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Development of a Natural Oil Blend Formulation to Replace Antibiotics

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Along with a growth in the Indonesian population, demand for food products made from poultry is rising. High mortality and morbidity rates due to chicken disease can reduce output and compromise the quality of the meat. By reducing the number of harmful microorganisms in animal feed, AGP can improve feed efficiency and promote healthy cattle growth. Antibiotic residues and microorganism resistance, however, can result from widespread antibiotic misuse. Pine is an active substance and essential oil found in plants that improve the performance of broiler chickens. The antibacterial, antifungal, antiviral, and antioxidant properties of essential oils can be used. The purpose of this study was to investigate the safety of NOBF administration and its impact on the wellbeing and productivity of broiler chickens.

This study was conducted from April to July 2019 in the poultry cage of the Animal Laboratory of Management Unit) in the Faculty of Veterinary Medicine. On day 1, sugar water was supplied to DOCs to revive the birds after transit. Day 35 following treatment saw the performance of the meat-proximate analysis. On day 35 following treatment, the liver and kidneys underwent GP and HP exams. To examine the data, Minitab's statistical software used the student's t-test.

Weight gain, ultimate weight, mortality, and FCR were some of the measures used to determine the effect of NOBF treatment on chickens. The amount of feed consumed by chickens on a diet supplemented with NOBF and the control group did not differ statistically. Compared to the control group, the treatment group consumed more feed. The treatment group's end weight was greater than the control group. To assess the efficacy of NOBF on the productivity of broiler chickens., proximate analysis was used. This result shows that NOBF treatment via feed can improve feed intake effectiveness, resulting in the greater final weight. The active components in NOBF, which have the potential to serve as antibacterial agents, are likely what lead to an optimal feed intake. Terpenoids, particularly iso bornyl acetate, which has antibacterial and anti-inflammatory properties, are found in essential oils. The FCR is a comparison between feed intake and weight increase over a specific time frame. A high feed conversion ratio indicates a high feed requirement to raise weight per unit of weight. The outcomes demonstrated that NOBF, when fed to broiler chicks, can reduce the mortality rate. The NOBF formulation was safe according to histopathological analysis because it did not harm the liver or kidney cells.

It has been demonstrated that giving broiler chickens NOBF at a dose of 2 kg t^{-1} feed improves their

productivity and health, as evidenced by the higher final weight gains and reduced mortality rates compared to the control group. Since liver function (SGPT and SGOT), kidney function (urea and creatinine), gross pathology and histopathology of the liver and kidney, as well as the administration of NOBF at a dose of 2 kg t^{-1} feed, it was determined that the substance was safe (nontoxic to chickens).

Article Reference

Agus Setiyono, Andriyanto, Aulia Andi Mustika, Lina Noviyanti Sutardi, Haig Babikian, Rajeev Kumar Jha, Beni Halalludin, Tigran Davtyan and Yusef Babikyan, 2021. Development of a natural oil blend formulation to replace antibiotics and growth promoters in broiler chicken feed. Int. J. Poult. Sci., 20: 199-208.

KEYWORDS

Broiler chicken, natural oil blend formulation, poultry feed, broiler health, Productivity