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News

Dietary XOS Supplementation Can Improve the Thyroid Hormone Activity

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The use of antibiotics as growth promoters in poultry feed has already been regulated in the European Union. However, without an antibiotic in their feed, birds are more likely to fall ill. Probiotics, prebiotics, and phytobiotics, among other options, have been proposed as prospective replacements for AGPs in poultry diets in this search.

The gut microbiota can ferment XOS, a hydrolytic breakdown byproduct of arabinoxylans (of plant or microbial origin).

To better understand how varying levels of XOS affect broiler chicken growth performance, blood biochemistry, and intestine bacterial count, the current study was conducted.

A local hatchery sold 96 Cobb 500-day-old broiler chicks (40+.10 g each), which were divided into four groups with four replicates per dietary group (i.e., six birds per group) at random. The cages the birds were raised in had ample feeding and drinkers. To separate the serum, the blood sample was placed in a falcon tube and centrifuged at 5000 rpm. One-way ANOVA was used to evaluate the data.

When given in supplement form, XOS showed no ($p>0.05$) impact on the BWG and FI of broiler chickens between the ages of 13 and 26. The augmentation of XOS and FCR resulted in a substantially linear response. The FCR also linearly increased with increased XOS supplementation ($p = 0.021$). In line with earlier investigations, the current study found that varied XOS intake amounts had no discernible impact on the BWG and FI of broiler chickens. Due to a deficiency in the broiler's digestive enzymes, XOS enters the distal intestinal tract undigested. The metabolism and growth rates of the bird are allegedly closely correlated with the T3 and T4 hormones. The mismatch may result from variations in the dosage and source of XOS used in the studies.

The results of the current investigation showed that the FCR and TVC in the ileum and caecum were greatly improved by dietary supplementation of 2.5 g XOS kg^{-1}. The serum glucose was lower in the meal containing 2.5 g XOS kg^{-1}, while the levels of T3 and T4 were higher. Additionally, broiler chickens' dressing percentage increased but their belly fat content dropped when XOS (2.5 g kg^{-1}) was added to the diet. In a nutshell, supplementing broiler chickens with XOS at a dose of 2.5 g XOS kg^{-1} can enhance their overall performance.

Article Reference

M. Akter and N. Akter, 2021. Effect of xylo-oligosaccharides (XOS) on growth performance, blood biochemistry and total viable count in ileum and caecum of broiler chickens from day 13-26. Int. J. Poult. Sci., 20: 158-164.

KEYWORDS

Xylo-oligosaccharide, glucose, poultry diet, gut microbiome, intestinal bacterial count