

## **SUPPLEMENTING BEEF COWS TO IMPROVE REPRODUCTIVE PERFORMANCE**

Past research and general observation indicate that the level of energy a beef cow receives while suckling a calf has a marked influence on her reproductive performance. Insufficient energy may even cause a complete cessation of the reproductive cycle.

It is also well known that for heavy calf weights at weaning, calves should be as old as possible at weaning. Therefore, under normal conditions, calves conceived during the first estrus cycle of the breeding season and born during the first three weeks of the calving season will have the heavy weaning weights.

A trial was started in the spring of 1967 to evaluate the practice of providing extra energy for the breeding cow herd by supplementing these cows grazing on pasture with extra grain. Of primary interest was whether or not the grain supplement would improve the number of cows settling during the first cycle of the breeding season. Secondly, would the difference in the reproductive performance be economically sound.

Hereford cows and first calf heifers making up the station breeding herd were divided each year of the trial into two nearly equal groups. After calving, all cows received a ration composed of hay, silage and approximately one pound of rolled barley until they were turned on grass about the tenth of May. Both herds grazed on crested wheatgrass pasture that was fertilized annually with 25 pounds of actual nitrogen in early spring.

Three weeks before the start of the breeding season (normally June 23) one herd was designated to receive supplemental grain. Cows and heifers in this herd were group fed pelleted barley averaging 15% protein at the rate of 3 pounds per head per day. The cost of the barley supplement has averaged \$3.10 per hundred weight or \$1.95 per cow per 21 day feeding period. This does not include any charge for labor. All cows in the trial had access to the same water tank and were allowed minerals and salt on a free choice basis.

The reproductive performance of the cows and first calf heifers was measured by when their calves were dropped the year following the supplemental feeding based on a 283 day gestation period. Individual weights were gathered on cows and calves to measure weight gains. (Because of the complexity of the trial over the five years, these are omitted in this report.)

Table 21 does show four year's data on calving performance as affected by supplemental feeding of the cows prior to breeding. The percentage figures are based on 307 cow-calf pairs.

**Table 21. Breeding Record of Cows and Heifers on Spring Pasture With and Without Supplemental Feeding**

	Cows						Heifers					
	1 <sup>st</sup> Cycle		2 <sup>nd</sup> Cycle		3 <sup>rd</sup> Cycle		1 <sup>st</sup> Cycle		2 <sup>nd</sup> Cycle		3 <sup>rd</sup> Cycle	
	No. Hd.	%	No. Hd.	%	No. Hd.	%	No. Hd.	%	No. Hd.	%	No. Hd.	%
<b>Cows and Heifers With Supplement</b>												
1967-68	24	77.4	4	12.9	3	9.7	6	100	---	---	---	---
1968-69	19	65.5	8	27.6	2	6.9	5	71	2	28.6	---	---
1969-70	23	76.7	6	20.0	1	3.3	7	100	---	---	---	---
1970-71	<u>25</u>	<u>75.8</u>	<u>5</u>	<u>15.2</u>	<u>3</u>	<u>9.0</u>	<u>6</u>	<u>75</u>	<u>2</u>	<u>25.0</u>	---	---
Total hd.	91		23		9		24		4		0	
% cycl- ing <sup>1/</sup>		73.98%		18.70%		7.32%		85.7%		14.3%		0
<b>Cow and Heifers Without Supplement</b>												
1967-68	15	57.7	7	26.9	4	15.4	5	71.4	1	14.3	1	14.3
1968-69	18	62.1	9	31.0	2	6.9	6	75.0	1	12.5	1	12.5
1969-70	25	69.4	7	19.4	4	11.2	7	87.5	1	12.5	---	---
1970-71	<u>22</u>	<u>64.7</u>	<u>9</u>	<u>26.5</u>	<u>3</u>	<u>8.8</u>	<u>4</u>	<u>50.0</u>	<u>3</u>	<u>37.5</u>	<u>1</u>	<u>12.5</u>
Total hd.	80		32		13		22		6		3	
% cycl- ing <sup>2/</sup>		64.0%		25.6%		10.4%		71.0%		19.3%		9.7%

<sup>1/</sup> Percentage figures calculated upon 123 cow numbers and 28 heifer numbers.

<sup>2/</sup> Percentage figures based upon 125 cow and 31 heifer numbers.

### **Summary**

Supplementing the breeding herd of cows and first calf heifers with 3 pounds per head per day of a 15% barley pellet for 3 weeks prior to the start of breeding has resulted in approximately 10% more calves born during the first 21 days of the calving season. This response to extra energy and possibly phosphorus, has occurred even though the cows were grazed on fertilized crested wheatgrass pastures in excellent condition.

Under conditions of this trial, the improvement in reproductive performance of the cows could at best only pay for the cost of the extra supplemental feed. However, where less than optimum spring grazing is available, the effects of supplemental feeding could only be expected to magnify the results shown here.