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Research Update

Respiratory disease in commercial poultry

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Respiratory diseases are among the most common diseases affecting the commercial poultry industry. Previous research shows that Diamond V technology products provide support for the immune system, particularly in its response to respiratory challenges (Jensen et al., 2008; Moyad et al., 2009).

Recent research, highlighted below, has evaluated the effects of Original XPC™ (XPC) on antibody titers and clinical signs of respiratory disease in poultry.

Newcastle Disease Virus
The effects of feeding XPC to broilers vaccinated with Newcastle disease virus (NDV) have been reported in several published broiler studies (Al-Homidan and Fahmy, 2007; Gao et al., 2008; Fathi et al., 2012).

Researchers at Texas A&M University recently evaluated the effects of feeding XPC to 120 broiler chicks vaccinated at 1 day of age with B1 NDV vaccine, followed by B1, Lasota NDV vaccine at 21 days of age. Blood and tissue samples were taken to evaluate the birds' immune-competence through flow cytometry and gene expression. Findings were presented at the International Poultry Scientific Forum (IPSF) 2015 and discussed in Diamond V's newsletter *PoultryAdvisor*:

- **Chickens: Feed supplementation to affect the rate and level of immune response**
  November 2014. *PoultryAdvisor* – McIntyre, D.R. and J. Carey (View article [PDF])

- **Effects of Diamond V Original XPC on modulating adaptive immune function in broilers**
  2015. *2015 International Poultry Scientific Forum, Abstract M29* — Park, J.W., W.K. Chou, L.R. Berghman, D.R. McIntyre, and J.B. Carey (Click for PDF abstracts, scroll to M29)
- **Immunomodulatory effects of Diamond V Original XPC supplementation on immune gene expression in broilers**
  2015. *2015 International Poultry Scientific Forum, Abstract M28* — Chou, W.K., J.W. Park, J.B. Carey, D.R. McIntyre, and L.R. Berghman (Click for PDF abstracts, scroll to M28)

Infectious Bronchitis Virus

Two separate trials conducted at Auburn University College of Veterinary Medicine studied the effects of Infectious Bronchitis Virus (IBV) challenge (Trial 1) and IBV vaccine + IBV challenge (Trial 2) in XPC-fed broilers.

Results were presented in Atlanta at the IPSF (2015), and discussed in Diamond V's newsletter *PoultryAdvisor*:

- **Infectious bronchitis: Reducing clinical signs in chickens**
  October 2014. PoultryAdvisor – McIntyre, D.R. (View article [PDF])
- **Effects of fermentation product of *S. cerevisiae* XPC in chicken diets on resistance against infectious bronchitis virus**
  2015. *2015 International Poultry Scientific Forum, Abstract M7* — Breedlove, C., A. Ghetas, S. Gulley, F. van Ginkel, K. Joiner, V. van Santen, and H. Toro (Click for PDF abstracts, scroll to M7)

Infectious Laryngotracheitis

Recently, researchers evaluated the effects of XPC-fed broilers in three separate trials: Trial 1 – LT vaccinated (in ovo), ILT challenged; Trial 2 – Vaccinated, ILT-challenged; Trial 3 – Non-vaccinated, ILT-challenged. Please contact your Diamond V poultry specialist for details and results of these trials.

References

Jensen, G.S., K.A. Redman, K.F. Benson, S.G. Carter, M.A. Mitzner, S. Reeves and L. Robinson. 2008. Antioxidant Bioavailability and Rapid Immune Modulating Effects After Consumption of a Single Acute Dose of a High-Metabolite Yeast Immunogen: Results of a Placebo-Controlled Double-Blinded Crossover Pilot Study. J. Med Food 14:1-9

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Al-Homidan, A. and M.O. Fahmy. 2007. The effect of dried yeast (*Saccharomyces cerevisiae*) supplementation on growth performance, carcass chemical analysis, immunity, ileum villi heights

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Fathi, M.M., S. Al-Mansour, I. Al-Homidan, A. Al-Khalaf. 2012. Effect of yeast culture supplementation on carcass yield and humoral immune response of broiler chicks. Vet. World 5:651-657

Gao, J., H. J. Zhang, S. H. Yu, S. G. Wu, I. Yoon, J. Quigley, Y. P. Gao, and G. H. Qi. 2008. Effects of yeast culture in broiler diets on performance and immune-modulatory functions. Poult. Sci. 87:1377-1384