

## CHARACTERISTICS OF EWES SELECTED FOR LIFETIME PRODUCTION OF POUNDS OF LAMB WEANED AND THEIR STATIC CONTROL

W. A. Head, Jr., P. G. Hatfield, J. A. Fitzgerald,  
M. K. Petersen, D. M. Hallford, and J. N. Stellflug

(Key Words: Sheep, Weaning Weight, Milk)

Forty-four Targhee ewes rearing twin lambs were used to investigate the effects of selection for pounds of lamb weaned on milk production, milk constituents, ewe body weight, lamb body weight, ewe fecal output, and lamb fecal output. Line 41 ewes are selected on the basis of pounds of lamb weaned per ewe, and Line 42 ewes received no selection pressure. Ewe and twin lambs were confined in Period 1 (P1; 4 through 25 days postpartum) and allowed ad libitum access to chopped alfalfa hay. Periods 2, 3, and 4 (P2, P3, P4) were conducted on native inter-mountain sagebrush range at an average of 49, 84, and 112 days postpartum, respectively. On days 4, 11, 18, 25, 49, 84, and 112 postpartum, milk production was estimated by hand milking. In P1 (ewe only), P2, P3, and P4, ewe and lamb fecal output were estimated using an indigestible marker to estimate feed intake. The statistical model included effects for line, period, lamb sex, and lamb and ewe age. Line 41 ewes produced more milk, lactose, and protein than did Line 42 ewes. Line 41 lambs were heavier (11 vs 9 lbs) from birth until weaning (64 vs 59 lbs) than Line 42 lambs. In P3, ewe fecal output was greater for Line 41 ewes than Line 42, but did not differ in P1, P2, and P4. In P3 and P4, lamb fecal output was greater for Line 41 lambs than Line 42 lambs, but did not differ in P2. Line 41 ewes were heavier 4 d postpartum (179 lbs), produced more milk, and lost more body weight (-23 lbs) than Line 42 ewes. Line 41 lambs were heavier at birth and consumed more forage later in the summer than Line 42 lambs. The study showed that increases in weaning weight do not occur solely by improvement of genetic efficiency, but that lambs from ewes selected for pounds of lamb weaned eat more and therefore, weigh more at weaning because of that.

## BOVETEC® AS A SELF-FED SUPPLEMENT TO RANGE CATTLE

L. B. Rogers, M. K. Petersen, G. B. Donart, and E. E. Parker

(Key Words: Supplementation, Ionophore, Beef Heifers, Range)

An ionophore, common name Bovatec® has been evaluated to determine its effectiveness as a self-fed supplement on range conditions from June to November. The study was conducted at the Corona Range and Livestock Research Center, which is located at an elevation of 7000 ft., and received an average annual rainfall of 12 inches. Primary grasses are blue grama, wolftail, and dropseeds. The primary objective of this study was to determine average daily intake of cooked molasses block with ionophore. A secondary objective was to determine

average daily gain. Sixty heifers were weighed and allocated to one of five paddocks. Heifers in all paddocks had unlimited access to salt, mineral, and water. Heifers in three paddocks were given access to tubs containing cooked molasses and Bovatec®. Supplement consumption was measured weekly, by determining supplement disappearance and dividing that number by the number of heifers per pasture and the number of days since the last weight was recorded. Mean consumption of the block was by paddock .80, .80, and  $.85 \pm .06$  pounds per head per day. Heifer average daily gain was the same at  $1.7 \pm .06$  and  $1.6 \pm .08$  pounds for block and control treated heifers, respectively. Since all pastures were in fair to good condition and lightly stocked it is not surprising that the supplement had little effect on average daily gain. The use of self fed blocks containing ionophore would be a useful tool to spare forage during drought or when forage is short. This ionophore is not available for self fed range conditions, but hopefully it will be on the market in the future.

### EFFECT OF RUMINAL ESCAPE PROTEIN ON BODY WEIGHT CHANGE, MILK YIELD, AND BLOOD METABOLITES IN LACTATING EWES

I. Tovar-Luna, W. S. Ramsey, W. A. Head, Jr., M. Levario,  
D. M. Gambill, T. T. Ross, and M. K. Petersen

(Key Words: Protein Supplementation, Lactation, Ewes, Roughages)

Protein supplements formulated with ruminally undegradable protein sources fed to lactating animals have shown a positive effect on body weight change. This has been attributed due to changes in metabolic hormones turning the nutrients from milk synthesis toward tissue growth and reducing mobilization of fat tissue stores. Therefore an experiment was conducted with the objective of studying the effect of ruminally undegradable protein on body weight change, milk yield, and blood metabolites in lactating ewes fed a roughage diet. Twenty-six Suffolk lactating ewes ( $BW = 183 \pm 20$  lbs) approximately  $24 \pm 5$  days after lambing were stratified by weight, age, and lambing date and assigned to two treatments. Thirteen ewes were fed 90% buffalo grass (6% CP) straw and 10% alfalfa hay (20% CP) plus .55 lb/head/ of a protein supplement [57% CP, .21 lb undegradable intake protein (SUP)]. Another thirteen ewes were fed 50:50 buffalo grass straw and alfalfa hay plus .48 lb/head/d of wheat bran (NSUPP). All ewes were fed at 2.5% of its BW of forage and had access to clean water for 50 days. Calculated metabolizable energy and crude protein intake were similar for both diets. On day 30 and 37 of supplementation ewes were hand milked and blood samples were collected. Body weight change was similar between both group of ewes ( $-28$  vs  $-30 \pm 2.5$  lbs for NSUPP and SUPP, respectively). Milk yield was not affected by treatments ( $3.1$  vs  $3.4 \pm .26$  lb/d for NSUPP and SUPP, respectively). Growth hormone, insulin, and serum glucose were similar for ewes fed SUPP and NSUPP in a 8 h sampling period while blood urea nitrogen was higher in ewes fed the 50% alfalfa diet. Protein supplementation formulated with undegradable protein sources fed with buffalo grass straw showed a similar effect on body weight change and blood metabolites as ewes fed a diet with 50% alfalfa hay 50% buffalo grass straw.