

Reproductive Performance of the Cameroon Kabir Chicken Fed Natural Feed Additives

Ngantu Harrison Ndzi^{1*}, Keambou Tiambo Christian¹, Ngu George Tennyson¹ and Kenneth Jacob Ngoh Ndamukong¹

¹Department of Animal Sciences, Faculty of Agriculture and Veterinary Medicine, University of Buea, Buea, Cameroon

*Corresponding author: Ngantu Harrison Ndzi; Email: harrisonngantu@yahoo.com Tel: 671868663

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Abstract

Plant-based antimicrobial compounds could be used to replace some sub-therapeutic antibiotic growth promoters. The main objective of this study was to evaluate the effect of phytogenic feed additives as potential natural growth promoters, on reproductive performance in Kabir chicken. The study consisted 144 Cameroon Kabir roosters (24) and hens (120), fed diets containing graded levels of garlic, ginger, thyme (0.5% and 1%), euphorbia (0.75% and 1.5%) or moringa (2.5% and 5%) powders, a positive control diet with a commercial antibiotic and a negative control diet without any additive. The study utilized a complete randomized design. Feed and water were provided *ad libitum*. Zootechnical performances and egg characteristics were recorded until 3 months post-lay. Ginger treatments negatively affected egg production significantly ($P < 0.001$), while the euphorbia treatments drastically affected ($P < 0.001$) feed conversion during the laying period. The yolk colour score ranged from 7-11 and was not influenced by additives ($P > 0.05$). Fertility (74%) and hatchability (<57%) rates were poor and not treatment related ($P > 0.05$). Embryonic mortality was high (63%) and was among other factors affected by increasing levels of additives. Chick body weight at hatching was greatly improved by thyme at the 1.0% level of inclusion. The implications of such findings are discussed.

Keywords: feed additive, antibiotic, growth promoter, performance, Kabir chicken

1.0 INTRODUCTION

The long term use of antibiotics at subtherapeutic levels in livestock production for diseases control and growth promotion poses significant health risks on livestock product consumers, due to residue problems and the potential development of antibiotic resistant human pathogenic bacteria. Driven by the antibiotic resistance debate, the ban levied on subtherapeutic antibiotic utilization in animal production fuelled the search for non-antibiotic substances (alternatives), which might have similar effects in food-producing animals (Falcao et al., 2007). Recently, herbs, spices and various plant extracts have attracted great attention as potential substitutes to the currently used antibiotic growth promoters (Mountzouris et al., 2010).

A number of compounds have been isolated from ginger, garlic, moringa, euphorbia and thyme (Sarica et al., 2005; Shalaby and Hamoweih, 2010) and chemically characterized, but their potential in local poultry production

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