



Research-Proven Zinpro Performance Minerals

At Zinpro, we believe to truly thrive, animals must receive optimum trace mineral nutrition throughout their life stages. It's what we call Lifetime Performance®.

Lifetime Performance is the commitment of over 45 years that Zinpro has devoted to researching, and developing, world leading products and solutions to support animals, their health and wellness.

Trace minerals are relevant at all stages of the productive lives of animals and Zinpro has been researching the roles Performance Minerals® play during all stages to ensure that animals can have a lifetime of performance. The table below summarizes the relationship between different productive stages and essential trace mineral roles.

Birth	Growth	Performance	Reproduction
Intestinal Epithelium <i>Zn</i>	Muscle Development <i>Zn</i>	Hoof Integrity <i>Zn, Mn, Cu</i>	Fertility <i>Zn, Mn, Cu</i>
Immune Function <i>Zn, Mn, Cu</i>	Bone Development <i>Zn, Mn, Cu</i>	Skin and Coat <i>Zn, Mn, Cu</i>	Semen Quality <i>Zn, Mn, Cu</i>
Important Liver Stores <i>Zn, Cu</i>	Vaccination Response <i>Zn, Mn, Cu, Co</i>	Fiber Utilization <i>Co</i>	Fetal Development <i>Zn, Mn, Cu</i>
		Gastrointestinal Health <i>Zn, Mn, Cu</i>	Colostrum Quality <i>Zn, Mn, Cu</i>

Note: 4-Plex®EQ is manufactured and sold as 4-Plex®C in the U.S. and Mexico. In all other markets, please contact your representative and ask for Availa®4.

To learn more about Zinpro Performance Minerals and 4-Plex®EQ, formulated specifically for equine nutrition, visit zinpro.com/equine.



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Feed the best for a lifetime

Birth. Growth. Performance. Reproduction.

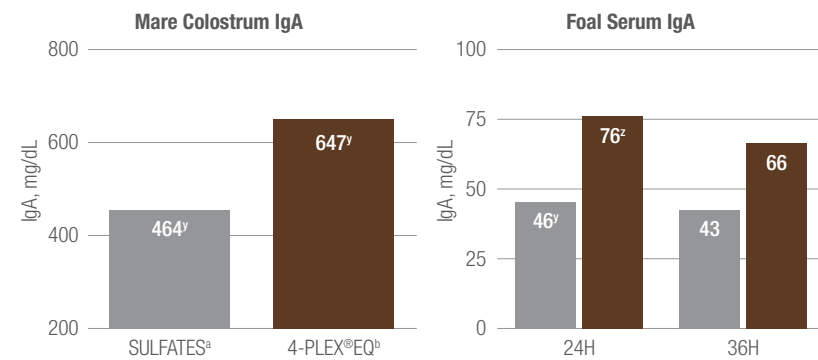


Lifetime Performance[®]

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

Colostrum Quality

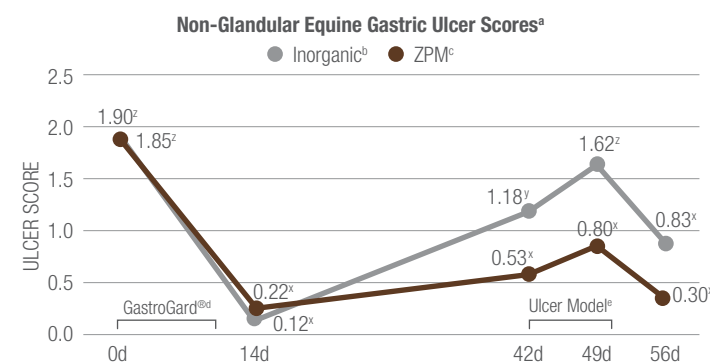
Higher immunoglobulin concentration in colostrum provides for enhanced passive transfer of immune factors from the mare to the foal. Mares fed 4-Plex-EQ produced higher quality colostrum and foals subsequently had improved immunoglobulin serum levels at 24 hours after birth.



a Supplied zinc sulfate, manganese sulfate, copper sulfate and cobalt sulfate at iso-levels to 4-Plex-EQ treatment; supplementation period 84 d prior to foaling through 112 d post-foaling
b 4-Plex-EQ is manufactured and sold as 4-Plex[®]C (ZINPRO[®] zinc methionine, MANPRO[®] manganese methionine, CuPLEX[®] copper lysine and COPRO[®] cobalt glucoheptonate); supplied 1 X NRC level for Zn and Mn (manganese sulfate added to treatment), 1.5 X NRC level for Cu and 44 X NRC level for Co
yz Bars lacking a common superscript letter differ, P < 0.05 NRC, 2007, Sixth Revised Edition.

