A COMMERCIAL OREGANO PRODUCT INCREASES INTESTINAL CELL PROLIFERATION AND IMMUNE STATUS IN BROILERS

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Background

Oregano-based Eubiotics are effective tools in gut health management programmes. Understanding their mode of action will help to determine the most effective time/method to use them.

Objective

The effect of a commercial oregano essential oil product, on immune and antioxidant status was investigated in broilers over a 42 period.

Methods

A total of 480 Ross 308 broilers were split into 2 groups (8 replicates/group, 30 birds/replicate); C, Control (C) and OS, feed supplemented with 300g/tonne of Orego-Stim ((Anpario, UK) fed continuously for 42 days. Final performance was calculated and following necropsy, intestinal cell proliferation was determined by measuring proliferating cell nuclear antigen (PCNA) in the duodenum (DD), jejunum (JJ) and ileum (IL) by immunohistochemistry. Newcastle Disease Virus (NDV) antibody titre was determined via ELISA and phagocytic activity via flow cytometry from blood. Data were analysed by ANOVA and significance was declared at *P*<0.05.

Results

OS birds had improved FCR (*P*<0.05) versus controls (1.73 vs. 1.44, respectively) and numerically higher body weight gain (2.413 vs 2.364 kg, respectively). PCNA was higher (*P*<0.05) in all three intestinal sections for OS birds (DD: 21.08; JJ: 23.69; IL: 24.70) compared to C birds (DD: 15.83; JJ: 19.79; IL: 22.29). NDV titres were higher in OS birds than C birds (2.038 and 2.116, respectively (P<0.05)). Similarly, phagocytic activity was increased in OS birds than C (41.45 vs 43.75%, OS and C respectively).

Conclusion

In conclusion, Orego-Stim can help mitigate intestinal damage via increased intestinal cell proliferation while enhancing both innate and acquired immunity.