Studies on sheep nutrition

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The present study was carried out at Moshtohor Animal Farm-Qalyoubia, which belong to Ministry of Agriculture during the period from 12 August 2001 till 30 January 2002. The experiment lasted for 168 days.The aim of this experiment was to investigate the effect of pronifer and more-yeast supplements as growth promoters on the productive performance of growing crossbred lambs. Twenty five crossbred (’/2 Osimi x ’/2 Rahmani) growing lambs of about 6-8 months age and an average initial live body weight (LBW) of 25 kg were used in this experiment. The animals were divided into five nearly similar groups on the basis of initial LBW and age. Each group contained five animals. The experimental treatments were schemed as follows:T1(control diet: wheat straw+ CFM), T2(control diet+1.5kg pronifer/ton CFM), T3(control diet+3kg pronifer/ton CFM), T4(control diet +2.5kg more-yeast/ton CFM) and T5(control diet+5kg more-yeast/ton CFM).Results of this study could be summarized as follows:1- Lambs fed T1(control) recorded the lowest digestibility values for all feed nutrients (DM, OM, CP, CF, EE and NFE). While, lambs fed all treated rations, T2(1.5 kg pronifer/ton CFM),T3(3kg pronifer/ton CFM), T4(2.5kg more-yeast/ton CFM)and T5(5kg more-yeast/ton CFM) achieved almost higher digestibility values for all feed nutrients compared with the control treatment. The differences in nutrients digestibility due to treatment effect were not significant except for CP digestibility. Lambs of T3 and T4 showed the highest CP digestibility values. The differences in CP digestibility for lambs of either T3 and T4 and those of Ti and T2 were significant ($P<0.05$), whereas, the differences between lambs of neither T3 and T4 nor Ti and T2 and those of T5 were not significant. The present results indicated that T3 and T4 showed the highest digestibility values for all nutrients compared with the control group, and increasing the pronifer supplementation from 1.5 to 3 kg/ton CFM, almost increased the nutrients digestibility, whereas a reverse trend was observed with increasing more-yeast supplementation from 2.5 to 5 kg/tonCFM.2- The control diet (T1) had the lowest SV and TDN values, while T3 (3kg pronifer/ton CFM) showed the highest ones. However, all supplemented diets with either pronifer or more-yeast had higher SV and TDN values than the control diet, but without significant differences. The lowest DCP values were shown by T2 and T1 while the highest ones were recorded by T3 and T4, the differences were significant ($P<0.05$), T2 and T1 achievedthe highest NR values, whereas T3 and T4 showed the lowest ones. The differences in NR values due to pronifer and more-yeast supplementation were almost non-significant.In general, T3 (3kg pronifer/tOn CFM) and T4(2.5kg more-yeast/ton CFM) showed the best feeding values (DCP, SV and TDN) and narrowest NR values, compared with either the control or other treatments.3-At 8 weeks, lambs of T5 recorded higher LBW than those of all other treatments. However, the differences due to growth promoters supplementation were not significant. whereas, at 16 and 24 weeks, lambs of T4 and T5 achieved the highest LBW values, while lambs of T2 and T3 showed the lowest ones, but the differences in all cases were not significant.4-Lambs fed more-yeast supplemented diets had slightly higher daily BWG values than those of other treatments, whereas lambs fed diets showed almost lower daily BWG values. However, the differences in daily BWG values of lambs due to treatment effect were not significant during all interval periods of the feeding trial.5-Lambs of T1(control) consumed the highest daily water intake calculated as ml/head/day, ml/kg BW or ml/g dry matter intake(DMI), while lambs of T4 consumed the lowest daily water intake, but the differences in daily water intake due to treatment (supplementation) effect were not significant..6-Lambs of T4 and T5 (more-yeast supplemented groups) consumed the highest amount of daily DM feed intake during the whole

