Evaluating Beef Cattle Best Management Practices in South Texas: Cow Pregnancy Testing and BSE Testing

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Abstract:

Cow-calf operations in South Texas are continually confronted with weather and economic issues that impact bottom-line profits and equity growth. Managers should evaluate and implement management strategies to improve financial performance and condition. This analysis illustrates financial incentives to adopt cow pregnancy (PT) and breeding soundness examination (BSE) testing.

Introduction:

Cow-calf operations in South Texas are continually confronted with weather and economic issues that impact bottom-line profits and long-term viability. Drought conditions limiting forage, swings in market prices, and ever increasing input costs directly impact net returns and financial condition. Off-farm income and wildlife management are often necessary to supplement ranching operations. In addition, prudent managers should continually evaluate operations and new management strategies and changes to increase long-term profitability and equity growth.

"Best management practices" is often used to describe a wide array of strategies to improve herd performance and ranching profitability. These may include changes in stocking rates, culling, supplemental feeding, breeds, herd mix, type of livestock enterprises, hay testing, cow pregnancy testing, and bull breeding soundness examination (BSE) testing. This study illustrates the financial implications of two management strategies—cow pregnancy and BSE testing—targeted toward optimizing the profitability of South Texas ranching operations.

Data and Assumptions

The data and assumptions for this study are based on actual research results, average prices and typical inputs in South Texas. Initial, local cattle prices were obtained from the Live Oak Livestock Commission Company auction report in Three Rivers, Texas, for May 4, 2009. The base year for the 10-year analysis of the representative ranch is 2009 and projections are carried through 2018. Commodity and livestock price trends follow projections provided by the Food and Agricultural Policy Research Institute (FAPRI, University of Missouri) with costs adjusted for inflation over the planning horizon

Methodology

The methodology is a ten-year financial simulation of returns to a 2,000-acre (200 cows, 8 bulls) ranch using stochastic cattle prices and weaning weights. Scenarios compare the financial performance of the cow-calf operation of not implementing and implementing two selected best management practices—cow pregnancy and BSE testing.

Results

The financial well-being of the typical South Texas cow-calf operation is often supported by off-farm employment, hunting and other income sources. Implementing best management practices offer a cow-calf-producer the potential to improve herd performance and profitability. Although actual results may vary by producer, cow pregnancy testing and culling open cows, and BSE testing and culling infertile bulls may offer opportunities to improve a ranch's bottom line. A prudent manager will study and implement practices that fit his or her management style and operation.

Table 1: General Assumptions, 200-Cow South Texas Representative Ranch, 2009

Selected Parameter	Assumptions
Operator Off-Farm Income	$24,000/yr.
Spouse Off-Farm Income	$35,000/yr.
Family Living Expense	$30,000/yr.
Ownership Tenure	100%
Royalty Income	Not Included
Hunting Income	$7/acre
Part-Time Labor	$2,400/yr.
Herbicide Costs/Acre	$1.50
Herd Size	200 cows, 8 bulls
Cow Herd Replacement	Bred cows
Vet, Medicine & Supplies	$25/cow
Salt/Mineral blocks/Year	$20/cow
Hay Fed/Cow/Year	1.5 tons
Protein Cubes Fed/Cow/Yr	150 lbs.
Cow Culling Rate/Year	7.50%
Steer Weaning Weights	525 lbs.
Heifer Weaning Weights	475 lbs.
Steer Prices	$1.08/lb.
Heifer Prices	$.98/lb.
Cull Cow Prices	$.50/lb.
Cull Bull Prices	$.62/lb.
Bred Cow Prices	$1,100/head
Replacement Bull Prices	$2,300/head
Hay Prices	$135/ton
Range Cube Prices	$.18/lb.

