INSIGHTS - A LOOK INSIDE PEER-REVIEW

Feeding Zinpro® Performance Minerals® Enhances Dairy Calf Growth and Performance

Study Objective

Effects of plane of nutrition and Zinpro Performance Minerals on growth and health of transported dairy calves.

Study Duration

20 Weeks

Animals

90 male Holstein calves (~1 wk old), transported ~ 4 h

Treatments

2 X 2 factorial:

LPN: Low; 568 and 284 g/d milk powder (22% CP) wk 1 to 6; weaned wk 6; hay and grain mix (17% CP, DM) wk 1 to 20

HPN: High; 810, 1,136, and 568 g/d milk powder (28 and 22% CP) wk 1 to 7; weaned wk 7; hay and grain mix (22% CP) wk 1 to 20

Inorganic: 50, 50, 10, and 100 mg/kg Zn, Mn, Cu, and Fe in milk powder; 70, 55, 12, and 1 mg/kg Zn, Mn, Cu and Co in grain mix from sulfate sources

ZPM: Iso-levels; Zn, Mn, Cu, and Fe from ZINPRO®, Zinpro® MANPRO®, Zinpro® CuPLEX®, and Zinpro® Availa® Fe in milk powder; Zn, Mn, Cu, and Co from Zinpro® Availa® 4 and sulfate sources in grain mix

Location

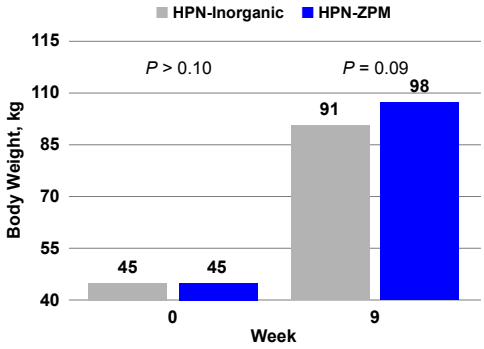
University of Illinois, Urbana, IL, USA

Results Summary

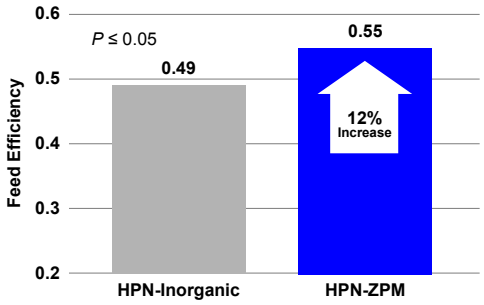
- **Calves fed low plane of nutrition (LPN) had limited responses to trace mineral source**
- **Calves fed high plane of nutrion (HPN) with Zinpro Performance Minerals (ZPM) compared to calves fed HPN-Inorganic had:**
  - ✓ 0.12 kg/d greater ADG through wk 9
  - ✓ 7 kg heavier body weight (BW) at wk 9
  - ✓ Improved feed efficiency through wk 9
  - ✓ Numerically lower mortality rates through wk 12

Trace minerals may be limiting factors of cellular function, growth, and immune competence, in dairy calf diets, when protein and energy are not limiting.

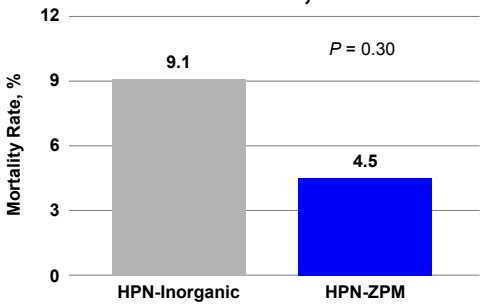
Zinpro Performance Minerals Increased G:F in HPN Calves



Zinpro Performance Minerals Increased BW in HPN Calves, kg



Zinpro Performance Minerals Decreased Mortality Rate in HPN Calves, %



Return on Investment

Item, $/calf	Inorganic	ZPM
Milk powder	259	231
ZPM (in milk only)	--	(0.30)
ZPM added value	--	28
ROI*		**93:1**

*Does not take into account grain costs, cost of trace minerals fed in grain, or calf mortality.

Osorio, J. S., R. L. Wallace, D. J. Tomlinson, T. J. Earleywine, M. T.Socha, and J. K. Drackley. 2012. Effects of source of trace minerals and plane of nutrition on growth and health of transported neonatal dairy calves. J. Dairy Sci. 95(10):5831-5844.

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