

# Feed the Best **For a Lifetime**

Birth, Growth,  
Production,  
Reproduction





# Lifetime Performance<sup>®</sup>

To truly thrive, dairy cattle must receive optimum trace mineral nutrition throughout their productive life stages.

## REPRODUCTION

Trace mineral status before and after calving directly affects reproduction.

**5.5% ↑** Pregnancy Rate

**13 ↓** Fewer Days Open

Beginning trace mineral supplementation in the dry and prepartum periods and continuing through lactation is critical for improving health. Research results by Rabiee, Lean, Stevenson and Socha show that feeding Zinpro Performance Minerals<sup>®</sup> to dry and lactating cows can help aid in an earlier return to ovarian function, which can lead to improved pregnancy rates and fewer days to conception<sup>2</sup>.

## MILK PRODUCTION

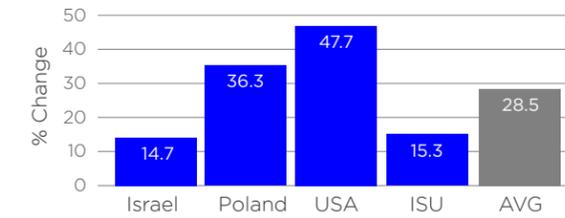
Healthy cows produce more milk per lactation. Studies by Rabiee, Lean, Stevenson, Socha and Gomez showed improved milk production along with higher yields of fat and protein. This research demonstrates 604 lb more milk per lactation in mature cows, while heifers in the rearing phase produced 441 lb more milk in their first lactation<sup>2,4</sup>.

**MORE MILK**  
**604 lbs/Lactation for Cows**  
**441 lbs/Lactation for Heifers**

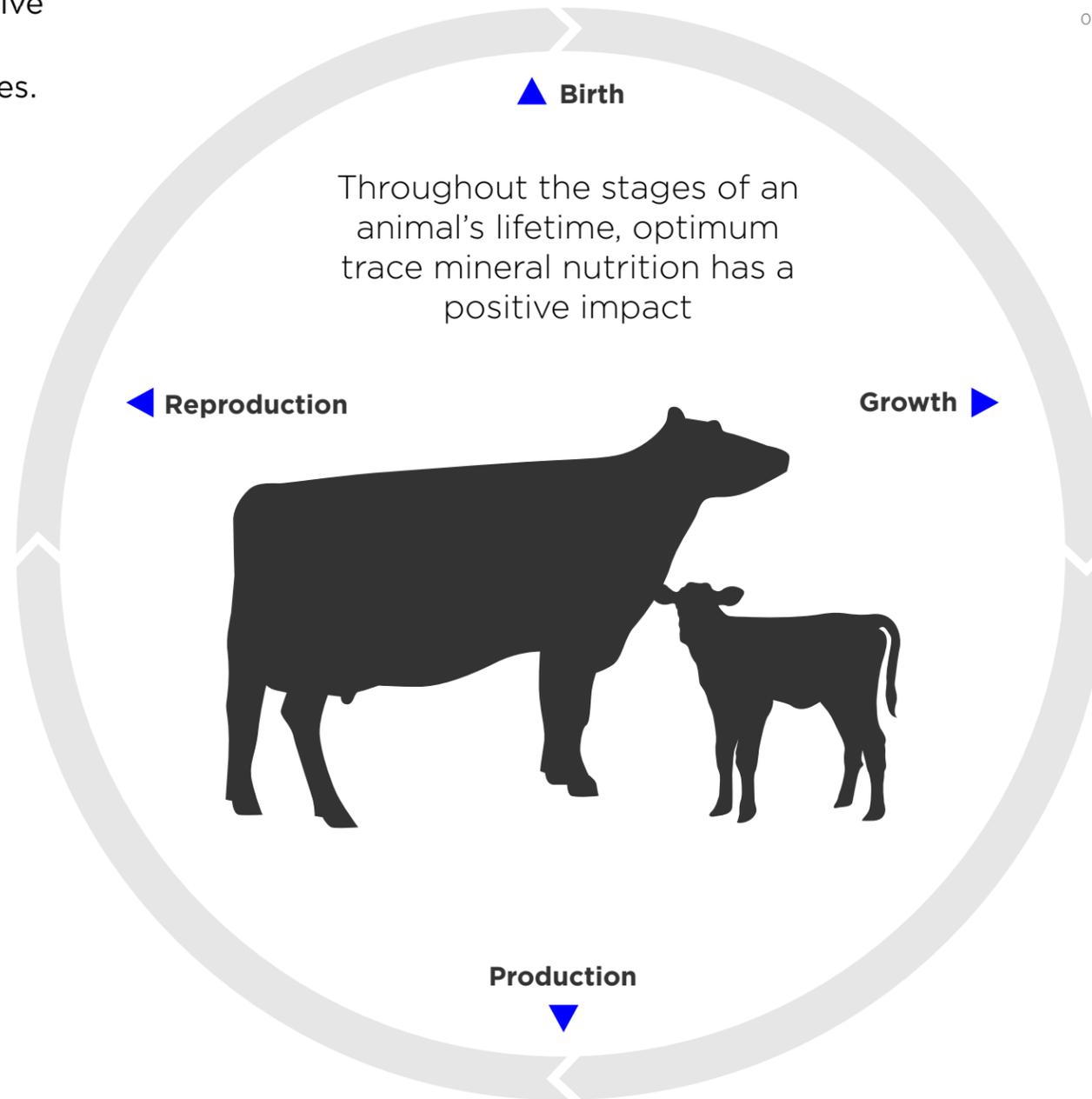
## IMMUNITY

Milk production, reproductive function and hoof integrity are greatly influenced by a strong immune system. Less-than-optimal trace mineral nutrition can result in greater susceptibility to deficiencies. Proper nutrition has been shown to raise immunoglobulin (IgG) levels in maternal colostrum, which aids in passive immunity for the newborn calf<sup>1</sup>.

