PERFORMANCE OF STOCKER CATTLE ON GRAZE-OUT WHEAT PASTURE AND ECONOMICS OF PARTICIPATION IN THE 1986 GOVERNMENT WHEAT PROGRAM

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Story in Brief

Daily gain and gain/acre of stocker cattle on graze-out wheat pasture were measured over 4 years, and economic comparisons were made using a microcomputer model of various levels of participation in the 1986 government wheat program. Cattle each year consisted of 94 to 96 fleshy yearling steers (mean initial weight 628 lb) that grazed wheat pasture for approximately 65 days each year (March 19 to May 23). Initial stocking densities were 1.75, 1.52, 1.33 and 1.67 steers/acre for years 1 to 4, respectively. Daily weight gain of stocker cattle on graze-out wheat pasture averaged 2.32 lb/head/day with total weight gain averaging 234 lb/acre. Expected net return ($/acre) for various levels of participation in the government program was: -11.40 (non-participation, i.e., grain harvest only), 62.51 (25% acreage reduction program), 71.02 (acreage reduction program + an additional 10% acreage diversion) and 128.22 (maximum diversion). Weight gains of cattle on graze-out wheat pasture are excellent, and net returns per acre were greatly increased by grazing of wheat within the various options of the 1986 government wheat program.

(Key Words: Wheat Pasture, Stocker Cattle, Graze-out)

Introduction

One of the very unique and economically challenging aspects of wheat pasture stocker enterprises relates to the decision to graze-out wheat pasture in the spring. The decision is based on the interplay of forecasted wheat prices, amount and value of weight gains of cattle, and government acreage reduction programs. Stocker cattle that have grazed wheat pasture during the fall and winter are usually healthy, adapted to wheat pasture and can make rapid gains during the graze-out period. In addition, temperatures are higher and forage growth will accumulate to the point that gains should not be limited by the amount of available forage. Rate of weight gain of cattle during graze-out of wheat pasture is usually excellent. Nevertheless, questions frequently arise as to what rate of gain can be expected for cattle during graze-out of wheat pasture. In association with other studies, we have had cattle on wheat pasture during graze-out for the past four years. Performance of the cattle is reported herein. Also, economic comparisons were made using a microcomputer model of various levels of participation in the 1986 government wheat program.

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Materials and Methods

Ninety-four to 96 steers 11 to 13 months of age were used each year. They had grazed wheat pasture during the fall and winter. Breeds were: (Year 1, 1981-1982) Hereford and Brahman crossbred steers with 1/4 Brahman; (Year 2, 1982-1983) Hereford, Angus, and Hereford X Angus; (Year 3, 1983-1984) Hereford, Hereford X Angus, and Limousin crossbred; and (Year 4, 1984-1985) Hereford and Limousin crossbred. Daily gains of the steers during the fall and winter grazing interval on wheat pasture averaged 1.85, 2.30, 2.33 and 1.60 lb/head/day for the four years, respectively. Initial stocking densities during the graze-out trials were 1.75 (1138), 1.52 (856), 1.33 (891) and 1.67 (1055) steers/acre (lb cattle/acre) for years 1 to 4, respectively. The dates during which the wheat pasture graze-out trial was conducted each year are presented in Table 1.

The 1986 Wheat Program alternatives considered were (1) non-participation, (2) 25% diversion (25% acreage reduction program (ARP), (3) ARP + 10% diversion and (4) 50% of the eligible acreage in (3) actually planted (Table 2). For a 100 acre base acreage, 0, 25, 35 and 67.5 acres, respectively, would be grazed and appropriate deficiency and diversion payments are made.

Optimistic, expected (average) and pessimistic returns per head were estimated for stockers using the cattle price and sale weight prospects in Table 2. The sale weight distribution reflects the variability in annual steer gains observed in the study. The chance of a gain or price between the optimistic and pessimistic price is four-in-six, the chance of a yield or price greater than the optimistic level is one-in-six and the chance of a yield or price less than the pessimistic level is one-in-six. Stocking density was assumed constant at 1.5 head/acre for the 60 day graze-out period.

The microcomputer model also considers optimistic, expected and pessimistic cash wheat prices and wheat yields on harvested acres (Table 2). No correlation was assumed among any variables. Inputs for the economic analysis were: purchase and sale price of cattle ($65/cwt + $15/head and $64/cwt); expected cash, loan and target prices ($/bu) of wheat of 2.30, 2.40 and 4.38; wheat yield of 32 (non-participation) or 33.6 bu/acre.

Results and Discussion

Mean initial and final weights and stocker weight gains and gain/acre are presented in Table 1. Daily gains during the wheat pasture graze-out period for years 1 to 4 were 2.05, 2.75, 2.35 and 2.12 lb/head/day, respectively. Gains were exceptionally good in year 2 possibly because of the large amounts of available forage present during graze-out in combination with the lighter initial stocking density (i.e., 856 lb cattle/acre). Weight gain of stocker cattle per acre varied considerable each year. Gain/acre ranged from 191 to 292 lb/acre, and the differences were due primarily to differences in daily gain, initial stocking densities, and amounts of available forage present during graze-out. As stocking density increased, daily gains tended to decrease but total gain/acre increased.

Returns per acre for the complete analysis including wheat and graze-out stockers of the four program alternatives are shown in Table 2. Expected net return ($/acre) for various levels of participation in

Table 1. Mean initial and final weights, daily gain, and gain/acre of steers on graze-out wheat pasture.

Item	Year				Four-year average
	1	2	3	4	
Grazing interval	Mar 26-May 21	Mar 17-May 26	Mar 21-May 23	Mar 7-May 16	
Days grazing	57	70	61	70	64
Stocking density,					
steers/acre	1.75	1.52	1.33	1.67	1.57
lb cattle/acre	1141	852	895	1053	985
Initial wt, lb	651	563	670	632	628
Final wt, lb	768	755	814	780	778
Daily gain, lb	2.05	2.75	2.35	2.12	2.32
Gain/acre, lb	205	292	191	247	234

Table 2. Inputs and Results: Net returns from grain and wheat pasture graze-out of various levels of participation in the 1986 Government Wheat Program.

Inputs:	Stocker Price/cwt $	Stocker selling weight cwt	Stocker Return/head[a] $	Wheat price/bu $	Wheat yield/acre bu
Optimistic	70	7.81	114	2.45	38
Expected	64	7.67	68	2.30	32
Pessimistic	60	7.53	37	2.05	28

Stocker variable costs per head: $423
Stocking density (steers/acre): 1.50

	Level of Participation[b]			
	1 Non-participation	2 25% ARP	3 25% ARP + 10% DIV	4 Plant 50% of option 3
	$ Returns per acre of wheat base			
Optimistic	3.21	81.43	89.94	147.14
Expected	-11.40	62.51	71.02	128.22
Pessimistic	-23.59	49.42	57.92	115.13

[a]Optimistic and pessimistic returns per head are plus and minus one standard deviation of the stocker returns calculated from the joint distribution of stocker weights and prices.
[b]ARP = Acreage Reduction Program; DIV = Diversion.

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Weight gains of cattle on graze-out wheat pasture were excellent, and net returns per acre were greatly increased by grazing of wheat within the various options of the 1986 government wheat program.