

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.



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®, MANPRO®, CuPLEX®, and Availa®Fe in milk powder; Zn, Mn, Cu, and Co from Availa®4 and sulfate sources in grain mix



Study Duration

20 Weeks



Location

University of Illinois, Urbana, IL, USA

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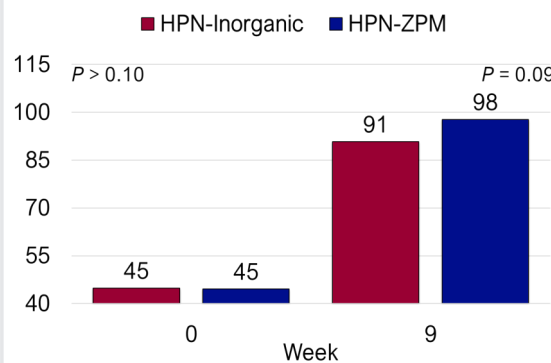


Results Summary

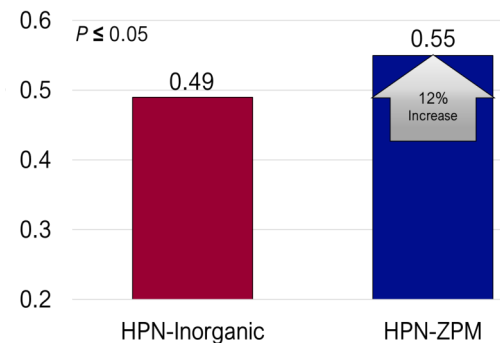
- Calves fed low plane of nutrition (LPN) had limited responses to trace mineral source
- Calves fed high plane of nutrition (HPN) with ZPM compared to calves fed HPN-Inorganic had:
 - ✓ 0.12 kg/d greater ADG through wk 9
 - ✓ 7 kg heavier body weight (BW) at wk 9
 - ✓ Improved feed efficiency through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

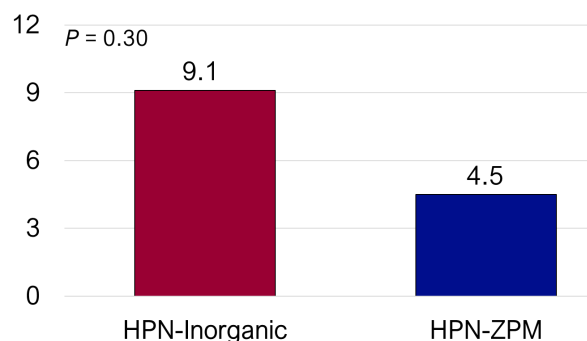
ZPM Increased BW in HPN Calves, kg



ZPM Increased G:F in HPN Calves



ZPM Decreased Mortality Rate in HPN Calves, %



Feeding ZPM to calves has an ROI in excess of 50:1

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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.