## Increase in IgG Concentration



**28% ↑**



## HOOF HEALTH MANAGEMENT

When a heifer contracts digital dermatitis (DD) before calving, she produces less milk and suffers decreased reproductive performance<sup>4</sup>. In a study on digital dermatitis and lactation performance in cows, Gomez *et al.*, found that heifers having incidences of DD showed a significant decrease in first lactation performance.

The study also showed that heifers that were fed the DD formula as part of a balanced nutrition program showed improvements in hoof health. One of the improvements was a decrease in DD prevalence of more than 60%.

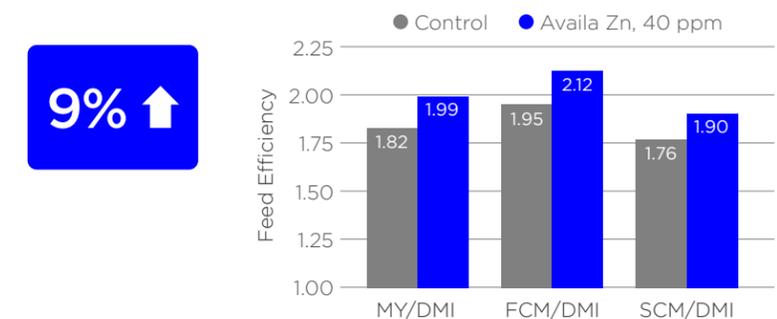
**60% ↓** Digital Dermatitis

Heifer Type (Pre-Calving)	First Lactation Milk Loss (305 Days in Milk)
One DD Event	438 lb
Multiple DD Events	738 lb

## FEED EFFICIENCY

Feeding zinc at a 40 ppm level has been shown through research to result in cows consuming less feed per pound of milk produced<sup>3</sup>.

## Feeding 40 ppm Availa<sup>®</sup> Zn Improves Feed Efficiency



**9% ↑**

## LAMENESS MANAGEMENT

Optimal nutrition is necessary for improved claw integrity during a cow's productive life. Research shows that prevention of nutritional deficiencies allows for fewer non-infectious claw lesions<sup>5</sup>.

**34% ↓** White Line Separation

**11% ↓** Sole Ulcers

<sup>1</sup> Kincaid and Socha, 2004. *Prof. Anim. Sci.* 20:66; Kinal *et al.*, 2005. *J. Food Ag. and Environ.* 3:168. <sup>2</sup> Rabiee, A. R., I. J. Lean, M. A. Stevenson, and M. T. Socha. 2010. Effects of feeding organic trace minerals on milk production and reproductive performance in lactating dairy cows: A meta-analysis. *J. Dairy Sci.* 93:4239. <sup>3</sup> Nayeri, A., N. C. Upham, E. Sucu, M. V. Sanz-Fernandez, J. M. DeFrain, P. J. Gordon and L. H. Baumgard. 2014. Effect of the ratio of zinc amino acid complex to zinc sulfate on the performance of Holstein cows. *J. Dairy Sci.* 97:4392. <sup>4</sup> Gomez, A. *et al.*, 2015. First-lactation performance in cows affected by digital dermatitis during the rearing period. *J. Dairy Sci.* 98:4487. <sup>5</sup> Nocek *et al.*, 2000. Digital characteristics in commercial dairy herds fed metal-specific amino acid complexes. *J. Dairy Sci.* 83:1553.



## RESEARCH-PROVEN ZINPRO PERFORMANCE MINERALS®

At Zinpro Corporation, our investment in data and the scientific research of our products has led us to produce more than 275 peer-reviewed research publications. Zinpro provides customers with quality information to better explain how our products deliver a positive animal response and improved return on investment.

Trace minerals are essential during the animal's full productive life, from birth, to growth through production and reproduction. The table below summarizes the relationship between some of the different productive stages and the essential role that minerals play.

Birth	Growth	Production	Reproduction
Intestinal Epithelium <b>Zn, Mn, Cu</b>	Appetite <b>Zn, Co</b>	Milk Production <b>Zn, Co</b>	Bone Development <b>Zn, Mn, Cu</b>
Immune Function <b>Zn, Mn, Cu, I</b>	Muscle Development <b>Zn</b>	Hoof Health <b>Zn, Mn, Cu, I</b>	Fertility <b>Zn, Mn, Cu</b>
	Hoof Health <b>Zn, Mn, Cu, I</b>	Feed Efficiency <b>Zn, Co</b>	Fetal Development <b>Zn, Mn, Cu</b>
			Colostrum Quality <b>Zn, Mn, Cu</b>

From minerals to benefits to productive stages, Lifetime Performance shows our commitment to stand by producers at all life stages offering solutions, tools and answers to help their animals show their full potential and live a lifetime of performance.



For more information:  
contact your Zinpro sales  
representative or visit  
[zinpro.com/lifetime-performance](http://zinpro.com/lifetime-performance)