Comparative Effect of Feeding Quality Hay and Pasture Grazing to Lohi Ewes on the Weight of Lambs During Last Six Weeks of their Pregnancy

IMTIAZ HUSSAIN KHAN AND MOHAMMAD JAMIL QURESHI*

Twenty pregnant ewes of *Lohi* breed were taken during last 6 weeks of their pregnancy for experiment from the flock kept at West Pakistan Agricultural University, Lyallpur. These were randomly divided into two groups of 10 sheep each. One group was kept as control and the other was used for experiment. The experimental sheep were fed good quality berseem hay during last 6 weeks of pregnancy and the control group was only grazed on pasture. The available pasture consisted of grasses like *dhub* grass (*Cynodon dactylon*) and stubbles of wheat, sorghum, *guara* (*Cyamopsis psoralioides*), etc. The mean gains in the body weight of ewes was 7.95 and 11.05 for control and experimental groups respectively. The body weight of lambs for first 6 weeks was non-significant for both the groups. However, the average birth weight of lambs of experimental group was higher (significant at 0.05 level of significance) as compared to that of control group. The mean birth weight of lambs was 8.55 and 10.20 for control and experimental group respectively.

INTRODUCTION

Sheep raising is one of the most profitable enterprises in West Pakistan. *Lohi* sheep have been raised on varied types of soils in this province; as this breed of sheep is found throughout the irrigated tract of the Central Zone of West Pakistan (including Lyallpur District) and is the largest single breed of the country. The pastures are quite different in respect of quality of grass, hay, etc. Consequently, the lambing percentage and weight of lambs at birth have been affected. This leads to the differences in rate of growth of lambs and also the maturity in females. Nutritional and managerial conditions in sheep husbandry being generally poor in this country, shepherds sustain heavy losses as a result of low lambing percentage and weak lamb crops. In order to establish different pattern of pasture feeding in different areas the experiment reported in this paper was carried out at West Pakistan Agricultural University, Lyallpur.

*Department of Livestock Management, Faculty of Animal Husbandry, West Paksitan Agricultural University, Lyallpur.

The writers are grateful to Dr. M. B. Sial, Head, Department of Nutrition for his guidance during the course of this study. They are also thankful to Dr. Manzur-ud-Din Ahmad for his help in statistical analysis and in writing up this paper.

REVIEW OF LITERATURE

Although sheep should be preferably kept on pasture to make the enterprise more profitable by way of reducing the cost of input, it is generally agreed that good quality sun cured hay when provided would give additional benefit through supplying not only more proteins but also minerals like calcium and vitamin A and D (Ensminger, 1962).

Qureshi *et al.* (1965) reported that the farmers in Pakistan sustain heavy losses every year due to low lambing percentage and weak lamb crops which is a result of poor nutritional and managerial conditions prevalent in Pakistan. Coop (1964) observed in *Corridale* and *Romney* breeds of sheep that the body weight had beneficial effect on the lamb crop. For a period of 15 years he observed that twinning, survival and growth rate were higher in larger ewes. He further noticed that the twinning rate increased almost at a consistent rate of 6 per cent per 10 lb. body weight in larger ewes. Dinusson *et al.* (1956) while studying the winter rations for pregnant ewes observed in 3 trials with 308 pregnant ewes in all, that those fed on good quality alfalfa hay produced more live lambs and heavier lambs than did those fed on wild native hay and maize during the last 6 weeks of pregnancy. He also observed that supplementation of native hay with 0.1 lb. soybean meal or 0.3 lb. alfalfa considerably improved the performance, but not to the level of those fed on good quality alfalfa hay alone. He further observed and suggested that wild hay should be supplemented with salt and minerals throughout, and during the last 6 weeks of pregnancy should be given with good quality alfalfa hay in equal amounts. Wild hay may be fed during early pregnancy and good quality alfalfa hay in later pregnancy or the wild hay may be given with a protein supplement. Grahm (1964) stated that one group of *Merino* sheep was fed on a mixture of equal parts of lucern and wheat hays and other group was fed on a pelleted diet of hay and meals. Of all intakes of metabolisable energy in sheep given hay had higher heat production than those given pellets. In a trial lasting 12 weeks of ewe lambs, Merwe *et al.* (1962) observed that the individual feeding of better quality lucern hay resulted in more gain in weight and more efficiency of the lambs.

