

**EFFECT OF FEEDING GHEE RESIDUE ON THE
PRODUCTION PERFORMANCE OF NATIVE
CHICKEN**

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CERTIFICATE

This is to certify that the thesis entitled "EFFECT OF FEEDING GHEE RESIDUE ON THE PRODUCTION PERFORMANCE OF NATIVE CHICKEN" submitted in partial fulfillment of the requirements for the Degree of Master of Veterinary Science in Poultry Science to the Tamil Nadu Veterinary and Animal Sciences University, Chennai - 51 is a record of bonafide research work carried out by P.RAMESH under my supervision and guidance and that no part of this thesis has been submitted for the award of any other degree, diploma, fellowship or other similar titles or prizes and that the work has not been published in part or full in any scientific or popular journal or magazine.

Date : 19/7/2016

Place : Chennai


(Dr. S. EZHILVALAVAN)

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ABSTRACT

Title	: EFFECT OF FEEDING GHEE RESIDUE ON THE PRODUCTION PERFORMANCE OF NATIVE CHICKEN
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The biological experiment was designed to study the effect of feeding ghee residue in native chicken (Aseel) for a period of 12 weeks on various parameters viz. bi-weekly body weight, gain in body weight, feed consumption, feed conversion ratio, livability, carcass characteristics, cut-up parts yield, sensory evaluation, biochemical parameters (total cholesterol, triglyceride, high density lipoprotein, low density lipoprotein) and the cost effectiveness (economics) of feeding ghee residue.

Three hundred day-old, unsexed, Aseel native chicken belonging to single hatch were wing banded, weighed and randomly allotted into four treatment groups. All the treatment had three replicates and each consisted of twenty five chicks.

The treatment groups were fed with diets containing ghee residue at different inclusion levels, i.e. 0 per cent (T_1 - control), 5 per cent (T_2), 10 per cent (T_3) and 15 per cent (T_4).

The complete analysis of ghee residue revealed the moisture, crude protein, crude fibre, ether extract, nitrogen free extract and total ash contents of ghee residue were 12.10, 19.86, 3.49, 47.12, 25.63 and 3.90 per cent, respectively. Fatty acid profile of ghee residue revealed that the palmitic acid registered the highest percentage (38.88) among saturated fatty acids and the oleic acid accounted for the highest percentage (25.15) among unsaturated fatty acids. Linoleic, Linolenic, Eicosapentaenoic and Decosaheptaenoic acid content of ghee residue were 2.02, 0.79, 0.36 and 0.25 per cent respectively. Amino acid profile of ghee residue revealed that the lysine and methionine, content were 0.99 and 0.61 per cent, respectively. Threonine and arginine levels are found to be at 1.44 and 0.76 per cent, respectively. The glutamic acid recorded the highest percentage (5.26), while cystine registered the lowest percentage (0.35) among amino acids in ghee residue.

Biological experiment revealed that there was significant difference ($P \leq 0.01$) in body weight and body weight gain due to dietary inclusion of ghee residue between treatment groups throughout the study period except during the 2nd week. At the end of experimental period i.e., at 12 weeks of age, dietary inclusion of 5 per cent ghee residue (T_2) had significantly higher body weight than other treatment groups. The dietary inclusion of 15 per cent ghee residue (T_4) had lower body weight than any other treatment groups.

Data on cumulative feed conversion ratio revealed significant ($P < 0.01$) difference in native chicken throughout the study period except at the age of 2 weeks and 4 weeks. At twelve weeks of age, the group fed on experimental diet incorporated with 5 per cent ghee residue (T_2) recorded significantly ($P < 0.01$) better feed conversion ratio than other treatment groups. Livability was 100 per cent in all the treatment groups throughout the experimental period.

The carcass characteristics except giblets yield did not differ significantly ($P \leq 0.05$) between the treatment groups. The cut-up parts yield of drumstick, thigh, back and neck did not differ significantly between treatment groups. However, significantly ($P \leq 0.01$) higher breast and wings yield was recorded in group fed 5 per cent ghee residue. The result on sensory evaluation of meat samples collected from various treatment groups in native chicken fed on graded levels of ghee residue revealed no significant difference except juiciness ($P \leq 0.05$). Saturated fatty acid, mono unsaturated fatty acid, poly unsaturated fatty acid and total n-3 fatty acid profile of muscle samples (thigh, breast and skin) revealed no significant difference between treatment groups.

Among biochemical parameters only serum total cholesterol showed significant difference ($P \leq 0.05$) between treatment groups with higher value recorded in birds fed with 5 per cent ghee residue.

The cost effectiveness of the native chicken fed with various levels of ghee residue showed increased net profit per kg live weight in the group fed 5 per cent ghee residue.

Key words: Native chicken – Ghee residue – Production performance