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***Corresponding Author:**
Riaz Mustafa

Email:
drriaz@uaf.edu.pk

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Efficacy Comparison of Vinegar and Character Different Yogurt on the Performance and Immune Status of Broilers

Umar Farooq¹, Riaz Mustafa¹, Muhammad Tariq¹, Shahid-ur-Rehman¹, Muhammad Umar Farooq¹, Qasim Ali², Muhammad Naeem Iqbal^{3,4}, Muhammad Aqeel¹, Madiha Huma Qureshi¹, Yinghua Shi²

¹University of Agriculture Faisalabad, Sub Campus Toba Tek Singh-Pakistan.

²Institute of Preventive Veterinary Medicine, Sichuan Agricultural University, Chengdu, Sichuan, People's Republic of China.

³The School of Life Sciences, Fujian Agriculture and Forestry University, Fuzhou 350002, China.

⁴Pakistan Science Mission (PSM), Narowal (Noor Kot 51770), Pakistan.

Abstract:

The current experimental trial was planned to evaluate the proficiency of vinegar as an acidifier and yogurt as a probiotic from two different sources i.e. camel milk (high salts) and sheep milk (high fat) having Nestle™ yogurt inocula given to birds in the feed. A total of 180 one day old unsexed broiler chicks were randomly distributed into six groups. Each group contained three replicates of 10 chicks. The 6 groups were randomly allocated to 6 treatments, where they were offered vinegar, camel milk yogurt, sheep milk yogurt, vinegar + camel milk yogurt, vinegar + sheep milk yogurt, and basal diet (control group). All the birds were offered a pre-starter diet first 7 days followed by a starter diet up to 2 weeks and thereafter on a finisher diet up to day 35. The results demonstrated that the overall bird's performance (body weight gain and FCR) was improved significantly ($P < 0.05$) in yogurt as well as vinegar supplemented groups as compared to the control group. Live weight, carcass weight, thigh quarter weight, and organs weight (lungs, heart, liver) were significantly different ($P < 0.05$) from the control group. While, the weight of spleen, proventriculus, gizzard, and breast quarter duodenum, jejunum, and ileum length were statistically non-significant in probiotic and acidifier group than the control group. The antibody titers against ND and IBD virus were significantly higher ($P < 0.05$) in the probiotic and acidifier supplemented treatments as compared to the control group. Glucose, SGOT, TG, GPT, and HDL showed significant difference ($P < 0.05$), while Cholesterol and LDL show non-significant differences. WBCs, RBCs, HBG, and MCV showed non-significant differences among all the treatments. Carcass characteristics (tenderness) of leg and thigh also showed non-significant ($P < 0.05$) differences in probiotic, acidifier, and control groups. Less mortality ratio was recorded in probiotic + acidifier groups in contrast to the control group. Furthermore, probiotics (yogurt) and acidifier (vinegar) showed effective results on overall broilers' growth performance and immune status of broiler which can serve as an alternative to antibiotics as growth-promoting agents in the commercial poultry sector.

Keywords: Growth performance, slaughter data, LDL, HDL, Solitary, Acidifier, Probiotics.