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EFFECT OF ZINC SUPPLEMENTATION ON THE PERFORMANCE AND CARCASS CHARACTERISTICS OF GROWING LAMBS FED RATIONS DIFFER IN CRUDE PROTEIN CONTENT

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ABSTRACT

Six mature Farafra wethers (43.6 ±3.6 kg) were divided into two similar groups (three animals in each) and used to evaluate six feeding rations in digestibility trials (14 % CP without Zn supplementation (T1), 20 mg/d Zn supplementation (T2), or 30 mg/d Zn supplementation (T3), and 10 % CP without Zn supplementation (T4), 20 mg/d Zn supplementation (T5) or 30 mg/d Zn supplementation (T6) as $ZnSO_4$). The rations contained 14% CP were higher in the digestibility of CP, N balance and DCP than those contained 10% CP. Zinc supplementation with the 10% CP rations increased significantly the digestibility of CP, EE and DCP. There was no significant effect ($P \geq 0.05$) of different levels of zinc with the two levels of protein on the digestibility of OM, CF, NFE and TDN.

Thirty male Farafra lambs (averaged 22.19 kg body weight and 5 months old) were randomly divided into six feeding groups (5 in each) in a growth trail for 6 months to evaluate the effect of zinc sulphate supplementation on growth performance of growing lambs fed rations differ in crude protein content. There was no significant ($P \geq 0.05$) effect of zinc supplementation or protein level on final body weight gain, daily gain, dry matter intake, and feed conversion at the end of the experiment. But lambs fed rations contained 14% CP with Zn supplementation (T2 and T3) gained more rapidly than lambs fed rations contained 10% CP with Zn supplementation (T5 and T6) during the first 112 d of the experiment, and the opposite was happened during the period from 112 to 180 days of the experiment. Empty body weight, carcass weight, and dressing percentage were not significantly affected with increasing CP or Zn level. Zinc supplementation by 20 or 30mg increased proportions of lean and the opposite was found with fat.

The ration contained 10% CP with 20 mg Zn had the highest economic efficiency (being 2.06) and the lowest was found with 14% CP without Zn (1.69). It could be conclude that Zn supplementation improved digestibility, nutritive values and economic efficiency of growing lambs, especially with feeding 10 %CP ration.

Keywords: Zinc- Dietary protein- Sheep- performance- carcass- metabolism.