

Profitability of Beef Cattle Best Management Practices in South Texas: Reproductive Management

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Table 1: 2015 General Assumptions, South Texas Representative Ranch

Selected Parameter	Assumptions
Operator Off-Farm Income	\$24,000/year
Spouse Off-Farm Income	\$35,000/year
Family Living Expense	\$50,000/year
Native Pasture	1,800 acres
Improved Pasture (Bermuda)	200 acres
Ownership Tenure	100%
Royalty Income	Not Included
Hunting Income	\$10/acre
Herbicide/Acre (Native Pasture)	\$0.90
Herbicide/Acre (Bermuda)	\$12.00
Fertilizer/Acre (Bermuda only)	\$30.00
Herd Size	200 Cows, 8 Bulls
Cow Herd Replacement	Bred cows
Vet, Medicine & Supplies	\$34.34/cow
Salt/Mineral blocks/Year	\$23.60/cow
Hay Fed/Cow/Year	1.5 tons
Protein Cubes Fed/Cow/Year	200 lbs.
Calving Rate	90%
Cow Culling Rate/Year	10%
Steer Weaning Weights	525 lbs.
Heifer Weaning Weights	475 lbs.
Steer Prices	\$2.70/lb.
Heifer Prices	\$2.50/lb.
Cull Cow Prices	\$1.10/lb.
Cull Bull Prices	\$1.20/lb.
Bred Cow Prices	\$1,850/head
Replacement Bull Prices	\$4,500/head
Hay Prices	\$100/ton
Bulk Range Cube Prices	\$.15/lb.
Pregnancy Testing	\$7.50/cow
BSE Testing	\$42.50/bull
Clostridial Vaccination	\$1.16/calf
Castration & Growth Implants	\$1.97/calf
Deworming Injection (Calf/Cow)	\$1.81/\$3.96
Reproductive Vaccines	\$3.12/cow
Extra Day Labor/Calf Practice	\$2/calf

Abstract

Cow-calf producers are expanding herds in response to high cattle prices and better forage conditions across Texas. Reproductive management practices such as pregnancy testing, bull breeding soundness exams (BSE), and vaccinations for reproductive diseases are important practices that can increase the number of live calves born and weaned, and profits.

Introduction

“Best management practices” such as pregnancy testing, bull BSE and vaccinations for reproductive diseases are proven strategies to improve herd performance and ranching profitability. However, many beef producers do not implement these practices. Only 18% of US beef producers utilize pregnancy testing in their cows, only 19.5% conduct breeding soundness exams on their bulls, and only 39.6% vaccinate for any reproductive diseases (USDA 2009 & 2010). The most common reasons for producers not using these practices are lack of knowledge or skill, facilities, time or cost. This study illustrates the financial implications of using selected reproductive management practices to improve profitability of South Texas ranching operations.

Assumptions

- A 2,000-acre ranch (200 cows, 8 bulls) with average market prices and inputs is assumed. Five scenarios were evaluated:
- 1-Not using any reproductive management practices (no pregnancy testing, no BSE, and no vaccinations for reproductive diseases)
 - 2-Pregnancy testing all cows
 - 3-BSE testing all bulls
 - 4-Vaccinating all cows for reproductive diseases
 - 5-Using all selected reproductive management practices (pregnancy testing cows, BSE testing bulls, and vaccinations for reproductive diseases)

The base year for the 10-year analysis of the representative ranch is 2015 and projections are carried through 2024. Initial cattle prices used were from the Live Oak Livestock Commission Company auction report in Three Rivers, Texas, for January 26, 2015. The projections for 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.

Calving rates and death loss assumptions in the scenarios were based on research conducted by Texas A&M AgriLife Research and Extension Service and those typical for the region. Assets, debts, machinery inventory, and scheduled equipment replacements were the same in all management scenarios. It is assumed the ranch has only intermediate-term debt.

Results

The methodology involved a 10-year financial simulation of returns of the ranch using stochastic cattle prices and weaning weights. Scenarios compare the financial performance of a cow-calf operation assuming the five reproductive management strategies.

Implications

High market prices increase the potential net profits and risk exposure in cattle operations. Off-farm income, hunting, and other sources of income help mitigate the higher level of financial risk. However, implementing cost-effective reproductive management practices such as pregnancy testing, BSE, and vaccinations for reproductive diseases can also improve calving rates, reduce calf death losses, and improve profitability, alleviating some of the risk exposure to higher capital investment and rising operating costs. Earlier it was stated that the most common reasons for producers not using these practices are lack of knowledge or skill, facilities, time or cost. These results show these practices are very profitable and could pay for facilities, training, or to pay for a veterinarian to conduct them.

Actual results will likely vary by producer, reproductive management practices, and cattle markets. Cow-calf producers should continue to implement best reproductive and other management practices that improve the bottom-line and financial performance of their operation.

