

Feeding Zinc from Availa® Zn Can Improve Immune Response to Respiratory Pathogens, Infection, and Transmission

Zinc is an important player in the integrity and defense mechanisms of the respiratory epithelium, including roles as an¹:

- Antioxidant
- Organelle stabilizer
- Anti-apoptotic agent
- Instrument of epithelial healing and renewal
- Anti-inflammatory agent

Studies evaluating zinc have shown:

- An antibacterial peptide with zinc as a cofactor is able to reduce respiratory tract *E. coli* colony counts by 70% in rabbits².
- The importance of zinc for reduction of lipopolysaccharide-induced apoptosis, when measuring intracellular zinc in pulmonary arterial endothelial cells³.

Avian respiratory tracts are exposed to a number of irritants. Recent work in chickens intraocularly challenged with a pathogenic strain of *Infectious Bronchitis Virus* (Arkansas DPI p10) showed broilers fed Availa® Zn zinc amino acid complex had an increase in early clinical inflammatory manifestations (Figure 1), and significantly lower airsacculitis (Figure 2).

CONCLUSIONS

According to these findings, improved zinc status may create a more consistent epithelial reaction in the upper respiratory tract, reducing the access of harmful agents to the air sacs, and in turn, decrease viral output.

References: ¹Truong-Tran et al., 2000; ²LaForce et al., 1984; ³Thambiayya, 2012

Figure 1. Prevalence of Conjunctivitis, Nasal Discharge and Coughing in Broilers Directly Infected With IBV^{ab}

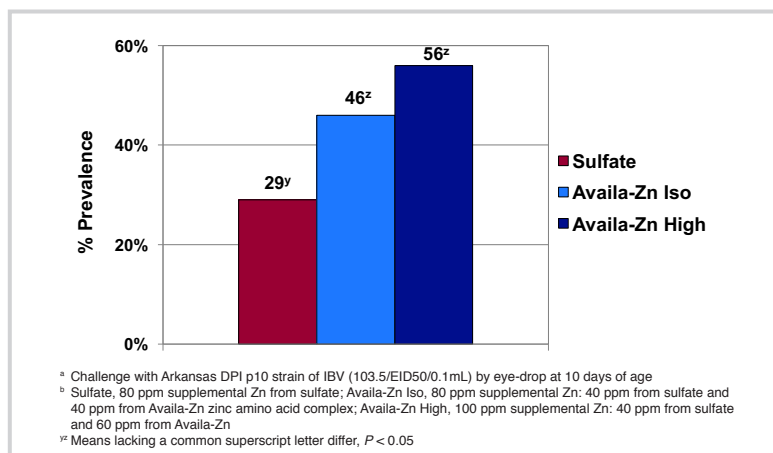


Figure 2. Incidence of Airsacculitis in Broilers Directly Infected With IBV^a at 10 d Post-Challenge^b

