INSIGHTS - A LOOK INSIDE PEER-REVIEW

Zinpro® Availa® Zn and Zinpro® Availa® Z/M Improve Immunity of Chickens Challenged with Infectious Bronchitis Virus

Study Objective

Evaluate the susceptibility of two major histocompatibility complex (MHC) congenic chicken lines to Infectious Bronchitis Virus (IBV) challenge when fed Zinpro Availa Zn or Zinpro Availa Z/M compared to inorganic Zn and Mn sources.

Animals

20 one-day-old layer type birds, 2 MHC haplotype

- 331/B2 IBV resistant
- 335/B19 IBV susceptible

Treatments

Corn-soybean meal basal diet supplemented with:

- 0 ppm Mn
- 120 ppm Mn Sulfate
- 80 ppm Zinpro Availa Mn

Treatment	$ZnSO_4$	$MnSO_4$	Zinpro Availa Zn	Zinpro Availa Mn
	ppm			
Control	60	60	0	0
Zinpro Availa Zn	—	60	60	0
Zinpro Availa Z/M	—	—	40	40

Study Duration

37 days

IBV Occulo-nasal challenge on d 23 (strain M41 at an EID_{50} of 2 x $10^{3.5}$ in 200 µl)

Location

University of California, Davis, CA, USA

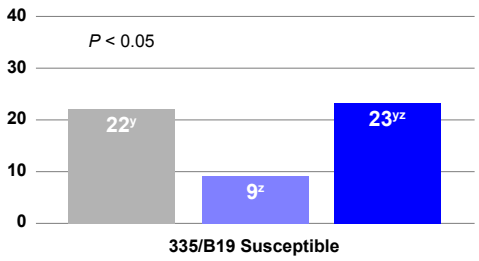
Results Summary

Compared to chickens fed sulfate minerals, feeding Zinpro® Performance Minerals® resulted in:

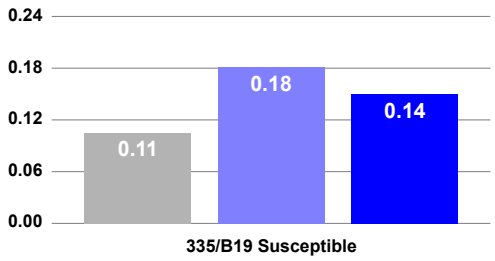
- Reduction in respiratory signs in IBV susceptible birds fed Zinpro Availa Zn
- Higher antibody response in IBV susceptible birds fed Zinpro Availa Zn or Zinpro Availa Z/M
- Decrease in airsacculitis in both bird lines fed Zinpro Availa Zn or Zinpro Availa Z/M

Zinpro Availa Zn or Zinpro Availa Z/M supplementation can contribute to reducing the severity of the infection caused by IBV challenge

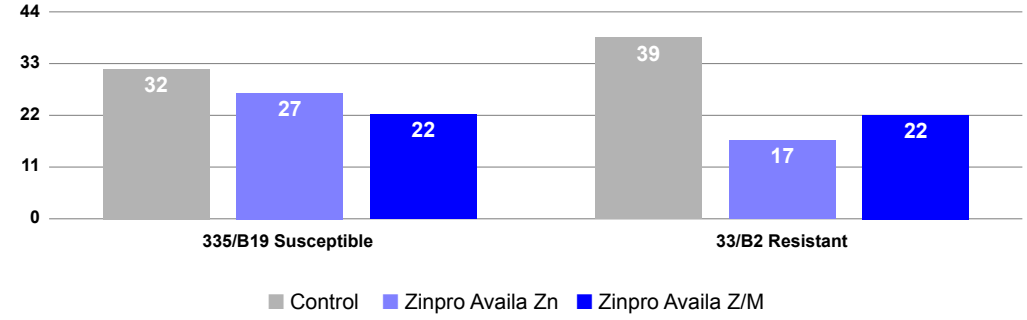
Respiratory Signs on d 27, 4 d Post Infection, %



IgA Antibodies in Tears on d 37, 13 d Post Infection, S/P



Airsacculitis Prevalence on d 37, 14 d Post Infection, %



Publication

Da Silva, A.P., M.A. Rebollo, and R.A. Gallardo. 2020. Effects of amino acid–bound zinc and manganese feed additives on MHC haplotype chickens challenged with infectious bronchitis coronavirus. Avian diseases, 64(4), 451-456.

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