

Do different vaccination regimes affect the growth performance, immune status, carcass characteristics and meat quality of broilers?

ABSTRACT

1. A vaccination regime is a schedule for the administration of vaccines which may vary according to country or even by farm. This study aimed to measure the production and health performance of broilers treated with different vaccination regimes. 2. A total of 108 Cobb 500 broiler birds were randomly divided into three treatment groups, with six replicates consisting of six birds per replicate. Each treatment group was administered with different vaccination regimes against Newcastle Disease (ND), Infectious Bronchitis (IB) and Infectious Bursal Disease (IBD). Treatment 1 (T1) broilers were vaccinated against ND+IB and IBD on days 7 and 14 of age, respectively (control); Treatment 2 (T2) broilers were vaccinated against ND+IB on days 3 and 7 of age, and IBD on day 14; and Treatment 3 (T3) broilers were vaccinated against ND+IB on days 7 and 21 and IBD on day 14. Throughout the 42-day study period, data and samples were collected to determine the growth performance, immune status, carcass characteristics and meat quality. 3. There were significant differences ($P < 0.05$) on growth performance (body weight, body weight gain, feed intake and cumulative feed conversion ratio), white blood cell count (heterophils percentage, lymphocytes percentage and heterophils to lymphocytes ratio), carcass characteristics (kill-out weight, de-feathered weight, dressing percentage, drumsticks and gastrointestinal tract weight) and meat quality (cooking loss and drip loss) between treatments. T1 broilers showed better growth, white blood cell count, carcass characteristics and meat quality compared to T2 and T3 broilers. 4. Based on findings from the current work, vaccination against ND+IB and IBD on days 7 and 14 proved to be the best vaccination regime for broiler production, due to the better production performance and health status of broilers.

Keyword: Broiler endemic diseases; Chicken; Health status; Production performance; Vaccination regimes