

Effect Of Graded Levels Of Crude Protein In Diets On The Male Camels Carcass Characteristics

Al-Owaimer, A. N.

Department of Animal Production, College of Agriculture, King Saud University, P.O. Box 2460, Riyadh 11451, Saudi Arabia

ABSTRACT

Eighteen Najdi male camels (204.5 kg) were divided equally into three groups (6 animals each) and fed 12, 14.2 and 17% dietary crude protein (CP) for 150 days to evaluate the effect of dietary protein levels on carcass characteristics, fatty acids, and amino acids profile. Camel fed 14.2% CP significantly ($P < 0.05$) higher final carcass weights than those fed 12% CP diet. Fat values (kidney fat and ether extract percentages) were higher for camel fed 14.2% than 12 or 17% CP diets. Proximate chemical analysis of camel longissimus muscle were not affected ($P > 0.05$) by dietary CP diets. Amino acid alanine of the camel fed 12% was significantly ($P < 0.05$) higher than 14.2 and 17% CP diet. Camels fed 14.2% CP significantly ($P < 0.05$) higher myristic, palmitic and saturated fatty acids than 12% CP diets. On the other hand, linoleic and unsaturated fatty acids were higher with camels fed 12 than 14.2 % CP diets. Generally, there was no major changes between 14.2 and 17% CP diets except fatty acids composition.

INTRODUCTION

Protein supplements for ruminant animals are of special concern as they are generally the most expensive ingredients of animal diet. They can markedly affect animal performance and production. Protein is one of the most limiting nutrients in cattle finishing diets and is probably more critical in diets for bulls due to their more rapid gains and leaner carcasses (1). Martin *et al.* (2) and Anderson *et al.* (3) indicated that low protein diet (10% crude protein) was not adequate to support maximal growth of young bulls and that limiting crude protein may decrease fatness. Other studies noted a lower daily gains for young dairy bulls finished on a diet containing 12% protein in comparison with older dairy bull that did not respond to an extra protein in their diet (4). However researches regarding the effect of feeding in general on camel carcasses is still somewhat masked.

Therefore, the objective of the present study was to investigate the effect of different levels of dietary protein on the male camels carcass characteristics, fatty acids, and amino acids profile.

MATERIALS AND METHODS

A total number of 18 Najdi male camels of an average weight of 204.5 kg were used in the present study. The camels

were randomly allocated to three groups of 6 animals each and fed 12, 14.2 and 17% CP-diets. After allowed one-month period for adaptation, feed and water were offered *ad libitum* for 150-day experimental period. The experimental diets consisted of 70% concentrates, 25% salicornia hay and 5% wheat straw. The ingredients and chemical compositions of all experimental diets showed in Table 1. Animals were fasted for 24 hour before slaughter, and slaughtered at Labon Farm in Al-Karj area. Final weight, warm carcass, and kidney fat weights were recorded individually for each animal. Longissimus muscle between 9-12 ribs was excised one hour after exsanguination and transferred to King Saud University Meat Laboratory. The Longissimus muscle was excised from bone and subcutaneous fat, ground and stored in polyethylene bag at -20°C for chemical analysis. Moisture, ash, protein (N X 6.25) and ether extract were determined according to AOAC (5).

Ten grams of the previously ground longissimus muscle samples were used to extract the lipid according to procedure of (6). Fatty acids analyses were determined by Gas Chromatography (GC 17 A Shimadzu Co. Japan) according to the procedures described by (7). Fatty acids converted into methyl ester derivative before GLC analysis.