Figure 1. Projected Variability in Net Cash Farm Income, 200 Cows

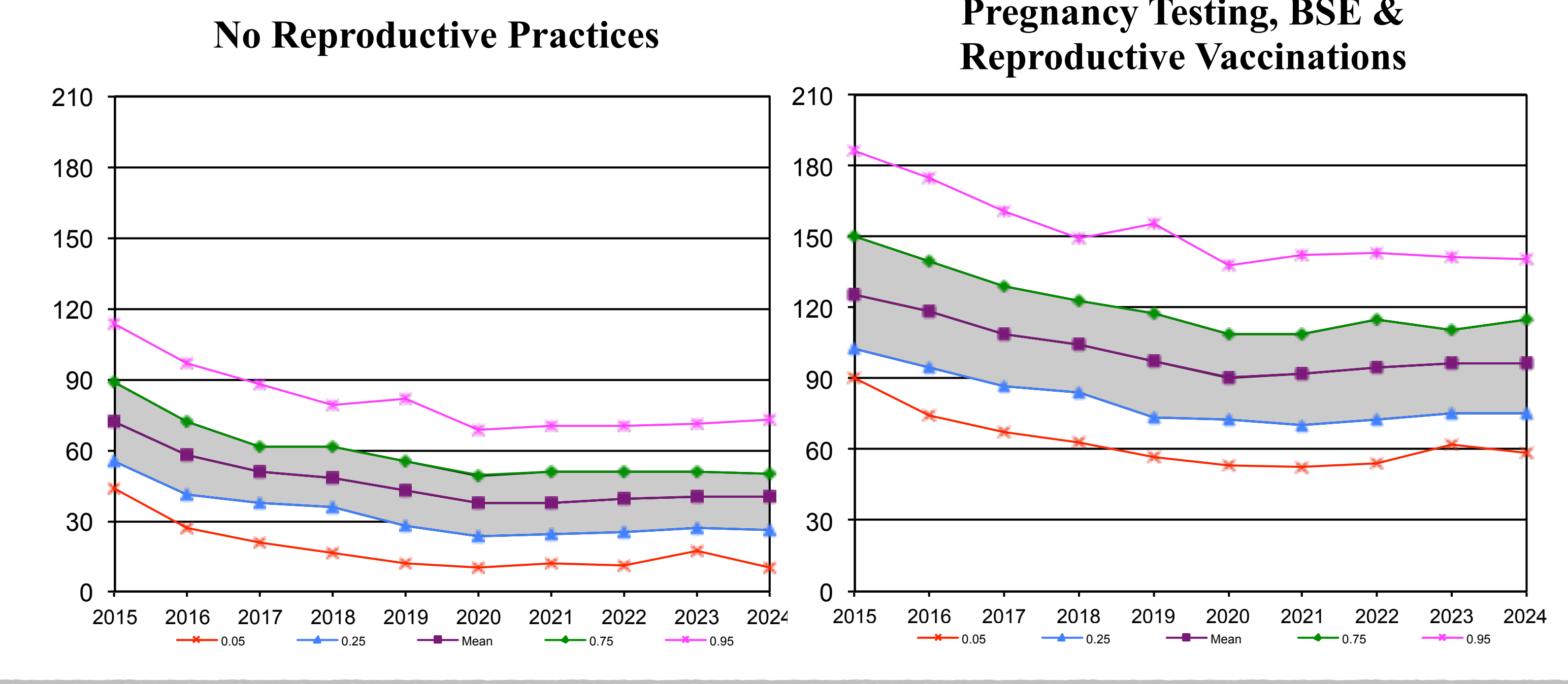


Table 3: 10-Year Average Financial Indicators for a South Texas Representative Ranch (200 Cows)

Scenario	10-Year Averages Per Year					Cumulative 10-Yr Cash Flow/Cow (\$1000)
	Total Cash Receipts (\$1000)	Total Cash Costs (\$1000)	Net Cash Farm Income (\$1000)	Net Cash Farm Income/Cow (\$1000)	Net Cash Farm Income/Calf (\$1000)	
1-No Reproductive Practices	196.75	150.10	46.65	0.233	0.348	3.761
2-Pregnancy Testing	256.05	154.94	101.11	0.506	0.532	5.372
3-Bull Soundness Exam	247.53	153.12	94.41	0.472	0.525	5.182
4-Reproductive Vaccinations	236.19	153.81	82.38	0.412	0.485	4.834
5-All Reproductive Practices	258.52	155.98	102.54	0.513	0.540	5.418

Table 2: Specific Assumptions for a South Texas Representative Ranch (200 Cows)

Scenario	Pregnancy Testing (\$/Cow)	Bull Soundness Exams (\$/Bull)	Reproductive Vaccinations (\$/Cow)	Calf Death Loss	Specific Calving Rates		
					Year 1	Year 2	Year 3-10
1-No Reproductive Practices	n/a	n/a	n/a	5%	70%	70%	70%
2-Pregnancy Testing	7.50	n/a	n/a	1%	85%	90%	95%
3-Bull Soundness Exam	n/a	42.50	n/a	1%	85%	90%	90%
4-Reproductive Vaccinations	n/a	n/a	3.12	1%	80%	85%	85%
5-All Reproductive Practices	7.50	42.50	3.12	1%	90%	95%	95%

References
USDA. 2009. Beef 2007-08, Part II: Reference of Beef Cow-calf Management Practices in the United States, 2007-08. USDA:APHIS:VS, CEAH. Fort Collins, CO. #N512.0209
USDA. 2010. Beef 2007-08, Part IV: Reference of Beef Cow-calf Management Practices in the United States, 2007-08. USDA:APHIS:VS, CEAH. Fort Collins, CO. #523.0210