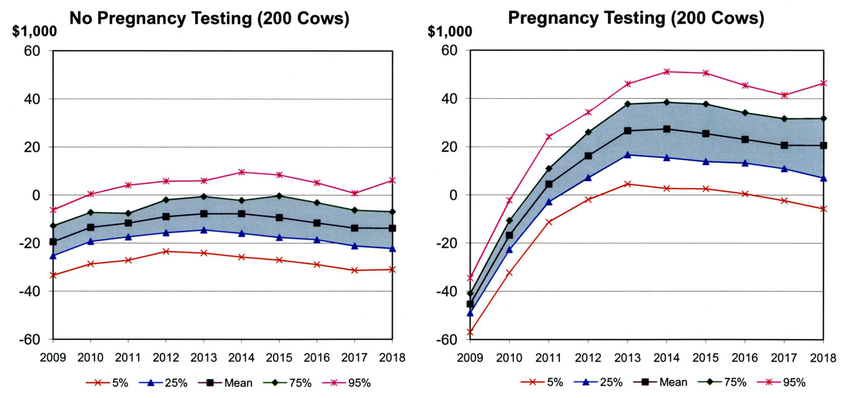
Table 2: Specific Assumptions, 200-Cow South Texas Representative Ranch, 2009

Cow Pregnancy Testing (PT)	No	Yes
Calving Rate	70%	70% in 2009
		81% in 2010
		89% in 2011
		92% in 2012
		95% in 2013-2018
Cow Culling Rate/Yr.	7.5%	30% in 2009
		19% in 2010
		11% in 2011
		8% in 2012
		5% in 2013-2018
Pregnancy Test Fee	None	$6.20/cow, $1,240/yr.
Bull Soundness Exam (BSE)	**No**	**Yes**
Calving Rate	76.5%	76.5% in 2009
		85% in 2010-2018
BSE Test Fee	None	$57.63/bull, $461/yr.

Table 3: 10-Year Average Financial Indicators Per Cow for a South Texas Representative Ranch (200 Cows)

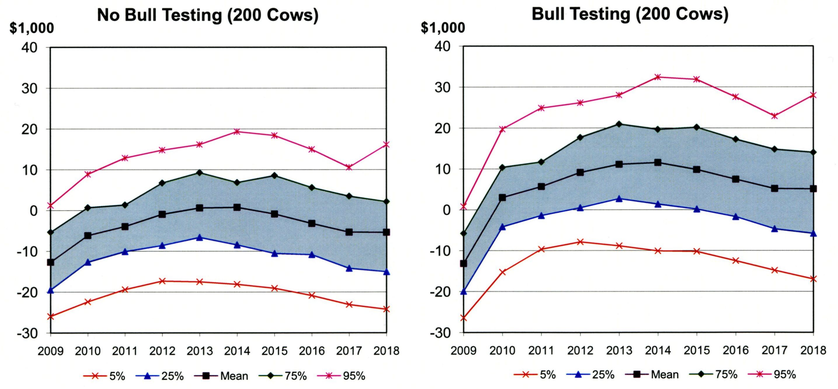
Scenario	10-Year Averages Per Year: Total Cash Receipts ($1000)	Total Cash Costs ($1000)	Net Cash Farm Income ($1000)	Net Cash Farm Income/Cow ($1000)
No Pregnancy Testing	112.30	123.99	-11.69	-0.06
Pregnancy Testing	140.19	129.89	10.30	0.05
No Bull Testing	120.31	123.99	-3.69	-0.02
Bull Testing	129.96	124.45	5.50	0.03
Cow Pregnancy Testing (PT)	**PT Cost**			**$6.20/cow/year**
	Change in NCFI			**$110/cow/year**
Bull Soundness Exam (BSE)	**BSE Cost**			**$2.31/cow/year**
	Change in NCFI			**$50/cow/year**

Figure 1. Projected Variability in Net Cash Farm Income for No Annual Pregnancy Testing and Annual Pregnancy Testing.



Note: Percentages indicate the probability that Net Cash Farm Income is below the indicated level.
The shaded area contains 50% of the projected outcomes.

Figure 2. Projected Variability in Net Cash Farm Income for No Annual Bull Testing and Annual Bull Testing.



Note: Percentages indicate the probability that Net Cash Farm Income is below the indicated level.
The shaded area contains 50% of the projected outcomes.