

Level of Protein for Heifers Wintered on Bluestem Pasture,
1963-1965 (Project 253)

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The 66 heifers used were good to choice grade Herefords purchased near Fort Davis, Texas, and assigned to treatments on a random weight basis.

They were rotated among pastures to minimize pasture differences during the first winter and summer. Di-calcium phosphate was fed to standardize phosphorus intake among groups during the first winter and each was fed 15,000 I.U. of vitamin A daily. Salt was available to all lots throughout the test. They were fed three times weekly during the winter.

The heifers were bred between July 1 and October 1, 1964; from July 1 to August 15, they were artificially bred; from August 15 to October 1 two Hereford bulls were with the heifers.

All heifers were examined for pregnancy November 20, 1964. All open heifers were culled; the 58 remaining continued on experimental winter rations as outlined in table 7.

The first calf was born April 9, 1965. Calves were weighed at birth; calving difficulty was scored from 1 to 10, with 1 indicating no assistance; 5, some assistance; 10, a caesarean section. Calves were tattooed at birth and sex of calf was recorded. The last calf was born July 4, 1965.

June 18, 1965, two Hereford bulls were turned in with the heifers and remained until September 2, 1965.

Results and Discussion

The weight gain of the heifers fed the combination of soybean oil meal and sorghum grain were equal to those fed only soybean oil meal; both rates were superior to those fed only sorghum grain.

The conception rate for the first breeding season was highest for those receiving the combination of grain and soybean meal while those receiving only sorghum grain ranked second and those receiving soybean meal ranked lowest.

For the second breeding season the heifers fed soybean meal ranked first in numbers bred followed closely by those receiving the combination of grain and soybean meal. Those receiving sorghum grain only ranked lowest with an average pregnancy rate of 69% compared with 95% for those receiving soybean oil meal only.

The soybean oil meal groups produced the most calves. The few calves weaned by lot 5, fed a combination of grain and soybean meal, may have resulted from other management factors.

Weaning weight was lowest for calves produced by heifers on sorghum grain. Calves produced by heifers fed the grain and soybean meal combination were heaviest, followed closely by those receiving only soybean oil meal.

In pounds of calf weaned per heifer bred, soybean oil meal groups were outstanding followed by grain and soybean meal combination groups, while sorghum grain groups only ranked lowest.

The results indicate that the protein received by heifers on bluestem pasture fed 2 pounds of sorghum grain (10% protein) per head daily during the winter was too low for satisfactory performance. Weight gains of heifers and their calves was satisfactory when a combination of grain (10% protein) and soybean oil meal (45% protein) was fed; however calf weight weaned per heifer bred indicates that a higher level of protein (2 pounds of soybean oil meal) may be superior. Too few animals were involved for definite decisions this early.

Table 7
Level of Protein for Heifers Wintered on Bluestem Pasture, December 6, 1963, to November 2, 1965 - 696 days

Treatment	Sorghum grain		Sorghum grain & soybean meal		Soybean meal	
Lot no.	1	3	2	4	5	6
No. of heifers	11	11	11	11	11	11
Av. wt. of heifers that weaned calves:						
December 6, 1963	439	433	441	436	420	443
March 30, 1964	389	399	469	457	472	466
September 26, 1964	645	675	708	722	694	691
April 5, 1965	555	611	717	718	754	740
November 2, 1965	688	704	761	766	781	735
Gain per heifer from December 6, 1963, to November 2, 1965	249	271	320	330	361	292
Supplemental winter feed in lb. per heifer daily:						
Ground sorghum grain	2	2	1	1	2	2
Soybean meal	---	---	1	1	---	---
No. of cows pregnant						
November 20, 1964	8	10	11	11	8	10
Percent	80.0	90.9	100	100	72.7	90.9
October 30, 1965 ¹	7	6	9	11	8	9
Percent ¹	87.5	60	82	100	100	90
Calving data 1965:						
Av. calving date	5/5	5/20	5/6	4/30	5/17	4/28
No. of calves born	8	9	11	11	8	10
No. of live births	5	8	9	5	8	9
% of live births	63	89	82	46	100	90
Av. live birth wt., lb.	58	67	63	69	65	65
Av. calving difficulty score ²	3.1	5.2	3.4	4.2	3.9	2.6
No. of calves weaned	5	7	8	5	8	9
% calf crop weaned	63	78	73	46	100	90
Av. adjusted weaning wt. ³	232.0	260.0	289.0	331.0	282.0	294.0
Lb. calf weaned per heifer bred	145.0	182.0	210.0	150.0	282.0	265.0

1. For the October 30, 1965, pregnancy examination only the heifers found bred on Nov. 20, 1964, were available to be checked since those not bred Nov. 20 were sold.

2. Calving difficulty was scored on a scale from 1 to 10; 1 indicated no assistance; 5, some assistance; 10, a caesarean section.

3. Weaning weights were adjusted to 180 days and on steer equivalent.