

***DETERMINING THE RELATIONSHIPS AMONG BOTH PRODUCTIVE AND REPRODUCTIVE PERFORMANCES AND SOME WOOL TRAITS IN BARKI SHEEP***

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***ABSTRACT:***

Barki sheep flock of 489 animals maintained on Mariout Research Station close to Alexandria were studied during three years to determine the relationships among productive and reproductive performances and some wool traits in Barki Sheep. Flock management was typical for commercial conditions in the area. The average number of matings per conception in Barki ewes was 1.31. Ewes of low Kemp score had significantly the lowest number of matings ( $1.24 \hat{\pm} 0.04$ ) than those of medium Kemp ( $1.32 \hat{\pm} 0.03$ ) and abundant Kemp ( $1.38 \hat{\pm} 0.05$ ). Generally, it could be seen that correlation coefficients showed high values between Point of Break, length (POBL) with Point of Break, weight (POBW); Coarse fibres (CF%) with Fine fibres (-FF%); Medullation index (MI) with Fine fibres (-FF%) and Kemp fibres (KF%) with Medullation index (MI). Correlation coefficients were of medium magnitude between Resilience (RES) with Bulkiness (BUL); Staple Crimp (SC) with Fibre diameter (-FD); (SC) with (-KF%) and (MI); (RES) with (-KF%) and (-MI); (FD) with (-FF%); (FD) with (KF%); (FD) with (MI); (FF%) with Heterotype fibres (-HF%); (FF%) with (-KF%); (HF%) with (MI). Other correlation coefficients were of low magnitude. It could be concluded that selection for low values of fibre diameter could result in an increase in FF%, BUL and RES and a decrease in KF% and MI. These results also indicated that selection for high values of bulkiness could result in an increase in FF%, RES and yield ( $r= 0.22$ ) and a decrease in FD, KF% which might cause a decrease in wool production. Phenotypic correlation coefficients between some objective wool characteristics of Barki sheep and yarns properties were also studied.

***Key words:*** Barki sheep, Relationship, Productive, Reproductive, Wool characteristics and yarn properties.

***EFFECT OF DRY FAT SUPPLEMENTATION ON DIGESTIBILITY, FEEDING VALUE AND RUMEN FERMENTATION OF OSSIMI SHEEP***

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***ABSTRACT:***

This study was carried out in order to study the effects of supplemental protected dry fat on nutrient digestibility, nutritive value and rumen parameters. Three Ossimi Rams (average body weight of  $50 \pm 3$  kg) were used in  $3 \times 3$  Latin square design with three experimental rations. The first one served as a control ration (60% clover hay + 40% concentrate feed mixture) without added fat (R0); the second and third rations were the control supplemented with either 3% (R3) or 5% (R5) dry fat (on DM basis), respectively. The results revealed that digestibility of DM was non-significantly higher with sheep fed the 5% dry fat supplemented ration (R5, 61.54%) than those received the 3% dry fat (R3, 60.01%) or the control ration (R0, 58.96%). The same trend was observed with OM digestibility being higher for R5 (63.96%) followed by R3 (62.48%) and least for R0 (61.64%). Digestibility of CP differed between the dietary treatments being high for R5 (69.46%) and low for R0 (58.12%) and intermediate for R3 (62.64%); differences were highly significant ( $P < 0.01$ ). Digestibility of EE was significantly ( $P < 0.01$ ) increased from 81.17% in R0 to 84.09% in R3 and to 85.34% in R5. Dietary treatments did not have any significant effects on the digestibility of NFE. Dietary fat supplementation increased the digestibility of CF from 54.15 in the control diet to 58.09 and 60.95% in R3 and R5, respectively. Fat treatments improved the nutritive value as TDN and DCP. Values of TDN were 57.04, 60.72 and 66.19% for R0, R3 and R5, respectively. Digestible CP also improved from 7.22 to 7.66 and 8.29% for R0, R3 and R5, respectively. Rumen VFA was significantly higher for the control group than the treated ones. In general, VFA increased in all treatment groups to reach its peak at 4-hr post feeding and declined thereafter. Concentration of rumen ammonia-N was significantly higher ( $P < 0.05$ ) for the control group than the fat-treated groups (at both levels). Values of rumen pH among groups were found to be higher for the control and R3 ration than R5. Logically, pH values took the opposite trend of the VFA.

