# THE VALUE OF HIGH PROTEIN VS HIGH ENERGY RANGE CUBES FOR WINTERING STEERS ON NATIVE BLUESTEM RANGE

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## Story in Brief

One-hundred weaned calves and short yearlings were wintered on dry native bluestem range and were fed either 1.25 lb per day of a 38 percent protein range cube (2.92 lb Monday, Wednesday and Friday), or 1.90 lb per day of a 25 percent protein, high energy range cube (4.43 lb Monday, Wednesday and Friday). Both groups thus received an equal amount of total supplemental protein. The lower protein group received 4.45 lb more feed per week. The additional feed was corn. During the winter feeding phase January 4th through April 13th steers receiving the 25 percent protein cubes gained 58 lb vs 54 lb for the steers receiving the smaller amount of the 38 percent protein feed. These differences were not significant.

Both groups of steers were re-weighed on July 15th. At this time the steers that received the 25 percent protein feed had gained 197 lb since the start of the test and those that received the 38 percent protein feed had gained 201 lb, again these differences were not significant. Both groups possibly would have benefited from a greater amount of total supplemental feed. The results of this test would suggest that the amount of supplemental protein, not the total amount of feed, determines gain.

The steers receiving the greater amount of energy did not benefit by the end of the grazing season. This test would suggest that winter protein supplement for steers on adequate quantity of native range should be bought on the basis of cost per unit of useable protein.

## Introduction

Many cattle in Oklahoma are wintered on dry native ranges on minimal amounts of supplement. Anything which will increase total season gains may help reduce the rancher's costs. Previous research has shown the merits of high protein concentrates compared to low protein high energy feeds. Lofgreen (1983) has suggested that cattle received on higher energy feeds will maintain the advantage of the extra energy through the grazing season. This test afforded the opportunity to test two commercial supplements, the 25 percent protein cube was formulated with corn and soybean meal in an attempt to achieve as high on TDN as possible with these feeds. The 38 percent protein cube was formulated using about equal parts of soybean and cottonseed meal.

## Experimental Procedure

One-hundred steers, mostly recently weaned calves with a few short yearlings, were received at the Pawhuska research station on January 3, 1983. The cattle were randomly allocated to four groups, two

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treatments, with two pasture replications. All weights were taken after holding the cattle overnight in a drylot pen without feed or water. The cattle were weighed in the first two hours of daylight the following morning. The four pasture replications were rotated at two-week intervals to help reduce pasture effects. The cattle were wormed with Tramisol™, and implanted with Ralgro™ at processing. Supplements were fed on Mondays, Wednesdays, and Fridays. The two supplements were purchased by the cattle owner from Stillwater Milling Company and were identified as A&M 25 percent KORNCAKE CUBE™ and as A&M 38 percent HI PROTEIN CUBES™ respectively for the 25 and 38 percent supplements evaluated. Both supplements were in the form of 3/4 inch cubes and were fed on the ground.

## Results and Discussion

There were no differences in weight gain when either supplement was fed (Table 1). With the high protein cube there was a feed savings of 35 percent (124 lb vs 188 lb) for the grazing season.

**Table 1. Performance of Steers Receiving Equal amounts of Protein from Either a High Protein Cube or a Medium Protein High Energy Cube.**

| | 25% Protein Cubes | 38% Protein Cubes |
|---|---|---|
| Number of Steers per Treatment | 50 | 50 |
| Initial Weight (January 4, 1983) | 454 | 464 |
| Weight at end of Feeding | 512 | 518 |
| Wintering Gain (01/04-04/13) | 58 | 54 |
| Weight (07/15) | 651 | 665 |
| Season weight gain | 197 | 201 |
| Feed used (lb) | 188 | 124 |

The results of this test are in agreement with the results of previous trials (Lusby, 1983). There was a noticeable difference in the winter gain of individual animals in this test. While the mean winter gain was about 56 lb, many of the older cattle in the group gained in excess of 100 lb and some of the youngest calves actually lost weight between January 4 and April 15. The basal level of 1.25 lb per day of the 38 percent cube would have to be considered the minimum amount of feed for wintering this age and weight of steer in a mild winter.

## Literature Cited

Lofgreen, G.P, et. al. 1983. Compensatory gains of Native calves received on hay alone for four weeks. Progress Report 33, Clayton Livestock Research Center, New Mexico.

Lusby, K. L. 1983. Oklahoma Beef Cattle Manual, p. 50-54, Oklahoma State University.