

Article Info **Open Access**

Citation: Farooq, U., Mustafa, R., Tariq, M., Rehman, S., Farooq, M.U., Ali, Q., Iqbal, M.N., Aqeel, M., Qureshi, M.H., Shi, Y., 2020. Efficacy Comparison of Vinegar and Character Different Yogurt on the Performance and Immune Status of Broilers. *PSM Microbiol.*, 5(2): 41-50.

Received: May 16, 2020

Accepted: June 15, 2020

Published: June 30, 2020

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

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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.