experimental period, whereas, those of T2 and 13 (pronifer supplemented groups) recorded the lowest amount compared with the control. The differences in daily DM feed intake between each of T4 and T5 and those of T2 and T3 were significant (P<0.05), whereas, there were no significant differences in daily DM feed intake between Ti (control) and each of T2, T3 and T5.7-The best feed conversion values (kg DM, SV, TDN and DCP/kg gain) were recorded by lambs of T2 followed by lambs of T5, whereas, the poorest feed conversion values were shown by lambs of T4 followed almost by those of T3. The differences in feed conversion values due to treatment effect (growth promoters supplementation) were always non significant.8-The best economic feed efficiency value (2.452) was shown by T2 followed by values of T1, T3 and T5 being 2.432, 2.339 and 2.337, respectively, while, 14 achieved the lowest (poorest) economic feed efficiency value being 2.310.9-The differences in ruminal pH values at the different experimental periods due to treatment effects were very limited and without any significant effect. The pH values due to T5(5kg more-yeast/ton CFM) effect were the lowest at all experimental periods except at 24-weeks, where T2(1.5 kg pronifer/ton CFM)and T1 (control diet) recorded the lowest values. The maximum pH values (P<0.05) were recorded before feeding, whereas the minimum values throughout all the different periods of the feeding trial were observed at 3 hrs post feeding and tended to increase (almost non-significant)after that at 6hrs post feeding. The interaction between treatment and time of sampling had no-significant effect on ruminal pH values.10- More-yeast treatments (T4 and T5) recorded lower ruminal NH3-N values compared with the other treatments during all the experimental periods (8, 16 and 24 weeks). While, reverse trends were observed with T1 (control) and pronifer treatments (T2 and T3). The differences in NI-I3-N concentration due to treatment effects were significant (P<0.05) only at 16 and 24 weeks of the experimental periods. The highest values at these two experimental periods were estimated for T1 (control). While, the lowest ones were observed for T5(5kg more-yeast/ton CFM) and the differences were significant (P<0.05). whereas, no significant differences were detected between other treatments. The NH3-N concentration was minimum before feeding and increased to its maximum level at 3 hrs post feeding, then tended to decline at 6 hrs post feeding during all experimental periods.11-The ruminal TVFA's concentration gradually increased with the increase in age of lambs (periods of trial), the highest concentrations were recorded at 16 and 24 weeks, while the lowest ones were shown almost at 0 and 8 weeks. Also, all treated lambs with either pronifer(T2 and T3) or more-yeast (T4 and T5) had higher TVFA's concentrations than the control group during all the experimental periods (8, 16 and 24 weeks) except for T2 at 8 weeks. The pronifer and more-yeast supplements had no significant effect on the ruminal TVFA's concentration of lambs during all feeding periods. TVFA's reached the highest level after 3 hrs post feeding after which it declined at 6 hrs post feeding. Sampling time had significant (P<0.001) effect on TVFA's concentration during all the experimental periods (0, 8, 16 and 24 weeks). whereas, there was no significant effect for the interaction between treatment and sampling time on TVFA's concentrations during all experimental periods.12-The differences in TP, Al contents and Al/G ratio due to treatment effects were not significant, whereas, G content was significantly (P<0.05) affected by growth promoters supplementation. Experimental period exerted significant effect (P<0.05 and P<0.01) on TP and its fractions (Al and G) and also, Al/G ratio.13-The differences due to treatment effect on plasma U concentration were significant (P<0.05), T4 and 15 showed the highest U concentration values, while T1 and T2 recorded the lowest ones. Different experimental periods of the feeding trial had no significant effect on plasma U concentration .14-The highest value of plasma creatinine was recorded for T1 followed by T3 and T2 (pronifer fed groups). The lowest values were shown by T4 and T5 (more-yeast fed groups) with no significant differences among all groups due to treatment effect. The differences in plasma creatinine values due to experimental period effect were not significant.15-Plasma cholesterol values, generally, followed the same pattern with plasma creatinine values. The differences in cholesterol values due to treatment effects were not significant. whereas, cholesterol values increased (P<0.001) with increasing the experimental period, the lowest value was estimated at 0-time, followed by those recorded at 8, 16 and 24 weeks. The differences in cholesterol values were only significant (P<0.05) between 0-time and 8 weeks experimental periods.16-Plasma GOT values of lambs fed T4 and T5 were higher than those of lambs fed T2 and T3 and the lowest value

was recorded by T1. The differences in GOT values due to treatment effectwere not significant. Experimental period exerted significant (P<0.001) effect on GOT values. It decreased with the advance in age of lambs. The highest values were recorded at 0-time and 8 weeks, whereas the lowest ones were achieved at 16 and 24 weeks, with significant differences.17- The highest plasma GPT value of lambs fed the experimental diets was recorded with T3 and the lowest one was shown with T2, with no significant differences in GPT values due to treatment effect, whereas, the differences in GPT values due to experimental period were significant (P<0.01).In general, there were no significant differences in all blood plasma parameters examined due to interaction between treatment and experimental period