

## **GRAZING VALUE AND MANAGEMENT OF CRP LANDS**

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### **SUMMARY**

Grazing bred yearling heifers on CRP acreage in South West North Dakota for a period of 126 days from May to September has yielded gains of 1.55 lbs./day for seasonlong grazing compared to 1.53 on a Twice Over Rotation system. However, gain per acre favored the TOR system at 46.2 lbs. compared to 39.5 lbs. on the SL system.

Cow- calf data from 1993 show the same advantage for the TOR system of grazing with cow gain averaging 17.3 lbs. and calves averaging 52.4 lbs./ acre. This compares to SL gains with cows averaging 14.6 lbs. and calves gaining 41.9 lbs./acre.

Hay production has averaged 1.2 ton for the first cutting and 0.75 ton on the second cutting. A second cutting was not taken in 1994. Hay quality has improved after the first year's haying due to the removal of dead material found in the hay the first year.

This trial is due to continue for two more years and the results may change in the future.

### **OBJECTIVES**

The objectives of this study are to determine:

1. The floristic composition and structure of CRP lands and to note changes in floristic composition and structure due to grazing and haying over 5 years.
2. The production and utilization of CRP land vegetation under seasonlong and twice-over grazing.
3. The production and quality of hay from CRP lands.
4. The success of game and non-game wildlife species on CRP lands.
5. The erosion from CRP lands that have been variously grazed and hayed and to compare this with similar cropland.
6. The economic returns from grazing and haying CRP lands.

## **MATERIALS AND METHODS**

The third year of a proposed five year project to study the effects of haying and grazing on Conservation Reserve Program acres was conducted by the Dickinson Research Center in 1994.

Eighty six crossbred yearling heifers were allotted to either a 131 acre pasture grazed for the entire season (SL) or to a set of three 75 acre rotation pastures (TOR). There were 30 heifers on the seasonlong pasture and 56 heifers on the rotation pastures. The heifers grazed from May 25, 1994 to September 29, 1994, a period of 127 days.

The stocking rate was 1.3 acres/AUM on seasonlong and 1.2 acres/AUM on rotation pasture.

All heifers had been synchronized for estrus using a combination of MGA and Lutalyze. Artificial insemination followed synchronization using sires with known EPD's for birth weight and gain. Angus, Red Angus and Hereford clean up bulls, were turned with the heifers on June 10, 1994 and remained until July 14, 1994, a period of 34 days.

All heifers were individually weighed and body condition scored at the start, finish, and at intermediate dates based on rotation times. Heifers started grazing in pasture #3, rotated to #1 and then to pasture #2, back to 3, 1, and

finished in pasture #2. (see diagram). Animal performance and body condition score (BCS) are shown in [Table 1](#). Bull weights are not included in this report.

### Pasture arrangement on Sec. 26 and 35-130-102

Pasture arrangement on Sec. 26 and 35-130-102

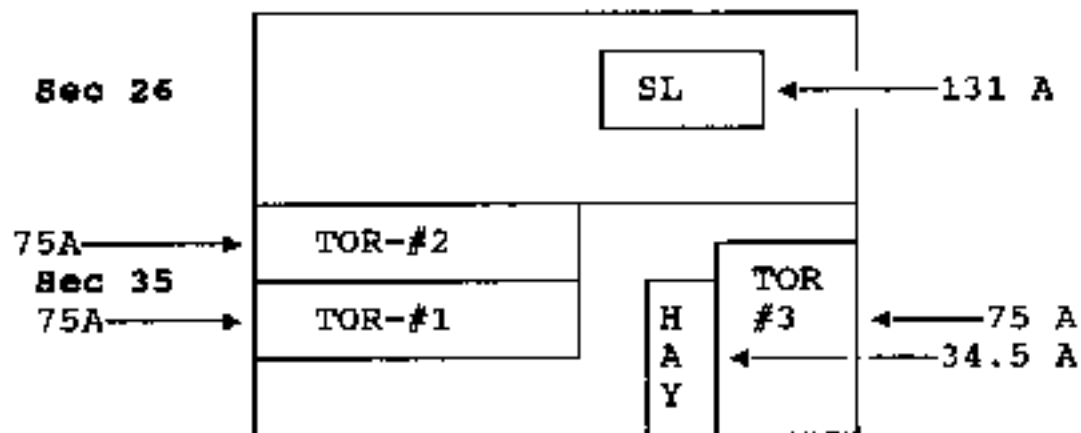


Table 1: Heifer Performance - 1994			Season Long				Twice over Rotation			
Pasture Size			131 Acres				3 X 75 Acres = 225 Acres Total			
No. of Head			30				56			
Days Grazed			127				133			
Stocking Rate			1.77 Acres/AUM				0.95 Acres/AUM			
	Weigh	No.	Per	Gain/Hd	ADG	BCS	Per	Gain/Hd	ADG	BCS