Digestive Health

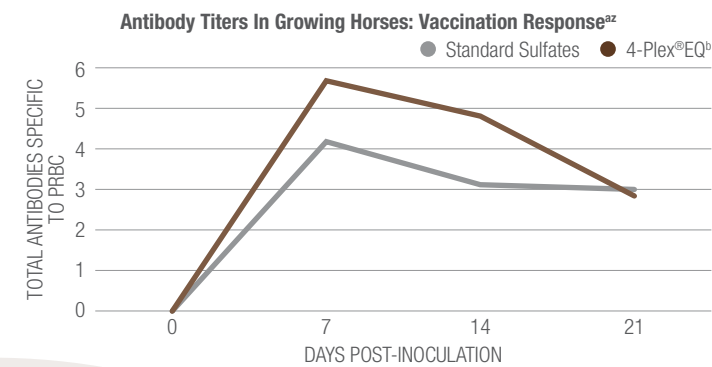
All breeds and ages of horses are susceptible to gastric ulcers. However, gastric ulcers are most prevalent among performance horses. Thoroughbred horses fed Zinpro Performance Minerals maintained lower gastric ulcer scores following exposure to an ulcer model.



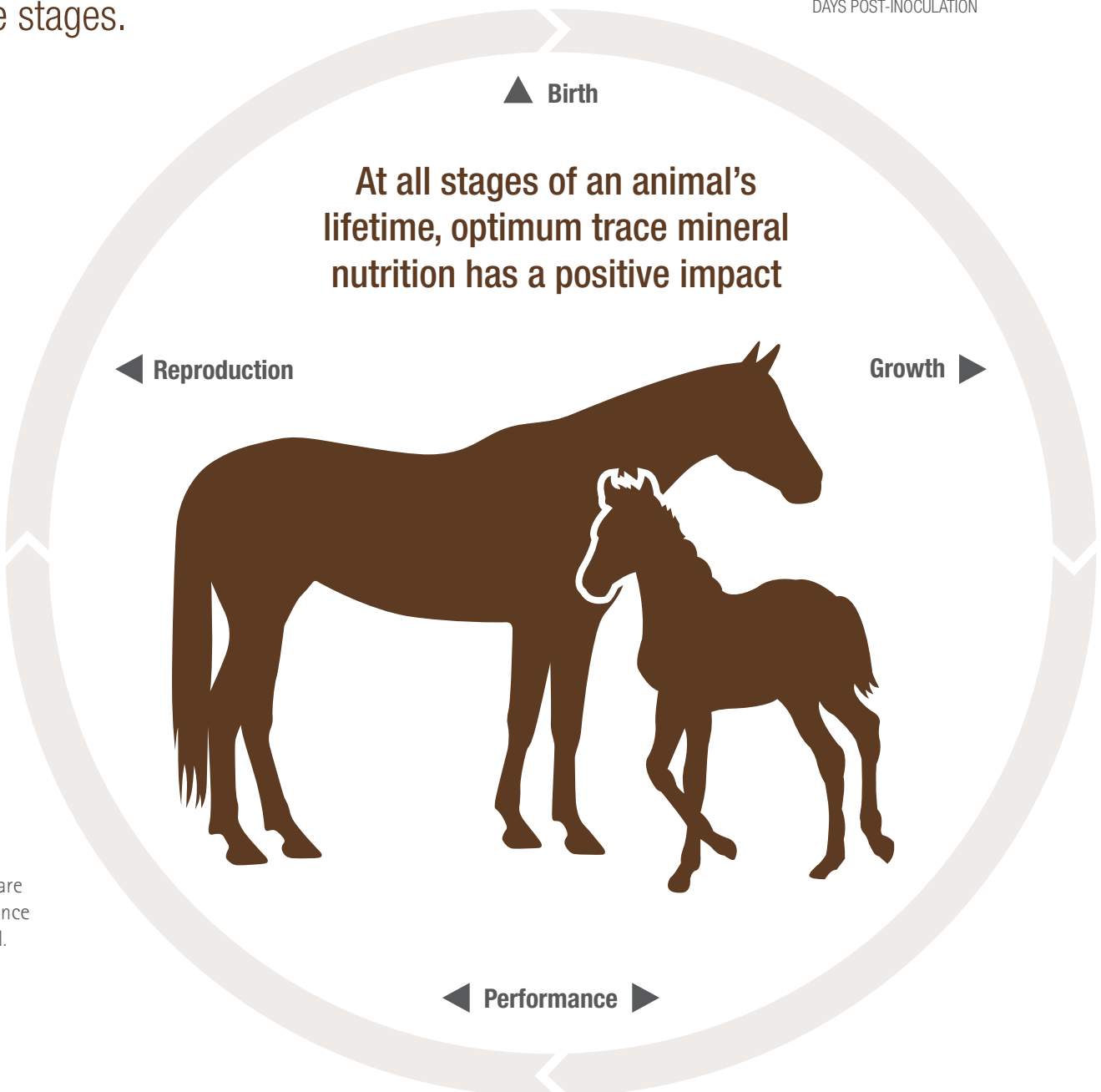
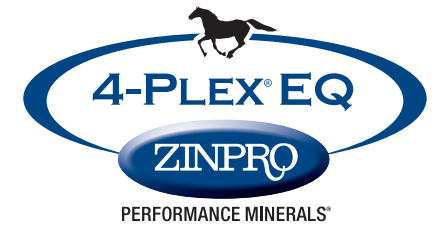
a Scoring system 0 to 3: 0 (No ulcers); 1 (Small focal or multifocal ulcers); 2 (Large focal or multifocal ulcers); 3 (Large and coalescing ulcers)
b Inorganic: Sulfates provided 400 mg Zn, 400 mg Mn, 100 mg Cu and 5 mg Co per hd daily. Based on an 1100lb (500 kg) horse at maintenance or light work; Supplements fed on a relative BW basis
c Zinpro Performance Minerals[®]: ZINPRO[®] zinc methionine, MANPRO[®] manganese methionine, CuPLEX[®] copper lysine and COPRO[®] cobalt glucoheptonate replaced inorganic source for Zn, Mn, Cu and Co; Fed at iso-levels
d GastroGard administered orally d 0 through 13 (4.0 mg/kg BW); Merial Limited, Duluth, Georgia
e Intermittent feeding schedule; Cumulative 96 h hay withdrawal in 24 h increments
xyz Experiment X Trt X Day, P < 0.05; LSMs lacking common superscript letters differ, P < 0.05 EG - 225, 2008. ZPM Gastric Ulcers in Equine.

