Effect of inclusion levels and withdrawal periods of Tetracin® on growth performance, carcass traits and occurrence of residues in meat-type chickens

A O. Akinwumi, A.A. Odunsi, A.B. Omojola, Olatoye3, I. O., Olatoye, T.P. Akilapa, I.A. Abioye

Abstract

The study investigated the effect of inclusion levels and withdrawal periods of Tetracin on growth performance, carcass trait and occurrence of residues in meat type chickens raised in a tropical environment. Tetracin® a feed grade antibiotic was administered at 0, 50, 100, 150 and 200mg/kg of feed (starter and finisher diets) with observation of different withdrawal periods (0, 7 and 15 days each) for 6 weeks using a 3x5 factorial layout. One hundred and fifty (150) two weeks old broiler chicks (Anak strain) were randomly divided into five treatments of thirty birds each and three replicates of ten birds. The broilers were fed between 2-4 weeks of age on the starter diet and 4-8 weeks of age on finisher diets, while antibiotic withdrawal was practiced at 15, 7 and 0 day respectively for each inclusion level. Performance (feed intake, weight gain and feed: gain ratio) was monitored while six broilers per treatment were used for carcass and organ evaluation. At the end of feeding trial, microbial assay method was used to detect antibiotic residues on samples from breast, thigh, kidney and liver from two birds per treatment. Data on performance and carcass evaluation were analysed using one-way analysis of variance and significant means separated at 5% level of probability. The final body weight (FBW), total body weight gain (TBWG), total feed intake (TFI), plucked weight (PW), eviscerated weight (EW) and dressing percentage of birds increased progressively (P<0.05) as Tetracin® was added at 50mg/kg -150mg/kg with a decline at 200mg/kg which was still significantly better than birds on control treatment. Broilers fed 150mg Tetracin/kg diet recorded significantly heaviest (P<0.05) thigh (12.86%), breast (20.89%) and drumstick (12.78%). Increase in withdrawal period resulted in reduced weights of carcass cut up parts. Liver weights increased (P<0.05) with level of Tetracin but decreased (P<0.05) with increase in withdrawal period. The interaction showed significant differences (P<0.05) in the liver, lung and whole gizzard along the inclusion level of the antibiotic and across its withdrawal periods. Residue was found in the thigh, liver and kidney when Tetracin® was added at 100mg/kg -200mg/kg and subsequently present in the liver at 15day withdrawal period with 200mg/kg inclusion level. Residue was only found in the thigh muscle when withdrawal time was not observed. The study showed that strict adherence to label dosage and withdrawal time should be followed to mitigate the presence of feed grade antibiotic residues in broiler meat among the consuming public.

Keywords: Tetracin®, Growth; Carcass; Primal cuts; Organs; Residue; Broiler