

7-7 RANCH

RANCH MANAGEMENT

RECORD KEEPING

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5/18/2019

RANCH MANAGEMENT – RECORD KEEPING

Ranching is like any other business. We are in this business to make a profit – which requires intentionally managing our cash reserves, our cattle, our land, capital purchases, labor, feed and water resources. Intentional – with purpose and a business plan.

WHERE DO WE BEGIN?

- DEVELOP A MISSION STATEMENT
- WRITE A BUSINESS PLAN
Share your vision – values – goals – actionable strategic plan
- BREED SELECTION
- COMMERCIAL OR REGISTERED
- DECIDE ON TYPE OF OPERATION
Cow-calf * Stockers * Backgrounding * Replacement Heifers * Bull Production
- Marketing Plan

Example: The mission of 7-7 Ranch is to preserve our family heritage in cow-calf production - increase profitability by adding value to our commercial females through source verification out of registered Brangus and Angus genetics – procuring top quality registered bulls with an EPD profile for consistent quality beef production.

WHY RECORD KEEPING IS IMPORTANT

- BETTER DECISION MAKING – factual data
- ORGANIZED – put your hands on info as needed – saves valuable time
- DOCUMENTS AVAILABLE
 1. Accountants
 2. Lenders – Financial Institutions
 3. Marketing – Vaccine protocols, feed ingredients, sires for added value, certification for niche marketing (natural, organic, grass fed)
 4. FSA/NRCS – Conservation plans and funding programs
 5. Insurance – disaster assistance
 6. Estate planning and next generation transition

WHERE TO FIND INFORMATION

- LAWYERS
- TAX ACCOUNTANTS
- Extension Agents – printed info – field trips – educational programs
- Books, magazines, online (University info access)
- Join Associations – TSCRA, NCBA – attend conferences and schools for ranching
- BQA Certification – a wealth of actionable information and hands on demonstrations
- Vet relationship
- Other producers
- FSA & NRCS – stewardship of the land – conservation plans
- Attend programs specifically designed to disseminate relevant information (Beef Short Course)

IMPORTANT CATTLE RECORDS TO KEEP

- FINANCIAL
- PRODUCTION – PERFORMANCE DATA
- HEALTH RECORDS
- VACCINE PROTOCOLS
- BULL RECORDS
- FEED RECORDS
- EQUIPMENT & MAINTENANCE RECORDS
- ENVIRONMENTAL – PASTURE MAINTENANCE AND DEVELOPMENT

FINANCIAL

- QuickBooks
 1. Set up the company with initial capital and assets
 2. Income – calf production – cull cows/bulls – coop dividends – sales – lease income
 3. Expenses – labor – legal – accounting – insurance – phones/internet – feed, hay, vaccine, mineral costs – property maintenance to include fertilizer, mowing, herbicides – fencing expense – equipment repair – supplies/tools – fuel, oil, tires, batteries – taxes.....to name a few expenses

4. Annual Budgets – monthly anticipated expenses and income – capital expenditures of trucks, equipment, cows, heifers, bulls
5. Profit and Loss
 - Actual vs. Previous year
 - Actual vs. Budget
6. Depreciation
7. Capital Purchases
- CattleMax or other Management Tool (Excel Spreadsheets)
 8. Set up cow – bull inventory. Brand and number tag every animal and record
 9. Cow – bull purchases
 10. Production sales and cull sales
 11. Marketing costs
 12. Death loss

PRODUCTION - PERFORMANCE

- First – determine the best stocking rate for your geographical area – your ranch. Map your pastures – good to work with NRCS – GPS pastures for total acreage and grazeable acres. Each pasture is different – native or improved grasses. Remember a cow (1 unit) with calf (2 units). **DO NOT OVERGRAZE!!** (Worksheet #1) Pasture moves – sales – death loss
- Set up a ranch planning calendar (Worksheet #2)
- Palpation records - Preg test your cows. How else will you know which open cows should be culled? Important to know if cow is bred early vs. late. (Worksheet #3)
- Breeding records – which bulls were the cows exposed to? (Worksheet #4)
- Calving data – Did the cow in fact produce a live calf? Quality of calf? (Worksheet #5)
- Pounds produced - Break even costs (Worksheet #6) CattleFax has a on line Cow-Calf Breakeven Calculator. <https://www.cattlefax.com/ccbe/>

