

THE EFFECT OF THE USE OF DIFFERENT LEVELS OF AZOLLA TO MALE BROILERS DIETS IN THE PRODUCTION AND PHYSIOLOGICAL PERFORMANCE AND ECONOMIC FEASIBILITY

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ABSTRACT : This study was conducted at the Poultry Research Station of the Department of Agricultural Researches, Ministry of Agriculture for the period from 1 to 13 May 2018, which lasted 42 days, using 180 one day old Ross308 male chicks fed on added diets, Azolla was used at levels 5, 10, 20 and 30% for T₂, T₃, T₄ and T₅, respectively and were compared with the control treatment T₁, which is free of Azolla. Each treatment included three replicates each (12 birds for each replicates) in order to study the effect of using different levels of Azolla in the production and physiological performance and economic feasibility of male meat broilers. Significant increase ($P \leq 0.05$) in average body weight, weight increase, food intake rate, improved food conversion ratio and production index for the birds of the treatment 5% Azolla compared with control treatment and other treatments. There were no significant differences between the control treatment and experimental treatments in all biochemical characteristics of blood plasma, which included the concentration of glucose, protein, albumin and globulin, the activity of the liver enzymes ALT and AST, uric acid, creatine and triglycerides and low density fatty proteins (VLDL). Significant decrease ($P \leq 0.05$) in cholesterol level in blood plasma for the treatment of 5% Azolla compared to 10% and 20% Azolla treatments, respectively. Significant decrease ($P \leq 0.05$) in economic feasibility characteristics (cost of initial feed and final feed and the cost of kilogram of the produced meat and low cost rate per 100 kg/feed) for all Azolla treatments compared to control treatment. The treatment of 30% Azolla had had the most significant decrease ($P \leq 0.05$) in the percentage of feed cost compared to control treatment and other experimental treatments. We conclude from this study that it is possible to add Azolla to the diet by 5% feed to obtain a positive improvement in the production performance of broilers and achieve the best economic feasibility.

Key words : Azolla, meat broilers, production performance, physiological performance, economic feasibility characteristics.

INTRODUCTION

Nutrition is one of the most important elements in poultry projects. In addition, it is the most expensive in the poultry industry, accounting for more than 75% of the total cost of breeding meat broilers. The protein sources in the diet are the most expensive raw materials that compose the diets, such as soybean meal, which have become expensive and nowadays, it regarded as strategic crops dominating the global market for breeding meat broilers that led to an increasing in the cost of imports and increasing demand (Gangadhar *et al*, 2015). New and high value nutritious sources of feed should be sought and meet all nutritional needs for optimal growth, high return on profit and reduction of the cost of feed a result of the use of strategic feed sources imported from abroad, which in turn increases the profitability (Nancy and Amalaranis, 2016). Therefore, the search demands

that meat broilers diets must be of a high protein content. Here comes the interest in the Azolla plant, the free floating fern Azolla that belongs to the Azollaceae family, which is a good source of protein and its content is good of all essential amino acids and has a high content of minerals such as Iron, calcium, magnesium, potassium, phosphorus, manganese et al. It also contains reasonable amounts of vitamin A, beta-carotene and vitamin B12 and also contains probiotics (Paudel *et al*, 2015). Azolla, which grows in association with blue-green algae *Anabaena azollae* is a good source of protein and is easily cultivated, highly production and has good nutritional value (Namra *et al*, 2010). Paudel *et al* (2015) observed that the use of 10% Azolla significantly improved the production performance of the broilers and reduced feed consumption. Therefore, the study aimed to cultivate and produce Azolla and use it at different levels in the diet