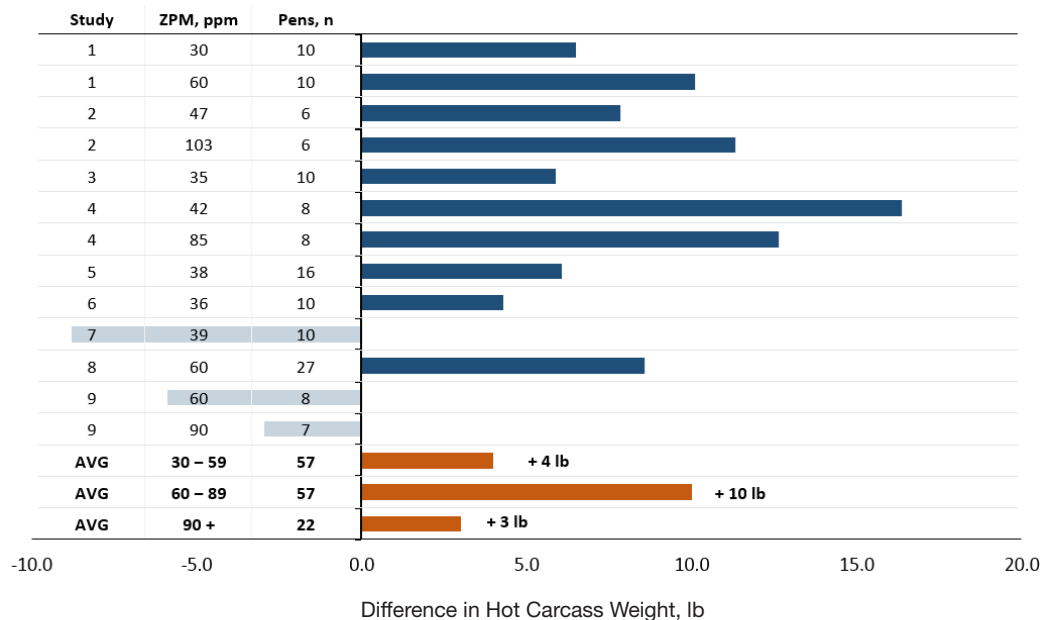
A pooled statistical analysis examined the growth performance and carcass responses associated with feeding supplemental Zn from Zinpro Performance Minerals<sup>®</sup> (ZPM; ZINPRO<sup>®</sup> zinc methionine or Availa<sup>®</sup>Zn) in finishing cattle diets. The analysis represents 249 pens from nine studies conducted between 2001 and 2016 at university and commercial feedlot facilities. In order to be included in the analysis, studies must have met the following criteria:

- Study must have utilized ZINPRO zinc methionine or Availa-Zn in at least one treatment
- ZPM source must have been fed continuously throughout the finishing period
- Study must have included a control treatment as the basis for comparison
- If a beta-agonist was fed, only studies that used ractopamine hydrochloride (RAC) were included
- Individual animal and/or pen data from each study were required for use in the analyses

## Overview

Study	Location	Year	DOF	Head	ZPM (Source)	ZPM (ppm)	RAC (Dose × Duration)
1	Texas	2001	152	270	Both	30/60	--
2	Kansas	2002	215	1,959	ZINPRO	47/103	--
3	Texas	2004	176	180	Availa-Zn	35	--
4	Kansas	2006	181	2,015	ZINPRO	42/85	200 mg × 28 d
5	Texas	2011	154	2,879	ZINPRO	38	320 mg × 28 d
6	Texas	2011	165	1,798	ZINPRO	36	300 mg × 28 d
7	Alberta	2011	253	4,542	Availa-Zn	39	200 mg × 35 d
8	Iowa	2014	87	321	Availa-Zn	60	300 mg × 28 or 42 d
9	Iowa	2016	81	132	Availa-Zn	60/90	300 mg × 28 d

## Effects of Feeding ZPM on Hot Carcass Weight



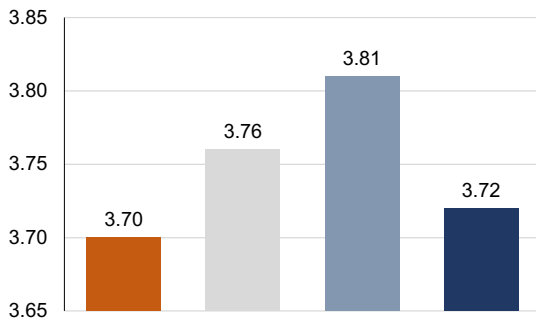
## Effects of ZPM Rate on Performance and Carcass Characteristics of Feedlot Cattle