HEALTH RECORDS

Remember the cow is your factory – your employee – and we want her in the best possible health for optimum performance. Start with a physical examine (teeth, hooves, teats, etc.). Critical is her overall Body Condition Score (BCS) which must be monitored every month of her life so she is in good condition to breed – carry and produce a live healthy calf – be in condition to raise the calf – and re-breed.

Records must be kept when treatment is administered to a herd or individually to a sick animal. The treatment record should contain the following information:

- Treatment date
- Individual animal or group identification
- Approximate weight of animal or group average
- Routine vaccine protocol or diagnosis of sick animal
- Product administered
- Product lot/serial number
- Earliest date the animal could clear withdrawal time
- Dose given
- Route of administration (IM – SQ – Oral – Pour On)
- Location of injections
- Name of person who administered the drug

(Worksheet #7)

VACCINE PROTOCOLS

A vaccine protocol is designed to maintain herd health. Consult your veterinarian before instituting any health protocol. The plan should cover vaccines, parasitic drugs and all injectables including minerals. (Worksheet #8) It is critical to work with your veterinarian on which diseases are still prominent in your area - to address notable problems you are having in your herd – to discuss the timing of drug administration for greatest efficacy. Protocols are also necessary now for calf sales in certain niche markets. Be aware of and keep records on:

- Which animals are being treated – bulls, cows, calves
- Weight of animal – age of animal
- Specific product brand required
- How drug is administered – SQ – IM – Oral – Pour On)
- Drug withdrawal times must be strictly adhered to before an animal can be sold – this is the period of time that must pass after the last dose has been administered to the harvest of the animal.
- Adhere to the label instructions – it is never advisable to go “off label”

BULL RECORDS

In my opinion – one of the most critical decisions you will make on your ranch is which bulls to purchase. That bull is 50% of the quality of your production and the genetic make-up of your future replacement heifers. Be aware of the EPD's (Expected Progeny Difference):

- CED -Calving Ease
- BW – birth weight expressed in pounds – predictor of sire's ability to transmit birth weight
- WW – weaning weight – expressed in pounds – predictor of sire's ability to transmit weaning weight
- YW – yearling weight
- SC – scrotal – valuable indicator of bull's fertility
- DOC – docility
- Milk – merit for milk and mothering ability as expressed in the daughters
- CW – carcass weight
- Marb – marbling RE – ribeye FAT – fat thickness

Set up records on each bull:

- Breed – Bull's Registered Name – Registration Number - Pedigree
- Date of Birth
- Ranch Brand and ID
- Breeder – Ranch Origin - Purchase Date – Purchase Price
- Any previous owners – their medical records – vet verified trich tests

EVERY YEAR a BSE (Breeding Soundness Exam) must be performed before turn out and records kept on each bull.

- Bull ID – breed – current age
- Physical examination – eyes, teeth, feet, legs, hocks, body condition score
- Medical history and current examination – disease or injury that affects joints, muscles, nerves, bones, or tendons that would lead to physical unsoundness. In addition to structural – examine penis for inability to service naturally
- Scrotal circumference
- Sperm quality – volume – sperm cell motility – sperm cell morphology
- Trichomoniasis Test
- Vet comments

Keep pasture records of bull turn out – date of turn out – date of bull pick up – identify cows in each pasture – which bulls serviced a particular herd.

