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Effects of Nigella Sativa (Kalonji) on the Lipid Profile and Growth of Broiler Chicken in Different Seasons

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Abstract : The poultry industry is flourishing as the largest agro-based business in Pakistan, and it is making a huge contribution to bridging the gap between the supply and demand of protein. With the progress in the poultry sector, there is an increased usage of antibiotics to combat multiple poultry diseases, which has raised concerns about the potential impact on human health, including antibiotic resistance and residues in poultry products. So, there is a need to promote natural products against poultry diseases. The present study was designed to see the effect of black cumin (kalonji) on the lipid profile and growth of broiler chickens. This experimental study was carried out in the summer and winter seasons. A total of 30 broiler chickens one day old were raised for 35 days. The birds were categorized into two groups; each group contained 15 birds. The experimental group was given 4% (40g/kg) of black cumin (kalonji) mixed in a basal diet, and the control group was fed only on the basal diet. At the end of the experiment, broiler chickens were randomly taken in triplicates from both groups and blood samples were collected to analyze the hematological parameters such as Glucose, Cholesterol, Triglyceride, LDL and HDL. The carcass characteristics such as weight of liver, thigh, barest and gizzard were also recorded along with organoleptic data. Hematological tests were conducted on the bird's serum at the end of the experiment, while body weight, feed intake, feed conversation ratio, mortality rate and water intake were recorded on a weekly basis. The best feed efficiency and growth were observed during the winter season as compared to the summer. Hematological parameters showed an increase in glucose, LDL, and HDL, while a decrease was noticed in cholesterol and triglyceride levels. Significant differences were noticed in hematological parameters at p-value <0.05 by independent sample t-test. The organoleptic study showed better results in aroma, meat tenderness, and taste in the experimental group as compared to the control. Hence, it was concluded that black cumin (kalonji) seeds as an herbal feed additive helps to reduce mortality and improve the health condition of the broiler chicken.

Keywords : antibiotics, black cumin, hematological parameters, organoleptic
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