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Effect of Dietary Fibre on Egg Quality and Haematological Traits of Shaver Brown Hens

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Abstract

The effects of dietary fibre (DF) and enzyme (Roxazyme G2®)) levels on egg quality and haematological traits of Shaver brown hens were investigated for 10 weeks using 168, twenty-four weeks old laying hens. The hens were randomly divided into 8 groups of 21 birds each and assigned to 8 caloric (2.84 Mcal kg^{-1} ME) and nitrogenous (17 % crude protein) diets in a 4×2 factorial arrangement involving four dietary fibre levels (6.0, 8.0, 9.0 and 10.0 %) and two enzyme levels (0 and 10g). Each treatment was replicated 3 times with 7 birds per replicate. Feed and water were supplied *ad libitum*. Whereas, DF and supplementary enzyme levels had no significant ($p > 0.05$) effect on albumin height, yolk diameter, yolk weight, yolk index, yolk height and Haugh unit, egg weight was increased ($p < 0.05$) at 10 % level, and albumen weight increased ($p < 0.05$) at all the DF inclusion levels for the non-supplemented diets, and at 8 % DF level for the enzyme-supplemented diets. Although, treatments had no significant ($p > 0.05$) effect on haematological indices like haemoglobin concentration (Hb) packed cell volume (PCV), red blood cell count (RBC), white blood cell count (WBC), mean corpuscular haemoglobin (MCH), mean corpuscular haemoglobin concentration (MCHC), neutrophils, eosinophils, monocytes and basophils, mean corpuscular volume (MCV) and lymphocytes were significantly ($p < 0.05$) influenced by treatments. Addition of enzyme to some of the diets resulted in significant ($p < 0.01$) increase in lymphocyte at 9 % DF inclusion level, and decrease in MCV at 10 % DF inclusion level. It was concluded that up to 9 % crude fibre can be included in the diet of Shaver brown hens.

Keywords: Dietary fibre, egg quality, enzyme, haematological traits, shaver brown hens

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