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The effect of oregano essential oil or attapulgitite on growth performance, gut health and meat quality of broiler chickens

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Aim: The aim of the present study was to investigate the effects of oregano or attapulgitite on growth performance, intestinal microbiota and architecture as well as the breast and thigh meat composition and oxidative stability.

Methods: A total of 240, one-day-old, broiler chicks were used in a 42-day trial. Chickens were randomly distributed into three treatments with four replicates of twenty chickens per pen: Control group; Attapulgitite group; Oregano essential oil group. Several parameters of growth, intestinal functionality and meat quality were evaluated.

Results: The results showed that dietary inclusion of oregano improved body weight gain, feed conversion ratio but lowered feed intake. Oregano group had also higher weight at slaughter breast compared to other groups and higher oxidative stability in the breast and thigh meat after one and four days of refrigerated storage and total phenols in the breast and thigh meat, compared to the control group. Cell proliferation in the duodenum and the jejunum was also higher compared to the other groups. Attapulgitite group had better oxidative stability in the breast and thigh meat after one and four days of refrigerated storage, compared to the control group. No significant differences were found in the chemical composition of breast and thigh meat among the different groups.

Conclusion: Finally, intestinal morphometry values and intestinal microbiota counts were not different among the experimental groups. In conclusion, dietary supplementation with oregano essential oil could be a potential additive to improve growth of chickens and enhance chicken meat oxidative stability.

Biography

Ilias Giannenas is a Veterinarian holding a lectureship at the Veterinary Faculty of Aristotle University of Thessaloniki. He is particularly interested in issues of Applied Poultry Nutrition. He is the author or co-author of 2 books, 7 book chapters, 48 papers in refereed journals and more than 100 conference papers. He served as reviewer in more than 50 journals, Member of the Editorial Board in 2 international journals and evaluator for several international funded projects. He has been several times an invited speaker in national or international Congresses or Conferences. His work has 880 citations and H index: 20.

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