INTENSIVE-EARLY STOCKING ON CROSS TIMBERS RANGELAND, 1985

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Story in Brief

Intensive-early stocking and summer-long stocking programs were compared using data from 1984 and 1985 grazing trials. In 1985, crossbred steers (avg. initial wt. 547 lbs.) grazed at double the normal stocking density (steer/acre) for 79 days or at normal density for 156 days beginning April 24. Average 79 day gains were 122 lb/steer for the intensive stocking and 141 lb/steer for the normal stocking density. Total weight gain during the summer by steers on the normal stocking regimen was 208.5 lb/head. The combination of poor cattle performance and a weak feeder cattle market in 1985 resulted in estimated losses of $58.67/head and $80.61/head on the intensive and normal stocking programs, respectively. Since twice as many cattle were grazed per unit of land area with the intensive regimen, estimated losses were 46% greater than with normal stocking. Further comparisons of the two grazing programs were made by estimating breakeven gains (lb/steer) and breakeven market prices ($/cwt) for each program using weight gains and market structures for both 1984 and 1985.

(Key Words: Grazing, Feeder Cattle, Rangeland, Intensive Stocking, Performance)

Introduction

Intensive early stocking (IES) is an adaptation of seasonal suitability grazing and involves grazing range areas by growing animals during the period of high forage quality. The intent of an IES program is to maximize gain/acre without reducing individual animal performance; this is accomplished by stocking heavily during the period when forage quality is high (Smith and Owensby, 1978). "Heavy" stocking is implemented by increasing stock density (animal units/acre) rather than stocking rate (animal unit days/acre).

Kansas studies (Launchbaugh et al., 1983) demonstrated that IES can increase gain/acre, maintain or improve range condition and potentially increase profitability of a stocker operation. McCollum et al. (1985) reported an estimated 110% increase in returns for IES versus summer-long stocking of stocker cattle on Cross Timbers rangeland in the first year of a four year study. The following results are from the second year of this study.

Materials and Methods

Four pastures on the Pawhuska Research Station were assigned to either intensive-early stocking (IES) or summerlong stocking (SLS). In 1984, yearlong stocking rates (animal unit days/acre) were estimated for

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each pasture (McCollum et al., 1985). After stocking rates were established, stocking density (animal units/acre) was adjusted to achieve the proper stocking rate under IES and SLS.

On April 24, 1985, 175 head of crossbred steers averaging 548 lb/head were weighed and allocated to one of the four treatment pastures. However, due to problems unrelated to the treatments, one IES and one SLS pasture were removed from the trial. Hence, data from only one IES and one SLS pasture are reported. Steers had free access to mineral supplement and ponded water throughout the trial. In addition, SLS steers were fed 1 lb/hd/day of a 38% protein supplement (with Rumensin) during the last 77 days (7/13 to 9/27) of the summer. All cattle were weighed on the morning of July 12 and SLS cattle were weighed again on the morning of September 20. Weights were taken in the morning after cattle were held off feed and water 12 to 16 hours.

Cost-and-return analyses were based on steer gains, market information from the Oklahoma City National Stockyards and the following assumptions: cattle were purchased in March and placed in a 28-day receiving program (2% death loss, $14/head feed costs, $7/head medical costs), interest rates were 12%, pasture lease was $40/head for 150 days and protein supplement was $150/ton. In addition, costs for labor and implanting were included. Finally, data for both 1984 and 1985 were used to compare the effects of steer performance and market structure on breakeven weight gains and breakeven feeder cattle prices required for IES and SLS.

Results and Discussion

During the first 79 days of the summer, steers gained 122 and 141 lb/head on IES and SLS, respectively (Table 1; 1985). For every pound of gain produced on SLS, IES produced 1.73 lb of gain (122 x 2/141). In order to equalize total gain between treatments, SLS steers would have had to gain 103 lb/head during the final 77 days of summer. Instead, SLS steers gained 66.5 lbs yielding a total summer gain of 208 lb/head. In terms of total beef production, IES produced 17.6% more gain than SLS. These gains are much lower than observed in 1984. The difference between years is not easily explained. Cattle management was similar during both summers. In addition, the summer of 1985 was milder with a better distribution of rainfall than 1984. Pretrial history may have influenced performance in terms of compensatory gains and environmental adaptation.

Total steer gain in 1985 was greater on IES, but total financial loss was also greater (Table 2). This illustrates the fallacy of evaluating systems on the basis of "total production/unit area". In 1985, each steer on IES lost $58.67 while SLS steers lost $80.61/head. Therefore, IES increased losses 46% over SLS since twice as many cattle were pastured on IES. Breakeven market prices for IES and SLS were $70.01/cwt and $68.70/cwt, respectively. Feeder prices, at the end of the IES period, were $61.28/cwt for 665 lb steers while, feeder prices were $58.07/cwt for 780 lb/steers at the end of SLS in September (Table 2).

