

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

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Abstract

Spring rains in 2014 improved forage conditions in most of Texas which has increased interest in herd rebuilding and prices for feeder calves and replacements. Managing profits in the midst of changing market conditions is challenging. This analysis illustrates the continued importance of various calf management practices to herd performance and profits.

Introduction

“Best management practices” are strategies to improve herd performance and ranching profitability. These often include calf management practices such as vaccinating, castrating, implanting, and deworming. Better calf management can improve herd performance and weaning weights. Although the financial benefits are well known, few ranchers take the opportunity to implement these practices that will help them improve profitability (USDA 2008).

Data and Assumptions

A 2,000-acre ranch (200 cows, 8 bulls) with average prices and inputs is assumed. Five scenarios were evaluated: 1) not using clostridial vaccinations, implants, castration, growth implants or deworming (no calf management); 2) administering clostridial vaccinations to all calves; 3) castrating bull calves and implanting all calves; 4) deworming all cattle and calves; and 5) using all selected management practices (clostridial vaccinations, castrating and implanting, and deworming).

The base year for the 10-year analysis of the representative ranch is 2014 and projections are carried through 2023. Initial cattle prices used were from the Live Oak Livestock Commission Company auction report in Three Rivers, Texas, for June 9, 2014. In Scenarios 3, 4 and 5, a market price slide of \$.04 for each 25 lbs. of weight gain was assumed to account for higher calf weights. 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.

Specific weight gain and death loss assumptions in the scenarios were based on research conducted by Texas A&M AgriLife Research and Extension Service. The clostridial vaccination is a 7-way injection which reduces calf death loss. A review of previous research (Ringer 2010) indicates that castrating and implanting steers and deworming can increase weight gain by 5% (approximately 25 lbs.) at weaning. With the use of all selected calf management practices (vaccinating, castrating, implanting, and deworming), it was assumed that average calf weights would increase 10%. In scenarios 4 and 5, calves are dewormed once a year. Assets, debts, machinery inventory, and scheduled equipment replacements for the projection period were the same in all management scenarios. It is assumed the ranch has only intermediate term debt.

Methodology

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 calf management strategies.

Table 1. 2014 General Assumptions, South Texas Representative Ranch

Selected Parameters	Assumptions
Operator Off-Farm Income	\$24,000/year
Spouse Off-Farm Income	\$35,000/year
Family Living Expense	\$30,000/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)	\$8.15
Fertilizer/Acre (Bermuda only)	\$18.00
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	100 lbs.
Calving Rate	90%
Cow Culling Rate/Year	10%
Steer Weaning Weights	525 lbs.
Heifer Weaning Weights	475 lbs.
Steer Prices	\$2.10/lb.
Heifer Prices	\$2.00/lb.
Cull Cow Prices	\$1.10/lb.
Cull Bull Prices	\$1.20/lb.
Bred Cow Prices	\$1,625/head
Replacement Bull Prices	\$3,500/head
Hay Prices	\$100/ton
Bulk Range Cube Prices	\$.18/lb.
Pregnancy Testing	\$6.35/cow
BSE Testing	\$53.75/bull
Clostridial Vaccination	\$1.11/calf
Castration & Growth Implants	\$1.74/calf
Deworming Injection	\$2.59/calf
Extra Day Labor/Calf Practice	\$2/calf

