



Beef Feedlot

Summary

- Availa®4 supplementation improved performance and health of incoming feedlot cattle (high-risk calves, ranch calves, or yearlings)
- Feeding Availa-4 resulted in the following responses vs. inorganic controls:
 - A 0.35 lb increase in DM intake ($P = 0.22$)
 - A 0.09 lb improvement in daily gain ($P = 0.03$)
 - A 20.8% reduction in morbidity ($P = 0.02$)
- Feeding Availa-4 represents a reliable program to improve performance and health of newly received feedlot cattle



Feeding Availa® 4 in Starter Rations Improves Health and Performance of Feedlot Cattle: Results from a 19-Trial Meta-Analysis

Background

A comprehensive meta-analysis was conducted to examine the health and performance responses associated with feeding a combination of organic zinc, manganese, copper and cobalt from Zinpro Performance Minerals® (ZPM) in receiving cattle diets. The analysis represents 426 pens from 19 studies conducted between 1994 and 2017 at university and commercial feedlot facilities.

- All studies evaluated Zinpro Performance Minerals vs. inorganic controls.
- Not all variables were measured within each individual study:
 - DM Intake (n = 16 studies)
 - Daily Gain (n = 19 studies)
 - Morbidity (n = 8 studies)
- Each study was weighted to calculate mean effect size. More precise studies were assigned a greater weight than less precise studies. This precision was influenced by a greater number of pens, less variation between pens, or both.

Overview

Study	Location	Year	Initial BW, lb	Pens/Trt	Head/Pen	Zinpro Performance Minerals		
						Source ^a	Rate, g	Duration, d
1	N. Carolina	1994	454	31	1	4-Plex	10	28
2	Kansas	1996	257	4	20	4-Plex	15	28
3	Kansas	1996	251	4	21	4-Plex	15	28
4	Colorado	1997	471	22	1	4-Plex	15	42
5	Colorado	1998	497	23	1	Availa-4	7	56
6 ^b	Texas	2001	510	2	10	ZINPRO/MANPRO	8.5	28
7	Colorado	2003	582	16	9	Availa-4	7	28
8	Colorado	2006	552	12	10	Availa-4	7	28
9	Iowa	2006	495	4	6	Availa-4	7	28
10	Colorado	2008	508	12	9	Availa-4	7	27
11 ^c	Kansas	2009	794	10	60	Availa-4	7	62
12 ^d	Alberta	2011	619	10	227	Availa-4	7	70
13	Arkansas	2012	527	12	12	Availa-4	7	42
14	New Mexico	2013	552	12	11	Availa-4	2	56
15	New Mexico	2013	552	12	11	Availa-4	6	56
16	Iran	2013	552	5	10	Availa-4	7	42
17	Arkansas	2015	529	10	12	Availa-4	7	42
18	Kansas	2017	511	6	15	Availa-4	7	45
19	Oregon	2017	568	6	5	Availa-4	7	45

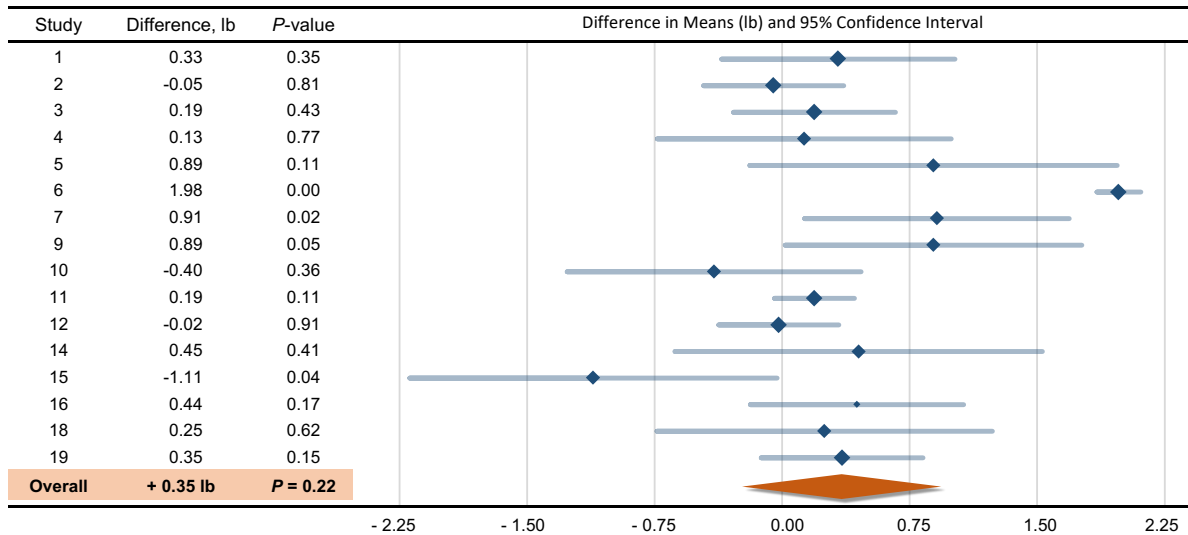
^a Availa-4 = 5.15% Zn from zinc amino acid complex, 2.86% Mn from manganese amino acid complex, 1.80% Cu from copper amino acid complex, and 0.18% Co from cobalt glucoheptonate; 4-Plex® = 2.58% Zn from zinc methionine complex, 1.43% Mn from manganese methionine complex, 0.90% Cu from copper lysine complex, and 0.18% Co from cobalt glucoheptonate

^b Calves supplemented with 50 ppm Zn from Zinpro® 100 and 40 ppm Mn from MANPRO®80 (4.25 g per each based on an 8.5 kg DMI).

