

COMPETENT FEEDING MANAGEMENT – A REQUIREMENT FOR PROFITABLE SHEEP PRODUCTION, EXPERIMENTAL EVIDENCE IN EGYPT

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SUMMARY

An experiment was carried out to quantitatively characterize inherent production traits of sheep in southern Sinai. A free choice cafeteria feeding system was adopted to study diet selection and voluntary feed intake during the different stages of the production cycle.

Eighty-five ewes in four groups were used. A control group was fed according to NRC standards throughout. Ewes in the three experimental groups were offered one of three basal roughages; berseem hay, one-third hay plus rice straw and rice straw plus a molasses-urea mixture. Roughages were made available *ad lib* throughout the experiment and comprised the sole ration during the early pregnancy stage. Thereafter, and up to weaning of offspring they were offered free choice in separate feeders ground corn grains and cottonseed meal. After weaning and at the age of about six months ewe-lambs were offered growing diets according to NRC standards to evaluate their gain potential as well as the carry over effect of the dam treatment.

The hay-fed ewes appeared to select diets that satisfied their energy and protein requirements during the different stages of the production cycle. The physical characteristics of selected diets in terms of roughage and crude fibres percentages in the total dry matter intake and the proportion of rumen degradable protein in total protein intake were practically the optimum. It appears that in those ewes voluntary food intake regulation was predominantly under the control of physiological mechanisms geared to satisfy energy requirements.

The straw-fed ewes, on the other hand, failed to control their intake as per physiological needs especially during early pregnancy and lactation. Only roughages were fed during the former and intake was regulated strictly by physical means, i.e. the fill capacity and rates of degradation and passage of digesta. During the latter, in an attempt to satisfy their energy needs they consumed large quantities of corn grains and the selected diets were un-physiologically low in roughages and crude fibres.

At the start of the experiment the ewes were not in their optimum condition, weighing only about 75% of adult weight. After lambing, control and hay-fed ewes attained optimum weights whereas straw-fed ewes nearly maintained their weights before breeding irrespective of receiving free choice concentrates during the late pregnancy stage onward.

Hay-fed ewes performed similar or better than the controls, as well as their offspring pre- and post-weaning. Straw-fed ewes, even with free choice concentrates, had low fertility (lambing rates), high lamb and ewe mortality, low milk production, smaller birth and weaning weights of offspring and slower gains of replacement ewe-lambs raised up to the age of ten months.

However, these may not be the consequence of feeding straw per se. The control diets contained straw in addition to the hay, corn grains and cottonseed meal and the ewes performed well. Rather, it is the art of balancing the rations that makes the difference in the light of recent advances in nutrition and the allied sciences.

Keywords: *Feeding management, Diet selection, Production, Reproduction, Sheep.*