FEED RECORDS

It is not only a good management practice to keep up with your feed records, it is now required in many niche market verifications – “all natural”. Your records should include:

- Feed list – hay – supplemental feeds – minerals
- Source or manufacturer of feed
- Animals product was fed to
- Labels should be kept on all feed showing ingredients
- Dates feed was fed

EQUIPMENT AND MAINTENANCE RECORDS

Set up a record on ALL equipment purchased.

- Describe the item – vin or serial number
- Date of purchase
- Cost of purchase

Record all preventive maintenance and repairs:

- Date of service
- Who performed the service?
- Hours/mileage
- Specifically record what services or repairs were actually administered
- Maintenance service schedule
- Comments on steps for preventive planning

ENVIRONMENTAL – PASTURE MAINTENANCE AND DEVELOPMENT

Records must be kept on all grazing practices (rotation) – herbicide and pesticide applications – planting – fertilizing - harvesting. Be sure you have the appropriate license and training before proceeding with any application. All records should include your applicator license number.

Make sure your records include:

- Date and time of practice
- Product used with appropriate manufacturer name – product EPA and serial numbers – expiration dates
- Labels
- Wind speed and direction, temperature, humidity, weather, field conditions
- Formula used
- Pest observed – weeds – disease
- Soil tests
- Acres treated – rate applied per acre
- Grazing or harvest restrictions
- Safety data precautions – training for employees – dates, time, signatures of employee

Let's single out one of the most important records we must keep as a rancher – RAINFALL. We have all been called grass farmers at some point because our grass production affects the pounds we produce. So be sure you are recording:

- Actual rainfall vs. average rainfall vs. last year's rainfall
- Annual calendar documentation of weather events (flooding, ice, snow storms) Worksheet #9
 - Have an emergency plan for weather events (drought, flooding, ice, wind). The plan must include evacuation – feed and fresh water sustainability.

CONCLUSION:

This list is not all inclusive but hopefully it will get you thinking about the importance of keeping good records. It can be an invaluable timeline of progress. Records are invaluable in decision making. They can save you money and most definitely make you money.

DISCLAIMER: This guide is to give you working ideas – these are not recommendations for your operation. Example: My vaccine protocol is not your vaccine protocol. You must work out your protocols with your trusted advisors for your area.

ADDENDUM

EXAMPLES – WORKSHEETS - FORMULAS

PASTURE MOVES - SALES - DEATH LOSS

actual acreage 2015

	2015												TOTAL	2000								
	AB	SawMill	SikYrd	SikYrd	MID	Frt	Woody	Upper	BH	7-7	SE	L-horn			Math	Horse	Pens	SusBot	SusMed	SusTrp	SUS 19	SUS 20
COWS	71	50	0	56	87	0	45	1	4	4	52	0	27	0	392	0	38					
Cows extra atten back out																						
	-1	1	17	-14	-1	-1	27	3	-1	-1	2	-1	-1	-1	1	1	1	1	1	1	1	1
	-2	-9	-1	-2	1	2	-1	-1	-1	1	1	1	1	1	1	1	1	1	1	1	1	1
	67	42	0	57	0	25	0	86	0	44	1	0	0	0	0	52	0	0	35	0	409	0
After Spring Work	25																					
	-2																					
	-1																					
After shipping																						
Fall Work	87	42	0	57	0	21	0	101	0	31	22	0	0	0	38	0	0	25	0	424	0	424
	-3	-6																				
	2																					
	33																					
	-25																					
TOTAL	94	36	0	25	0	43	0	82	0	31	0	0	0	0	37	0	0	25	0	373	0	373
Grazeable acres	442	74	130	10	187	86	79	128	205	50	49	14	72	19	4	78	54	24	48	42	1800	42
Rec capacity	88	15	26	2	37	17	16	26	41	10	10	3	14	4	1	16	11	5	10	8	360	8
Capacity - cow/calif	93	40	40	40	80	35	30	30	80	35	35	5	20	5	5	5	5	5	5	5	5	375
Stocking rate	-4	0	4	15	0	-8	-2	0	-1	0	0	0	0	0	-2	0	0	0	0	0	0	2
BULL	4	0	1	0	1	0	0	3	0	1	0	0	0	0	0	0	0	0	0	0	0	14
A-Angus	9	2																				9
B-Brangus	8																					8
TOTAL	17	0	2	2	0	2	2	0	3	0	2	0	0	0	1	0	0	0	1	0	17	17