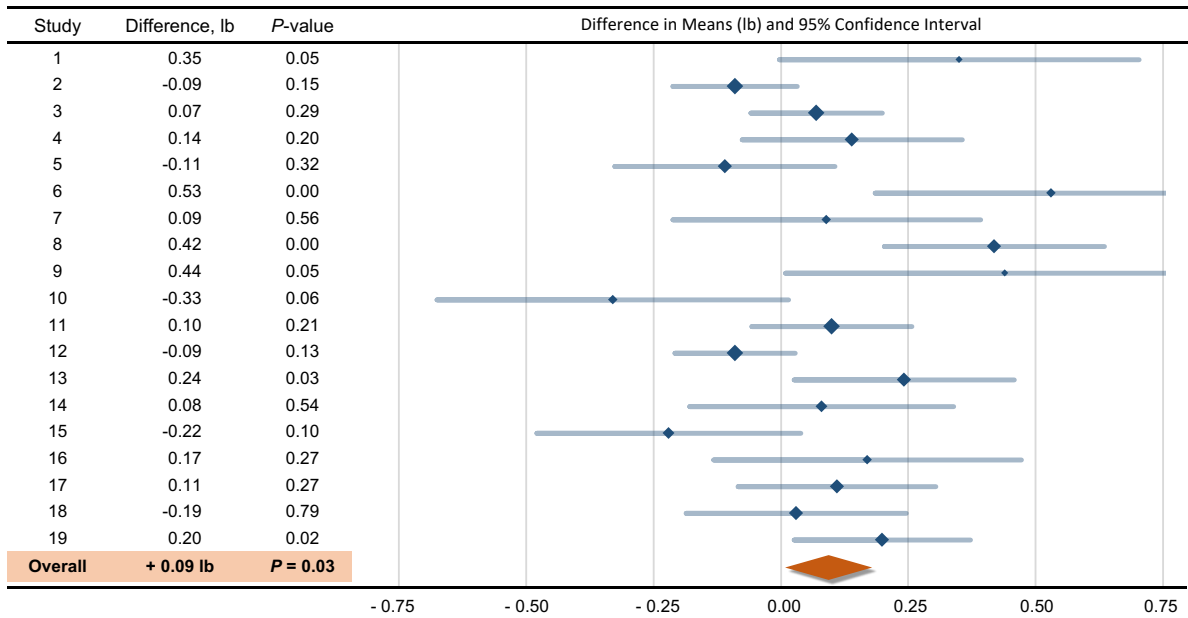
^c Availa-4 fed through day 20; 360 mg Zn from Zinpro 100 fed through day 62. Performance analyzed through day 62.

^d Availa-4 fed through day 30; 360 mg Zn from Availa®Zn fed through day 65. Performance analyzed through day 65.

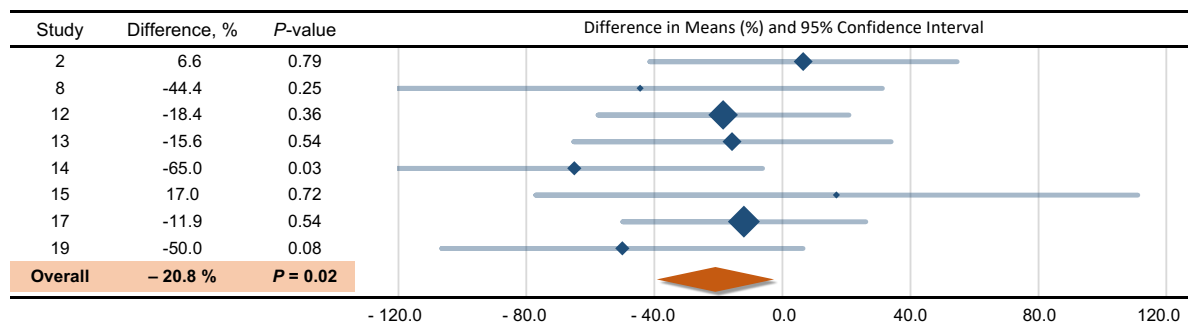
Effect of ZPM Supplementation on Dry Matter Intake of Newly Received Feedlot Cattle



Effect of ZPM Supplementation on Daily Gain of Newly Received Feedlot Cattle



Effect of ZPM Supplementation on Morbidity of Newly Received Feedlot Cattle



Footnote:

- Blue diamonds represent the mean from each individual study and lines indicate variation around that mean
- Size of blue diamond indicates the relative weight of each individual study in the overall analysis
- Orange diamonds represent the weighted mean of all individual studies. Width of the diamond is the variation around that mean.
- A line or diamond crossing the "0.00" line indicates no significant difference ($P \leq 0.05$) between ZPM treatment and inorganic controls