***Key words:*** Fat, Supplementation, Digestibility, Fermentation, Sheep

***EFFECT OF SULFUR SUPPLEMENTATION ON NUTRIENTS UTILIZATION  
AND RUMEN MICROBIAL ACTIVITY IN OSSIMI SHEEP***

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***ABSTRACT:***

The present experiment was conducted to study the effect of sulfur supplementation on nutrients digestibility, feeding values and rumen microbial activity using four Ossimi rams surgically fitted with ruminal fistulae. The experimental design was 4X4 Latin square design. The S levels were 0, 2, 4 and 6g/head/d (R0, R2, R3 and R4, respectively) The results obtained showed that S-supplementation led to increase in the digestion coefficients. Ration 3 showed highly significance effect in digestion coefficient of DM, OM, CP, NFE and EE than the other studied rations. Nutritive value (TDN and DCP) was highly significant for ration 3 (N:S ratio 10:1). VFA production and ammonia-N in the rumen of sheep fed ration 3 was significantly higher than the other rations.

***Key words:*** dietary sulfur, digestibility, microbial activity, Ossimi sheep.

***REDUCING ENVIRONMENTAL POLLUTION OF MANURE BY ADDING  
TAFLA AND YEAST TO DAIRY BUFFALO RATION***

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***ABSTRACT:***

This study was carried out at the Experimental Buffalo Unit of the Animal Production Department, Faculty of Agriculture, Minufiya University, Shebin El-Kom, Egypt. Nine dairy buffalo cow at 2nd to 4th lactation with an average body weight  $614 \pm 24.08$  kg were randomly assigned among three experimental tested rations (three animals each). The experimental rations were Control ration (42% commercial concentrate feed mixture + 33% berseem hay + 25% rice straw), Control ration + 3% Tafla/animal/day and Control ration + 20 g Baker's yeast/animal/day (on dry matter basis). Fresh manure sample was collected from each animal daily and physical, chemical and biological analyze were applied. Manure from animals fed tafla supplemented ration had the lowest ( $P < 0.01$ ) odor intensity followed by manure from animals fed yeast additive ration, while manure from animals fed control ration had the highest odor intensity ( $1.83 \pm 0.058$ ,  $2.42 \pm 0.048$  and  $2.68 \pm 0.064$ , respectively). The similar differences were evident for moisture percentage ( $78.90 \pm 0.23$ ,  $80.60 \pm 0.26$  and  $84.38 \pm 0.26$  % respectively). The effect of adding tafla and yeast on manure pH value was highly significant ( $P < 0.01$ ) but within normal range. Manure from animals fed tafla supplemented ration was lower in nitrogen, phosphorus and potassium % ( $P < 0.01$ ) than either manure from animals fed yeast additive ration or manure from animals fed control ration (0.433- 0.105- 0.377, 0.467- 0.108- 0.374 and 0.498- 0.121- 0.395 %, respectively). After 6, 12, 24h of incubation manure from animals fed tafla supplemented ration had the lowest gas production followed by manure from animals fed yeast additive ration, while manure from animals fed control ration had the highest gas production (0.633- 1.485- 2.767, 0.674- 1.570- 3.093 and 0.893- 1.903- 4.341 ml/g manure, respectively). Manure from animals fed tafla supplemented had the lowest ( $P < 0.01$ ) coliforms count followed by manure from animals fed yeast additive, while manure from animals fed control ration had the highest coliforms count ( $5.31 \pm 0.020$ ,  $5.44 \pm 0.012$  and  $6.46 \pm 0.015$  cfu Log<sub>10</sub>/g manure, respectively).

***Key words:*** Environmental pollution, Buffalo, Manure, Tafla, yeast.

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