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Effects of a water applied biopromotor and feed applied MOS on the prevalence of Colibacillosis and egg production in commercial heavy breeders

Oliveira C. (1), Hernandez J. (1), Layton S.L. (1)
(1) BV Science/Vetanco SA, Buenos Aires, Argentina

Abstract: Commercial poultry production farms are under increasing pressure to reduce the use of antibiotics while maintaining health standards and pathogen control. Currently, there is an increased need for the development of effective products that serve as alternatives to antibiotics. We have developed a water applied biopromotor through careful selection of different types of prebiotics strategies (inactivated fermented *Bacillus subtilis* fragments and yeast cell wall extracts) that improves mucosal integrity and controls gram negative pathogens, while increasing productivity parameters and health status of the birds. A commercial poultry farm (Ross 508 heavy breeders), Cuenavaca, Mexico, with a historical problem of increased mortality, increased diarrhea and reduced egg production attributed to Colibacillosis beginning at week 28 was divided into two treatment groups (n=2 houses). House 1 (n=20000 heavy breeders) served as the untreated control and was fed a commercial basal diet without AGP and House 2 (n=20000 heavy breeders) was treated with 2 doses of the biopromotor (0.2ml/bird) in the drinking water at week 24 and 18 days later and MOS incorporated into the standard commercial basal diet (2kg/ton) free of AGP during weeks 25-34. Results show significantly increased mortality in the untreated house beginning at 28 weeks and continuing until 34 weeks, comparable with historical farm data, while birds in the treated house presented normal mortality consistent with stress associated during the peak of production. Microbiological analysis confirmed that the increased mortality in the untreated house was consistent with Colibacillosis. Through peak of production the treated house achieved 84.48% production while the control house achieved a maximum production of 67.03%. Analysis further showed egg production in the treated house was significantly higher (n=899,230) when compared to the untreated control house (n= 497,425). These data indicate that treatment with two doses of the biopromotor and temporary incorporation of MOS into the commercial basal diet can moderate the effects of *E. coli* in heavy breeders. Furthermore, this strategic approach of combining prebiotics provides an excellent alternative intervention strategy to chemotherapeutic agents.