



Availa® Zn and 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 Availa® Zn or Availa® Z/M compared to inorganic Zn and Mn sources.



Animals

120 one-day-old layer type birds, 2 MHC haplotype congenic lines:

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

Treatments

Corn-soybean meal basal control diet supplemented with:

Treatment	ZnSO ₄	MnSO ₄	Availa Zn	Availa® Mn
	ppm			
Control	60	60	0	0
Availa Zn	-	60	60	0
Availa Z/M	-	-	40	40



Study Duration

37 days

IBV Occulo-nasal challenge on d 23 (strain M41 at an EID₅₀ of 2 x 10^{3.5} in 200 µl)



Location

University of California, Davis, CA, USA

Results Summary

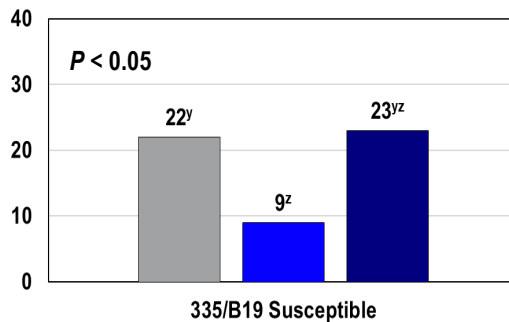
Compared to chickens fed sulfate minerals, feeding Zinpro Performance Minerals resulted in:

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

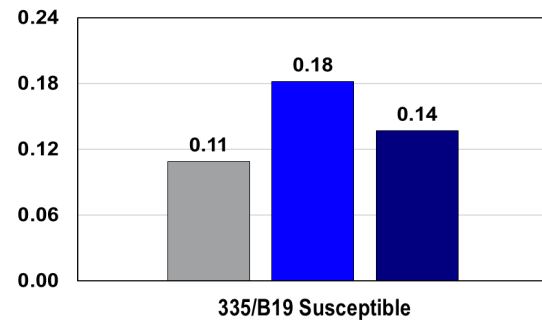
Availa Zn or Availa Z/M supplementation can contribute to reducing the severity of the infection caused by IBV challenge



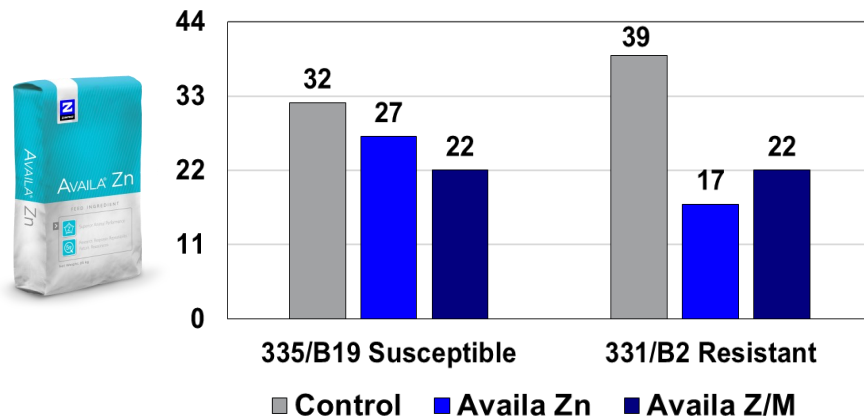
Respiratory Signs on d 27, 4 d Post Infection, %



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



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



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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.