Tropentag, September 17-19, 2018, Ghent

"Global food security and food safety:
The role of universities"

Growth Performance, Carcass Characteristics, Haematological Indices and Apparent Nutrient Retention of Broiler Birds Fed Enzyme-Supplemented High Fibrous Diets

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Abstract

The objectives of this eight weeks study were to evaluate the growth performance, carcass characteristics, haematology and apparent nutrient retention of broiler birds fed Roxazyme G® enzyme supplemented high fibrous diets. Two hundred day-old Agrited broiler birds were divided into ten experimental treatment groups of 20 birds, with two replications of 10 birds each. The groups were randomly allocated to each of ten diets in a 5×2 factorial arrangement that involved a control (0% wheat offal without enzyme) diet, four levels (10, 15, 20, 25) of wheat offal, and two enzyme levels (0 and 0.02 %) at the starter phase, and a control diet, four levels (10, 20, 30 and 35 %) of wheat offal, and two enzyme levels (0 and 0.02 %) at the finisher phase. Average final body weight, average daily weight gain, feed conversion ratio, carcass and organ weights were not different ($P > 0.05$) among dietary treatments. Significant ($P < 0.05$) interactions were observed between wheat offal and enzyme levels in average daily feed intake (ADFI). Dietary enzyme reduced ($P < 0.05$) average daily feed intake (ADFI) at all levels of wheat offal inclusion. White blood cell count (WBC), red blood cell count (RBC), haemoglobin concentration (Hb), lymphocytes, neutrophils, monocytes, basophils and eosinophil were not different ($P > 0.05$) among treatments. Packed cell volume (PCV) varied considerably among wheat offal and enzyme treated birds. Observable ($P < 0.05$) interactions occurred between dietary wheat offal and enzyme in PCV. Broilers that received 10, 30 and 35 % dietary wheat offal and enzyme had improved ($P < 0.05$) PCV. Dietary wheat offal and supplementary enzyme significantly ($P < 0.05$) affected apparent retentions of dry matter (DM) and ash. Significant interactions ($P < 0.05$) occurred between dietary wheat offal and enzyme. Digestion of ash was markedly ($P < 0.05$) increased by enzyme at all the levels in which wheat offal was included in the diet, whereas increase in DM retention occurred only at 20 % and 35 % wheat offal. The findings of the present study showed that broiler birds could tolerate up to 35 % inclusion level of wheat offal in their diets when supplemented with Roxazyme G® enzyme.

Keywords: By-products, enzyme, fibrous, retention, wheat offal

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