	Date	of Days	Head				Head			
	May 25	initial	874.53			7.15	862.53			7.06
	June 15	21	901.57	+27.04	1.29	7.02	887.23	+24.70	1.18	7.02
	July 7	22	951.63	+50.06	2.28	----	925.59	+38.36	1.74	----
	July 28	21	993.47	+41.84	1.99	7.17	978.61	+53.02	2.52	7.20
	Aug. 17	20	993.70	+0.23	0.01	7.07	978.16	-0.45	-0.02	7.27
	Sept. 9	23	1031.67	+37.97	1.65	7.10	1039.46	+61.30	2.66	7.13
	Sept. 29	20	1038.37	+6.70	0.34	7.21	1048.93	+9.47	0.47	7.21
	Change in BCS					+0.06				+0.15
	TOTAL GAIN		163.84	1.29			186.40	1.47		
	Gain/Acre		37.52#/A				46.39#/A			
	Gain/Acre/Day		0.295				0.37			
	Value of Gain/Acre*		\$22.51				\$27.84			

Table 2 shows two year average performance of yearling heifers grazing CRP acreage. Table 2a. summarizes cow-calf performance for 1993.

Table 2. Heifer Performance	1992	1994	Ave.
Season Long grazing			
Acres	131	131	131
Number of heifers	24	30	27
Days grazed	125	127	126
Gain per head	226	164	195
Average daily gain	1.81	1.29	1.55
Gain per acre	41.45	37.52	39.48
Twice Over Rotation			
Acres	225	225	225
Number of heifers	52	56	54
Days grazed	125	127	126
Gain per head	199	186	193
Average daily gain	1.59	1.47	1.53
Gain per acre	45.93	46.39	46.16
Table 2a. Cow-calf data -1993	Seasonlong	Twice over rotation	
Acres	131	225	

Number head		
Cows	17	35
Calves	17	35
Days Grazed	128	128
Gain per head		
Cows	112.6	111.4
Calves	322.6	336.6
Average daily gain		
Cows	0.88	0.87
Calves	2.52	2.63
Gain per Acre		
Cows	14.62	17.32
Calves	41.86	52.37

Table 3 shows the yield of hay harvested from the CRP in 1994.

Table 3. Hay production on CRP acres - 1994	
Total acres harvested	34.5
Harvest date	July 3
Number of large bales	62
Average weight per bale	890 lbs.

Total weight (Tons) harvested	27.6 T
Tons per acre	0.8 T
Gross return per Acre @ \$45.00 per ton	\$36.00
Hay quality	
Per cent Dry Matter	97.37
Per cent Ash	8.29
Per cent Crude Protein	11.66
Per cent Acid Detergent fiber	39.39
Per cent Neutral Detergent fiber	42.96

Table 3a shows the combined yield of hay for the years 1992, 1993

Table 3a. Combined hay yields.	1992	1993	1994	Ave.
Acres harvested	34.5	34.5	34.5	34.5
Yield per acre				
1st. cutting	2.0	0.80	0.80	1.20
2nd. cutting	0.87	0.63	---	0.75*
Dry matter				
1st. cutting	96.40	96.70	97.4	96.80

2nd. cutting	95.96	92.50	----	94.23*
Ash				
1st. cutting	5.75	8.6	8.29	7.55
2nd. cutting	10.08	8.9	---	9.49*
Crude protein				
1st. cutting	8.40	12.13	11.66	10.73
2nd. cutting	18.70	18.55	----	18.62*
Acid detergent fiber				
1st. cutting	52.50	19.20	39.39	37.03
2nd. cutting	36.08	32.80	----	34.44*
Neutral detergent fiber				
1st. cutting	74.9	45.00	42.96	54.29
2nd. cutting	53.96	41.00	----	47.48*
* Two year average				

## DISCUSSION:

Results to date with both heifers and cow-calf pairs show satisfactory gains for both classes of cattle. The pastures grazed contain a significant amount of alfalfa in the grass mixture which has caused concern for the possibility of bloat. In all three years, proloxadene (Bloat-Guard) has been mixed with the mineral mixture in order to reduce or prevent bloat. However, in 1993, one cow died of suspected bloat, although too much time had elapsed after death for an autopsy to confirm cause of death.



Both grazing programs have provided more than adequate forage at the stocking rates used to date.

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