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

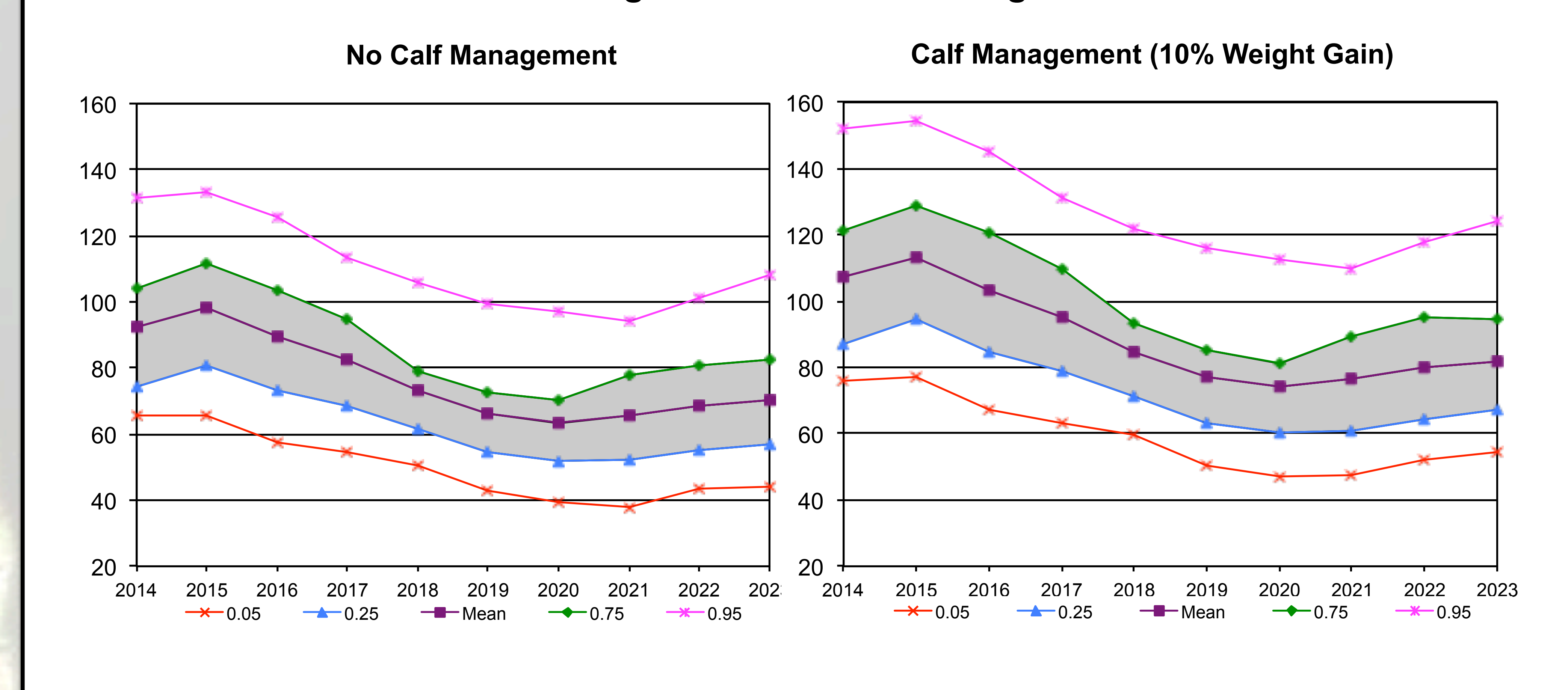
Scenario	Clostridial Vaccinations (\$/Calf)	Implants & Bull Calf Castration (\$/Calf)	Deworming (\$/Calf)	Extra Day Labor (\$/Calf)	Calf Death Loss	Calf Weaning Weights	
						Steers (lbs.)	Heifers (lbs.)
1-No Calf Management	n/a	n/a	n/a	n/a	5%	525	475
2-Clostridial Vaccinations	1.11	n/a	n/a	2.00	1%	525	475
3-Castration & Implants	n/a	1.74	n/a	2.00	6%	550	500
4-Deworming	n/a	n/a	2.59	2.00	5%	550	500
5-All Calf Management	1.11	1.74	2.59	5.00	2%	575	525

Implications

The financial performance and condition of most South Texas cow-calf operations will continue to be supported by off-farm income, hunting, and other sources of income. At the same time, implementing cost-effective calf management practices such as blackleg vaccinations, castrations and implants, and deworming offer cow-calf producers the potential to improve profitability.

Actual results will likely vary by producer, management practices, and cattle markets. The actual “slide” in calf prices due to extra weight gain of 5% to 10% will likely vary according to existing market conditions and will directly impact overall profitability. Cow-calf producers should continue to implement best management practices that improve the bottom-line and financial performance of their operation.

Figure 1. Projected Variability in Net Cash Farm Income for No Calf Management vs. Calf Management and 10% Weight Gain



References
Ringer, Cody, MacYoung, Joe Paschal, and Steven Klose. *Economic Impact of Beef Cattle Best Management Practices in South Texas: Calf management*. FARM Assistance Focus 2010-3. August 2010.
USDA. *Beef 2007-08, Part 1: Reference Beef Cow-Calf Management Practices in the U.S.* USDA-Aphis-VS, CEAH. Fort Collins, CO. 2008.

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

Scenario	10-Year Averages Per Year					Cumulative	
	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)	10-Yr Cash Flow/Cow (\$1000)	10-Yr Cash Flow/Calf (\$1000)
1-No Calf Management	205.00	128.03	76.97	0.385	0.428	2.159	2.399
2-Clostridial Vaccinations	212.38	128.59	83.79	0.419	0.466	2.276	2.529
3-Castration & Implants	207.42	128.62	78.79	0.394	0.438	2.192	2.436
4-Deworming	209.31	128.61	80.39	0.403	0.448	2.225	2.472
5-All Calf Management	219.11	129.75	89.36	0.447	0.496	2.376	2.640