Item	ZPM rate, ppm				SEM	Contrasts <sup>a</sup>
	0	30 – 59	60 – 89	90 +		
Pens, n	113	57	57	22		
Initial BW, lb	748	744	748	748	3.6	NS
DM Intake, lb	21.8	22.0	22.0	21.9	0.56	NS
<i>Carcass-Adjusted Performance<sup>b</sup></i>						
<b>Final BW, lb</b>	<b>1341</b>	<b>1346</b>	<b>1355</b>	<b>1345</b>	<b>32.3</b>	<b>Q</b>
<b>Daily Gain, lb</b>	<b>3.70</b>	<b>3.76</b>	<b>3.81</b>	<b>3.72</b>	<b>0.180</b>	<b>Q</b>
Feed:Gain	5.85	5.81	5.76	5.85	0.229	Q
Dressing Percent, %	63.65	63.86	63.84	63.59	0.453	Q
<b>Hot Carcass Weight, lb</b>	<b>856</b>	<b>860</b>	<b>866</b>	<b>859</b>	<b>18.8</b>	<b>Q</b>
<b>USDA Prime + Choice, %</b>	<b>46.3</b>	<b>48.6</b>	<b>49.0</b>	<b>52.3</b>	<b>0.09</b>	<b>L</b>
Yield Grade, calculated	3.08	3.05	3.15	3.23	0.095	L
Total Liver Abscesses, %	10.3	10.0	7.0	9.5	1.98	Q, C
A+ Liver Abscesses, %	3.6	2.9	1.6	3.5	0.81	Q, C

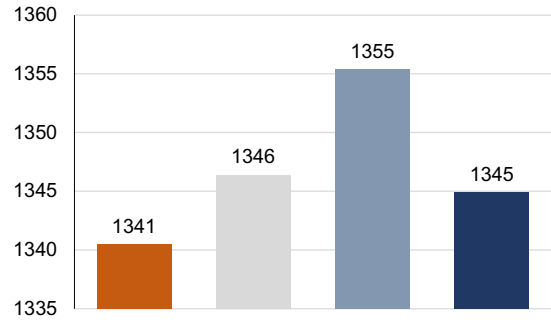
<sup>a</sup> Significant:  $P \leq 0.10$  (NS = not significant; L = linear; Q = quadratic; C = cubic).

<sup>b</sup> Carcass-adjusted final weight = (average pen HCW) ÷ average dressing percent across all pens within study.

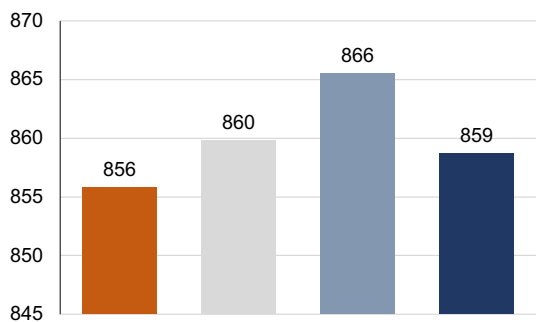
**Carcass-adjusted ADG, lb/d**  
(Quadratic  $P = 0.04$ )



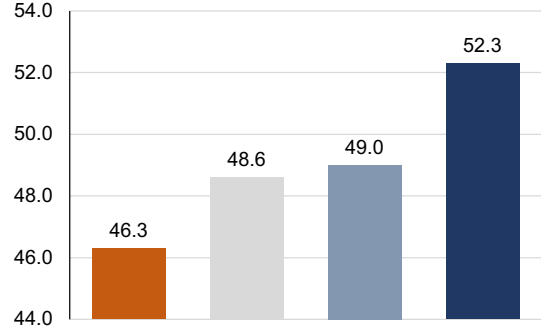
**Carcass-adjusted Final BW, lb**  
(Quadratic  $P = 0.02$ )



**Hot Carcass Weight, lb**  
(Quadratic  $P = 0.01$ )



**USDA Prime + Choice, %**  
(Linear:  $P = 0.01$ )



ZPM Level, ppm: ● 0 ● 30-59 ● 60-89 ● 90+