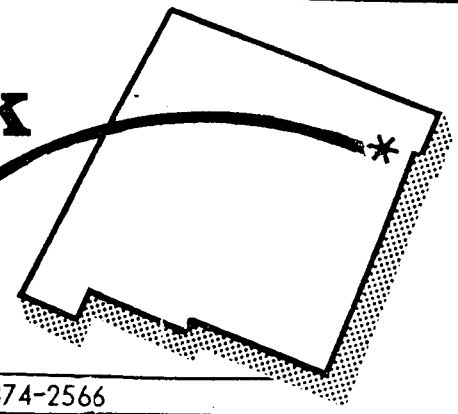




Clayton Livestock Research Center

PROGRESS REPORT



Route 1 Box 109

Clayton, New Mexico 88415

Tel. (505) 374-2566

Progress Report No. 39 (January 1985)

PROTEIN SUPPLEMENTATION ON LATE SUMMER GRASS¹

Michael G. Shafer, Mark Grigsby² and Glen P. Lofgreen

Analyses of range grasses in New Mexico and neighboring grazing areas over many years clearly show that the two most common deficiencies are protein and phosphorus. It is also well known that range grasses decline in protein and phosphorus content with maturity. Thus cattle grazing native grass may consume inadequate amounts of these two nutrients especially late in the grazing season. Such deficiencies can be

prevented by proper supplementation. The two major purposes for range supplementation are to correct nutrient deficiencies of the forage and to support adequate condition and production levels in cattle when forage is inadequate in quantity. Extensive supplemental feeding should be avoided in order to get optimum utilization of the forage. However, under certain conditions supplementation may be profitable.

Steer Performance on Native Grass

| | Group | |
|--|-------|-------|
| | 1 | 2 |
| <u>April 5 - July 6. All cattle unsupplemented</u> | | |
| No. of steers | 15 | 15 |
| Initial weight, lb | 338 | 336 |
| 91-day weight, lb | 522 | 517 |
| Total gain, lb | 184 | 181 |
| Daily gain, lb | 2.02 | 1.99 |
| <u>July 6 - Oct. 2. Group 2 supplemented</u> | | |
| 88-day weight, lb | 649 | 685 |
| 88-day gain, lb | 127 | 168 |
| Daily gain, lb | 1.44 | 1.91 |
| Daily gain due to supplement, lb | - | .47 |
| <u>April 5 - Oct. 2. Total of 179 days</u> | | |
| Total gain, lb | 311 | 349 |
| Increase due to supplement, lb | - | 38 |
| Supplement fed, lb | - | 66 |
| Cost of supplement @ 12.17¢/lb, \$ ^a | | 8.03 |
| Value of increased gain @ 65¢/lb, \$ | | 24.70 |
| Net value of gain, \$ | | 16.67 |

^aDoes not include interest or labor to feed supplement

¹Appreciation is expressed to Gene Reynolds, Felt, OK; Bob Childress and Glen Reagan, Rita Blanca National Grasslands, Texline, TX for their Cooperation.

²Present address of Dr. Grigsby is Rt. 1, Box 205-1, Welch, OK 74369.

Beginning on April 5, 1984 thirty steers with an initial weight of 337 lb were grazed as one group on native grass pasture (Rita Blanca National Grasslands) for 91 days. On July 6 they were weighed, divided into two groups and moved to a new pasture divided by an electric fence. One group of steers remained unsupplemented while the other was fed a supplement consisting of 88% soybean meal and 12% yellow hominy feed supplied three times weekly to provide an average of .75 lb per head daily. All cattle were weighed on October 2 (88 days) and the trial was terminated.

The results are summarized in the accompanying table.

During the first 91 days both groups gained approximately 2 lb daily indicating adequate nutritive value of the forage. However, during the last half of the grazing

period the gains of the unsupplemented group dropped from 2.02 to 1.44 lb/day, a drop of approximately 28%. The gains of the supplemented group dropped only .08 lb/day or 4%.

Under the grazing conditions of this trial providing a protein supplement during the last half of the summer was cost effective. It should be remembered that such a supplement also increases phosphorus intake. At the level fed this supplement provided over 2 grams of phosphorus or about 13% of the requirement for a 450 lb calf to gain 2 lb/day. Additional phosphorus in the supplement may be beneficial at certain times.

This report is not intended to imply that supplementation will always pay. Rather it is intended to show an example of when supplementation might pay. The goal is wise use of supplementation to allow optimum utilization of of native range forage.



A. B. Nelson, Head, Department of Animal and Range Sciences

AGRICULTURAL EXPERIMENT STATION
NEW MEXICO STATE UNIVERSITY
LAS CRUCES, NEW MEXICO 88003-0058
Dinus M. Briggs, Acting Director
Publication

PENALTY FOR PRIVATE USE, \$300

| |
|---|
| BULK RATE POSTAGE & FEES PAID USDA PERMIT No. G269 |
|---|