The estimated losses in 1985 were due to the combined influence of low weight gains and a large negative margin for purchase and market feeder prices. In Table 3, breakeven gains and feeder prices are estimated for 75-day IES and 150-day SLS programs using market structures and steer gain data from 1984 and 1985. These values were derived with estimated costs. Actual producer costs may differ from

Table 1. Weights and gains of steers on intensive-early stocking and summerlong stocking programs.

Grazing Management	Grazing Days	Init. steer wt.	Midsummer[a] Wt.	Midsummer[a] Gain	Summer End[b] Wt.	Summer End[b] Gain	Adj. total gain[c]
		lb/hd					
Intensive early stocking							
1984	84	474.5	681	206.5	--	--	413
1985	79	542	664	122	--	--	244
Seasonlong stocking							
1984	146	476	684.5	208.5	769	84.5	293
1985	156	552	693	141	759	66.5	207.5

[a] 7/20/84, 7/12/85
[b] 9/20/84, 9/27/85
[c] Adjusted total gain = gains adjusted for differences in stocking density, for every 1 steer on SLS, 2 steers were on IES. Thus, adj. gain for IES = midsummer gain x 2 and Adj. gain for SLS = summer end gain x 1.

Table 2. Cost and return analysis for IES and SLS.

	1984 IES	1984 SLS	1985 IES	1985 SLS
Initial wt, lb/hd	475	475	542	552
Initial value, $/cwt	71.23	71.23	72.50	72.50
Initial value, $/hd	338.34	338.34	392.95	400.20
Final wt, lb/hd	682.00	768.00	664.00	759.00
Final value, $/cwt	64.18	61.80	61.28	58.07
Final value $/hd	437.71	474.63	406.89	440.93
Gross return, $/hd	99.37	136.29	13.94	40.73
Cash cost, $/hd	71.27	109.55	72.61	121.34
Net return, $/hd	28.10	26.74	(58.67)	(80.61)
Adj. net return, $[a]	56.20	26.74	(117.34)	(80.61)

[a] Adjusted for differences in stocking density

these estimates. First, note the influence of markets on breakeven gain. Under the 1984 market structure, breakeven gains for IES and SLS were 59 and 81 lb/head lower than breakeven gain in 1985. Although not impossible, it is improbable that stockers would have achieved breakeven weights on either grazing program in 1985. Second, low gaining cattle (1985 gain) did not return a profit in either year under either program. In contrast, cattle that gained well (1984 gain) would have returned a profit in 1984.

Table 3. Projected breakevens for 1984 and 1985 market price structures.

	75 day IES	150 day SLS
1984 Market Structure		
Breakeven gain[a]	158 (2.10)	262 (1.75)
Breakeven price, $/cwt[b]		
1984 steer/gain	62.00 (64.40)	59.08 (61.44)
1985 steer/gain	68.95 (64.71)	67.52 (62.74)
1985 Market Structure		
Breakeven gain[a]	217 (2.90)	344 (2.30)
Breakeven price, $/cwt[b]		
1984 steer/gain	63.48 (61.50)	59.90 (58.38)
1985 steer/gain	70.58 (62.55)	68.47 (59.76)

[a]Breakeven gain/head (breakeven gain/head/day)
[b]Breakeven selling price (Actual market value)

In July, at the end of an IES program, a producer generally has three options 1) sell the cattle, 2) move cattle to another pasture or backgrounding operation, 3) move cattle to a feedlot. In either year with either set of gains, there was no advantage to holding cattle on pasture through late summer (Table 2). The steers had gained 68 to 71% of their total summer gain by mid-July and returns per steer were not increased by the 30% of total gain made from mid-July to late September.

With slow gaining cattle, such as the 1985 cattle, the only chance for a profit was to place the cattle in a feedlot. Cattle that gained well (i.e. 1984 cattle) could have been sold for a good return in July, 1984, but in 1985 the cattle should have been moved to a feedlot. These cattle would have been finished in late November to early December when fed cattle markets had rebounded. Producers considering an IES program should arrange to place the cattle in the feedlot in July. This provides some insurance in the event that summer feeder cattle markets are unusually weak or cattle gain poorly. Despite greater total losses for IES, investment (loss) per head was lower with IES. Hence, the producer would have entered the feeding period with a better position/head than with SLS.

Literature Cited

Launchbaugh, J.L. et al. 1983. Intensive-early stocking studies on Kansas ranges. Kansas Agric. Exp. Sta. Rep. 441.

McCollum, F.T. et al. 1985. Intensive-early stocking vs. seasonlong stocking programs for stocker cattle on Cross Timbers rangeland. OAES MP-117, p. 229.

Smith, E.F. and Owensby, C.E. 1978. Intensive-early stocking and season long stocking of Kansas Flint Hills Range. J. Range Manage. 31:14.