Healthy Start

Trace mineral supplementation is an important factor to optimize responses to vaccination programs. In young horses fed 4-Plex-EQ, the total antibody response was increased, establishing stronger protection.



a ZPM supplied 360 mg Zn, 200 mg Mn, 125 mg Cu and 25 mg Co per head daily and sulfates supplied iso-levels
b 4-Plex-EQ is sold and manufactured as 4-Plex[®]C (ZINPRO[®] zinc methionine, MANPRO[®] manganese methionine, CuPLEX[®] copper lysine and COPRO[®] cobalt glucoheptonate)
z Treatment effect, P = 0.006
EGr - 7, 2002. 4-Plex-EQ for Growing Horses.



Bone Development

The development of a sound skeleton begins during fetal development and remains a critical lifetime factor for performance. Research evaluating the prevention of spiral fractures in turkeys offers evidence of how bone quality is affected by dietary minerals.

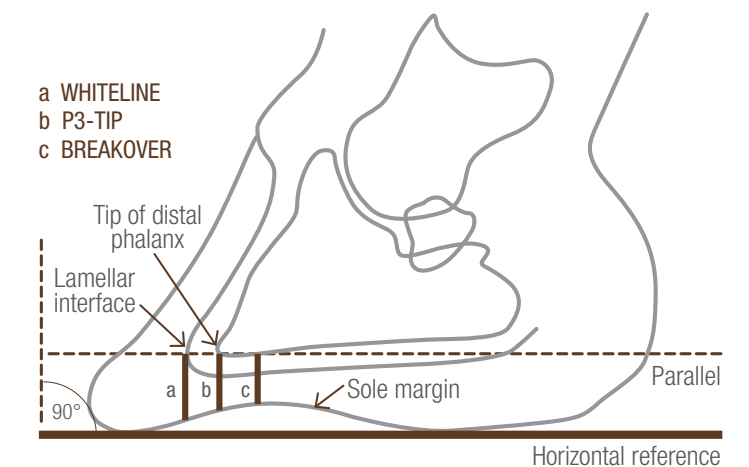
Tom Turkeys Fed Zinpro Performance Minerals Showed:



PT - 109, 2003. Femur Spiral Fracture in Tom Turkeys.

Hoof Integrity

For all horses, maintaining hoof integrity and sound movement is mandatory for growth and performance. Previous evaluations demonstrated an advantage for hoof growth during the first 120 days of feeding 4-Plex-EQ. In lactating mares, sole depth increased for mares fed 4-Plex-EQ. This suggests that horses with thin soles, ulcers, abscesses, and other compromising issues can benefit from a diet formulated to contain more bioavailable minerals. It also sets a solid foundation in the hoof for all horses to meet movement performance demands.



EH - 106, 2008. 4-Plex-EQ Equine Hoof and Sole. Image courtesy of Dr. Lori Warren, University of Florida.

Mares Fed 4-Plex-EQ Showed:

