The Effect of Feeding Diet with Graded Levels of Roselle (Hibiscus Sabdariffa) Seed on Carcass Characteristics and Meat Quality of Sudan Desert Lamb

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Abstract

Roselle (karkadeh, Hibiscus sabdariffa) is drawn mainly for the production of calyxes and epicalyxes, which are used as beverages. Roselle seed production is about 90 Lp/acre and the total area cultivated is as 15,000 acres. The present study was conducted to evaluate roselle seed in ruminants feeding. Graded levels of roselle seed (0, 10 and 20%) were incorporated in three diets iso-caloric, iso-nitrogenous diet for lambs. Diet a contained 0% roselle seed while diets B and C contained 10 and 20% roselle seed respectively. There was a significant (P<0.05) linear increase in feed intake with increasing roselle seed level in the diet, but dietary treatment had no significant effect on feed conversion efficiency, average daily gain and final body weight. In spite of the lambs fed diets containing roselle seed were found to be superior over the control in the previous parameters. Dietary treatments did not affect any carcass parameter. The proportions of wholesale cuts were also not influenced by dietary treatments. Carcass composition parameters did not differ significantly among the treatment groups. Muscle percentage was slightly higher in the control group. But fat percentage was higher in groups B and C which were given roselle seeds in their diets, whereas bone percentage was higher in group C. The slaughter by-products showed no significant differences among dietary treatment groups. Chemical composition of meat revealed that the protein content in the muscles of group A was slightly higher than that of the other groups, while group C had the highest (P<0.05) fat and lowest (P<0.05) moisture content. The meat of group C was of superior water-holding capacity and lowest cooking losses, and was more tender than that of groups A and B. The meat colour of group B and C was darker than that of group A, possibly due to a decrease in myoglobin concentration as an increase in intra-muscular fat. It is thus concluded that roselle seed when incorporated in lamb diets up to 20% supported a satisfactory live weight gain and feed conversion efficiency. They produced carcasses which were significantly not different from that produced by the control diet. Meat muscle composition and quality was also similar to that of the control diet.

Keywords: Roselle (Hibiscus sabdariffa) seed, Desert lamb , Fattening