Rotational Grazing Demonstrations with Beef Cows on CRP Land in Adams County

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Introduction

Two grazing systems have been demonstrated on CRP land near Corning, Iowa annually from 1991 to 2002. This report summarizes the 2002 production data. A 13-paddock intensive-rotational grazing system and a 4-paddock rotational grazing system were established in 1991 to show economically feasible grass alternatives to row crops and CRP on steeply sloping (9-14% slope), highly-erodible land (HEL).

Results and Discussion

On a 13-paddock grazing system in 2002, 23 crossbred calves nursing crossbred dams gained 2.33 pounds per head per day for 153 days (Table 2). The stocking rate on this grazing system was 1.50 acres per cow-calf pair. Cow-calf numbers were greater than in the previous year by one cow-calf pair.

Grazing started on April 24 and ended on September 24 in 2002. To utilize excess early forage production, 6 large round bales of hay were made on the 13-paddock system (Table 4). Six bales were also fed in late summer. A balanced mineral was fed free choice throughout the summer. No creep feed was fed to calves. Cattle were rotated to a fresh paddock 80 times during the 153 days of grazing. Rainfall at the CRP Research Farm was below normal for Corning, Iowa each month during the 2002 grazing-season (Table 1). Total calf production per acre in 2002 was 236.65 pounds. This was above the 12-year average of 211.17 pounds. Cows on this system gained an average of 60.64 pounds.

Grazing also started on April 24 and ended on September 24 in the nearby 4-paddock system (Table 3). The stocking rate was 13 cow-calf pairs or 1.72 acres per pair. This system produced 215.45 pounds of calf gain per acre. Calves gained an average of 2.43 pounds per head per day. Cows gained an average of 48.84 pounds per head. No hay was harvested or fed from this system in 2002 (Table 4). Cattle in this system were rotated to a fresh paddock 9 times during the grazing season of 2002.

Table 1. Precipitation at Corning, Iowa, 2002 (inches of rainfall) - 2 locations.

Month	Normal 1961-1990	Corning Hospital 2002	Deviation from Normal 2002	CRP Farm (2 sites averaged) 2002	CRP Farm Deviation 2002
January	.88	0.33 (3 events)	-0.55	NA	NA
February	.84	0.90 (5 events)	+0.06	NA	NA
March	2.34	0.88 (5 events)	-1.46	NA	NA
April	3.33	3.07 (12 events)	-0.26	2.10	-1.23
May	4.41	4.53 (14 events)	+0.12	4.37	-0.04
June	4.54	2.58 (6 events)	-1.96	2.78	-1.76
July	4.45	2.21 (5 events)	-2.24	2.26	-2.19
August	4.68	5.07 (7 events)	+0.39	4.03	-0.65
September	4.69	1.77 (5 events)	-2.92	1.83	-2.86
October	2.70	4.58 (12 events)	+1.88	NA	NA
November	1.88	0.37 (4 events)	-1.51	NA	NA
December	1.21	0.00 (0 events)	-1.21	NA	NA
ANNUAL	35.95	26.29	-9.66	NA	NA

Table 2. Adams County CRP Project 13-paddock grazing system production data with cow-calf pairs. 1996-2002 yearly data plus a 12-year average for the system.

Year	1996	1997	1998	1999	2000	2001	2002	12 Year Avg. (1991-2002)
Acres in system	34.60	34.60	34.60	34.60	34.60	34.60	34.60	34.60
No. of pairs	21.00	21.00	21.00	22.00	25.00	22.00	23.00	21.92
Pairs / Acre	0.61	0.61	0.61	0.64	0.72	0.64	0.66	0.63
Acres / Pair	1.65	1.65	1.65	1.57	1.38	1.57	1.50	1.58
Days Grazed	160	141	145	156	140	119	153	146
Calf Beg. Wt. (lbs.)	157.62	131.67	126.14	126.00	134.00	171.45	132.09	139.83
Calf ADG	2.26	2.41	2.23	2.20	2.20	2.23	2.33	2.28
Avg. Calf Gain	360.86	336.71	322.71	343.60	310.30	265.09	356.00	334.06
Calf Gain / A	219.02	204.40	195.87	218.85	224.86	168.85	236.65	211.17
Cow Beg. Wt. (lbs.)	1150.48	1107.90	1086.38	1166.00	1184.00	1081.05	1103.91	1131.28
Cow Wt. Chg.	66.00	56.81	109.71	52.80	-10.70	51.40	91.22	62.24
Cow Cond. Chg.	0.57	0.39	0.45	0.70	-0.30	-0.46	+0.30	0.29
Cow Days / A	97.11	85.58	88.01	99.19	101.16	75.66	101.71	92.23

Table 3. Adams County CRP Project 4-paddock grazing system production data with cow-calf pairs. 1996-2002 yearly data plus a 12-year average for the system.

Year	1996	1997	1998	1999	2000	2001	2002	12 Year Avg. (1991-2002)
Acres in system	22.40	22.40	22.40	22.40	22.40	22.40	22.40	22.40
No. of pairs	13.00	13.00	13.00	13.00	14.00	13	13	13.25
Pairs / acre	0.58	0.58	0.58	0.58	0.63	0.58	0.58	0.59
Acres / pair	1.72	1.72	1.72	1.72	1.60	1.72	1.72	1.69
Days grazed	160	141	145	143	140	119	153	145
Calf beg. wt. (lbs.)	162.23	139.08	114.08	114.00	142.00	184.00	132.92	142.01
Calf ADG (lbs.)	2.28	2.29	2.18	2.33	2.30	2.27	2.43	2.33
Avg. calf gain	365.15	322.62	316.38	333.50	328.00	270.62	371.23	338.21
Calf gain / acre	211.92	187.23	183.62	193.90	205.00	157.34	215.45	199.78
Cow beg. wt. (lbs.)	1152.54	1118.31	1050.23	1196.00	1175.00	1047.85	1115.85	1128.44
Cow wt. chg.	97.00	76.77	111.00	13.70	15.00	113.38	84.15	73.56
Cow cond. chg.	0.46	0.46	0.54	0.50	-0.20	-0.23	0.31	0.26
Cow days / acre	92.86	81.83	84.15	82.99	87.50	69.06	88.79	85.71

Table 4. Hay Production & Use, Adams County CRP Farm. Large Round Bales.

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	12 Yr. Ave.
13-Paddock System													
Produced	9	9	0	0	11	26	6	10	0	0	15	6	7.7
Fed	8	16	9	0	4	10	6	4	4	0	4	6	5.9
Net Hay Production	+1	-7	-9	0	+7	+16	0	+6	-4	0	11	0	1.8
4-Paddock System													
Produced	11	3	0	0	0	0	0	12	18	0	13.5	0	4.8
Fed	0	14	7	1	4	7	0	1	4	0	8	0	3.9
Net Hay Production	11	-11	-7	-1	-4	-7	0	11	14	0	5.5	0	0.9