

STUDIES IN THE EFFECT OF DIETARY PROTEIN LEVEL IN CHEMICAL COMPOSITION OF BROILER RABBIT MEAT

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ABSTRACT

The protein content on dry matter basis was found to be highest (67.30 ± 0.17 and 72.22 ± 3.28 percent) in Newzealand White and Soviet Chincilla rabbit respectively when fed with 22% protein diet. The dry matter content of Newzealand white rabbit meat was maximum 30.40 ± 0.18 percent when fed with 16% protein diet and minimum 26.42 ± 1.54 percent when fed with 14% protein diet. The dry matter content was maximum 25.27 ± 0.35 percent when fed with D_4 (20%) diet in Soviet Chincilla rabbit. The results showed that Soviet chincilla rabbit meat contained higher protein and Newzealand white rabbit meat contain higher dry matter.

INTRODUCTION

The rabbit meat is a wholesome tasty product compared to other meat, being rich in protein and low in fat cholesterol and sodium. The meat is amber white, fine grained delicately flavoured appetising and nutritious but low in calorie content. On the other side, the size of the carcass, fine meat quality and wide range of preparation suitably make it excellent and economical meat for human use in any season round the year. The composition and quality of meat may vary mostly depending upon the age at slaughter and the method of feeding but nevertheless, the domesticated rabbit meat of all ages showed high value for human consumption. So, an attempt was made to find out the quality of meat under different feeding regime.

MATERIALS AND METHODS

A total of 5 weaned rabbit each from Newzealand White (NZW) and Soviet chincilla (SC) rabbit were undertaken for the study. In this trial 5 different diets were prepared viz. D_1 , D_2 , D_3 , D_4 and D_5 with 14, 16, 18, 20 and 22 percent of protein level respectively. A feeding trials for the period of 90 days were conducted and after the trial the animals were slaughtered. The meat sample were collected from the thigh, shoulder muscle and loin area and then they were amalgamated together through mincing for the purpose of quality estimation (Rao *et al*, 1978). Protein and dry matter content of meat was estimated (AOAC 1990). Randomised Block design is used to analyse the experimental data (Snedecor and Cochran, 1982).

RESULT AND DISCUSSION

Rabbit meat is stated to contain high protein and low in fat. The protein content of meat of NZW and SC rabbit are presented in Table 1. The protein content on dry matter basis in NZW rabbit was found to be highest 67.30 ± 0.17 percent when fed with D₅ (22%) diets followed by 67.12 ± 1.58 in D₄ (20%) diets and lowest protein content when fed with D₁ (14%) diets. This clearly indicated that feed having 20 and 22% of protein in the diet gave better return in terms of better yield of protein in meat.

The SC rabbit meat contains more protein content 72.22 ± 3.28 percent on diet having 22% protein level and lowest value 68.40 ± 2.26 percent recorded on 14% dietary protein level. The meat protein content increases as the dietary protein level increases in both the breeds. However, the t - test analysis revealed that SC rabbit meat contained significantly more protein than NZW rabbits. Dehale (1981) and Butcher et al (1983) could not detect any difference in protein content of rabbit meat between the feed treatment for 18-20% protein diets. However, the present results were in agreement with Fekete (1992) and Abou ashour Ahmed (1986) who found differences between the treatment.

In NZW the maximum dry matter percentage was 30.40 ± 0.18 in their meat when fed with D₂ (16% protein) diets and in SC rabbit the maximum dry matter percentage was 25.27 ± 0.35 when fed with D₄ (20% protein) diets. Thus it can be concluded that 20% dietary protein level is best under sub-tropical condition for quality meat production.

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Table 1. Effect of dietary protein level on carcass/protein and dry matter of Newzealand White and Soviet Chincilla rabbit

Diets	Dry matter (%) \pm SE		Protein % \pm SE	
	Newzealand White	Soviet chincilla	Newzealand White	Soviet Chincilla
D ₁	26.42 \pm 1.54	22.80 \pm 0.10	61.24 \pm 1.04	68.40 \pm 2.26
D ₂	30.40 \pm 0.18	24.26 \pm 0.41	63.09 \pm 1.89	70.48 \pm 3.25
D ₃	29.89 \pm 0.30	24.65 \pm 0.21	62.39 \pm 1.11	71.41 \pm 1.21
D ₄	29.43 \pm 1.18	25.27 \pm 0.35	67.12 \pm 0.17	71.67 \pm 1.27
D ₅	29.62 \pm 0.27	24.21 \pm 0.28	67.30 \pm 0.17	72.22 \pm 3.28