MATERIALS AND METHODS

Twenty pregnant *Lohi* sheep were selected and randomly divided into two groups of 10 sheep each. All the sheep were drenched with 1 dramme Phenothiazine per head as a prophylactic measure against the possible infestation of internal worms. One of the groups which served as control was let out for grazing early in the morning and brought back to the farm in the evening. The

grazing consisted of grasses like *dhub* grass (*Cynodon dactylon*) and stubbles of wheat, maize, sorghum and *guara* (*Cyamopsis psoralioides*). The other group (experimental group) was kept in the sheep barn and was not allowed to go out for grazing. This experimental group was fed good quality berseem hay *ad libitum*. The animals were fed as a lot. The animals of control as well as experimental group were weighed at the start of experiment and then each week thereafter on the same day and same time. The animals were offered fresh water twice daily. Berseem hay was offered twice daily morning and evening at 7 A.M. and 4. P.M. The assumed chemical composition of berseem hay is shown in Table 1.

TABLE 1. *Chemical composition of Berseem Hay.*

	Dry Matter	Digestible protein	Total Digest. Nutrient	Calcium	Phosphorus
Berseem Hay ..	87.3	9.0	50.0	1.81	0.57

The following records were maintained: 1. Change in body weight of ewes during last 6 weeks of pregnancy, 2. Body weight of lambs at birth, 3. Weight gain of lambs for first 6 weeks, and 4. Lambing percentage.

RESULTS AND DISCUSSIONS

Means, standard deviation and "*t*" values of changes in body weights of ewes, body weight of lambs at birth, weight gain of lambs for first six weeks are listed in Table 2.

TABLE 2. *Means, Standard Deviation and "t" value of Lohi ewes and their lambs.*

	Degree of Freedom	Means		Standard Deviation	"t" value
		Control	Experimental		
Changes in body weight of ewes (lbs.) ..	18	7.95	11.05	2.17	4.69**
Birth weight of lambs (lbs.) ..	18	8.55	10.20	1.33	2.78*
Weight gain of lambs for first 6 weeks (lbs.) ..	17	11.28	12.70	1.94	1.59

*Significant at 5 per cent level. **Significant at 1 per cent level.

Change in body weight of ewes. The study showed that change in the body weight of ewes in the experimental group (fed good quality berseem hay)

was significantly different from the control group. As is evident from Table 2, it was observed that the mean gain in the body weight of ewes were 7.95 and 11.05 for control and experimental group respectively. This indicated positive effect of feeding good quality hay to ewes during last 6 weeks of pregnancy. The advantages of feeding good quality hay is also indicated in similar studies made by Dinusson *et al.* (1956), who observed in 3 trials with 308 pregnant ewes that those fed on good quality alfalfa hay produced more live lambs and heavier lambs than did those fed on wild native hay during the last 6 weeks of pregnancy.

Lambing percentage in ewes and birth weights of their lambs. All the ewes from both groups were lambed during the period under study. All were single births. The birth weight of lambs from control group ranged from 6.0 lbs. to 10.5 lbs., whereas in experimental group it ranged from 7.5 lbs. to 12.0 lbs. The lamb weighing 6.0 lbs. initially of the control group could not survive within first week. The average birth weight of lambs of experimental group was significantly higher (significant at 0.05 level of significance) than that of control group. The means of the body weight of lambs at birth were 8.55 and 10.20 for control and experimental group respectively. These observations agree with Coop (1964) who observed in *Corridale* and *Romney* breed of sheep that there was beneficial effect on lamb crop in the larger and better fed ewes. He concluded that the twinning rate, birth weight and growth rate were higher in larger ewes.

Weight gain of lamb for first 6 weeks. The experimental ewes with higher body weights gave birth to lambs with higher birth weights as compared to the ewes from the control group. The gain in weight of lambs from both the groups was proportionate. However, the gain in weight was non-significant statistically.

LITERATURE CITED

Coop, I. E. 1964. Live weight, Flushing and Fertility. *Reprint* 10, *Sheep Farming, Lincoln College, Cant, Newzealand.*

Dinusson, W. E., M. R. Light, R. M. Richard, and D. W. Bolin. 1956. Winter rations for pregnant ewes. *Bull. N. Dakota Agri. Exp. Sta.* **18**: 214-219.

Ensminger, M. E. 1962. *Animal Science.* 5th Ed. Interstate Printers and Publishers Inc., Danville, Illinois.

Grahm N., M. 1964. Utilization of low-fibre and high-fibre food mixture. *Austral. Jour. Agri. Res.* **15**: 100-112.

Merwe, F. J., I. L. Ferriera, L. P. Vosloo, and D. G. F. Labuschagne. 1962. A comparison between pelleted and chopped lucerne hay in the feeding of lambs. *S. African Jour. Agri. Sci.* **5**: 109-121.

Qureshi, M. J., and I. Haq. 1965. Studies on the effect of flushing on lamb production in Lohi sheep. *Pak. Jour. Agri. Sci.* **2**: 196-200.