EFFECT OF FEEDING LEVEL AND REPLACEMENT OF NIGELLA SATIVA MEAL IN DIET OF RAHMANI EWE LAMBS ON: 2. ONSET OF PUBERTY, OESTROUS ACTIVITY AND CONCEPTION RATE

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SUMMARY

Influence of level of feeding (80% or 100 of NRC, 1985 allowance) and substituting CFM protein by NSM protein at the rate of 50% at the two tested levels on reproductive performance of Rahmani ewe lambs was studied. Forty Rahmani ewe lambs aged 62.25±1.1days and weighed 14.8±0.4 kg were divided into four comparable groups according to live body weight and age, 10 ewe lambs in each. Ewe lambs were used in this study as follows: The 1st group (G1), ewe lambs received 80% of NRC (1985) allowance of crude protein (CP) based on LBW for early weaned lambs up to 30 kg LBW, then, the requirements were changed for replacement ewe lambs up to the end of the experiment. The 2nd group (G2), ewe lambs received as that in (G1), but 50% CFM protein was replaced by NSM protein. The 3rd group (G3), ewe lambs received 100% of NRC (1985) allowance of the same roughage: concentrate ratio (40:60, R: C). The 4th group (G4), ewe lambs received as that in (G3), but 50% CFM protein was replaced by NSM protein. Daily oestrous observation was started at 5 months of age to detect age and weight at puberty. Also, LBW at mating and conception were recorded. Results indicted similar effect of CP level and NSM, on puberty and mating ages. All ewe lambs (100%) fed 80% CP level or diets with NSM came in oestros up to yearling compared with 94.4% in those fed 100% CP level or diets without NSM. Only one animal of each ewe lambs fed 100% CP (5.6%) or diets without NSM (5.3%) which did not exhibit oestros up to yearling showed oestrous behavior after yearling.. All ewe lambs (100%) fed 80% CP with or without NSM and those fed 100% with NSM showed oestros up to yearling as compared to 88.9% in those fed 100% without NSM up to yearling. Oestrous duration was insignificantly longer in ewe lambs fed 80% than those fed 100% CP. Feeding ewe lambs on diet with NSM did not affect oestrous duration, but slightly increased short duration and decreased the normal one. Ewe lambs fed 80% without NSM showed the longest duration with high distribution of normal type of duration. Feeding ewe lambs on 80% CP or diet without NSM insignificantly increased oestrous duration compared with those fed 100% CP or diet with NSM. Average length of oestrous cycle was about 18 days was not affected by CP level or NSM, being almost within the normal type between 17.44 and 19.61days. The highest normal cycles were recorded in ewe lambs fed 80% CP with NSM (75%) and the lowest were in those fed 100% CP with or without NSM (50%). Occurrence of the 1st oestrus was nearly similar in ewe lambs

fed different dietary treatments. Percentages of mated ewe lambs fed 80% CP (94.1%) or diets without NSM (93.3%) were higher than those fed 100% CP (85.7%) or diets with NSM (87.5%) up to yearling. The opposite was observed after yearling. The percentages of mated ewe lambs were associated with lower percentages of oestrous incidence as affected by experimental diets. Lower conception rate (CR) was recorded for ewe lambs, being almost slightly lower for ewe lambs fed 80% CP or diets with NSM (76.5 and 75%) than those fed 100% CP (78.6%) or diets without NSM.

It could be concluded that feeding Rahmani ewe lambs on 80% dietary CP or diets with or without 50% replacement of CFM by NSM proteins had beneficial effect on oestrous activity in terms of length of oestrous cycle and oestrous duration as well as on conception rate.

Keywords: *Rahmani ewe lambs, puberty, oestrous activity, conception, Nigella Sativa*