*Note - replacement heifers

ANNUAL COW WORK CALENDAR

2019

	JAN	FEB	MAR	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	
1									Vac replacements & palp and vac			1st herd calf				last herd calf
2									1st calf heifers							
3																
4																
5																
6																
7																
8																
9				Pickup heif bull												
10																
11																
12																
13																
14																
15																
16										Fail Work/Vac & preg test						
17																
18																last heif calf
19																
20																
21																
22																
23																
24																
25																
26																
27																
28																
29																
30																
31																

Calves:
 Vision 20-20 w/ pink eye
 Vista 5
 Cydectin Pour On
 Dehorn
 Tag
Cows:
 Ultrabac 8
 Cydectin PO
 Tag
 Cydectin or Eprinex
Calves:
 Vision 8
 Vista Once w/ pastuerella
 Cydectin PO
Cows:
 Virashield 6VL5+HB
 Scour Bos 9
 Ivomec Plus
 Tag
 Brand
 Brucellosis Vac
Calves:
 1st calf heifers & Replacements:
 Virashield 6VL5+HB
 Scour Bos 9
 Ivomec Plus
 Tag
 Brand
 Brucellosis Vac
Cows:
 Virashield 6VL5+HB
 Scour Bos 9
 Ivomec Plus
 Tag

2018

COWS	Palpation Dates	# COWS # BRED	Palpated	Bred	Open	%	#DIV/0!	Memo		Memo		COWS	BRED	OPEN	COWS	BRED	OPEN	Final Winter Settle	Plus Cows purchased
								TOTAL	CULL	CULL	BRED								
2018								COW CALVES	INVEN	EXPECTE	%	OPEN							
UPPER								0	0		#DIV/0!								
83	BEHIND HOUSE	83	76	7	15	91.57%		68	68	100.00%	0	68	68	68	68	68	68	68	
	FRONT							0	0	#DIV/0!	0	13	13	13	13	13	13		
59	MIDDLE	59	53	6		89.83%		53	53	89.83%	6	53	53	6	45	45	45		
	SAWMILL							0	0	#DIV/0!	0								
45	STK YRD	45	39	6	3	86.67%		42	39	92.86%	3	42	39	3	45	45	45		
100	ACROSS BRIDGE	100	90	14	14	90.00%		86	83	96.51%	3	90	83	7	101	85	16		
	WOODY							0	0	#DIV/0!	0	3	3	3	13	3			
10	Replacements							0	0	#DIV/0!	0								
	HDQTS PENS							0	0	#DIV/0!	0								
22	SOUTHEND	22	18	4	1	81.82%		21	18	85.71%	3	16	16	18	18	18			
	<i>1st calf from Woody</i>																		
32	Matthews	32	27	5	2	84.38%		30	26	86.67%	4	28	28	0	26	26			
	Sick Pen							0	0	#DIV/0!	0								
351	TOTAL	341	303	42	35	88.86%		306	287	93.79%	19	319	300	19	329	300	19		
												10	10						
												TOTAL	329	29					

2019 BULL WORK SCHEDULE

Feb 18 2019

PASTURE	# COWS	Bull Cow Ratio	BULLS needed	PLAN		AGE		AGE		AGE		AGE		OUT DATE	PICK-UP DATE	Days out	1st calf	last calf
				A	B	CE	BW	CE	BW	CE	BW	CE	BW					
Upper	25	1.0	1	1		Final Answer 5365	4	7	1.8	44F - A	70			2/18	5/20	90	28-Nov	27-Feb
Behind the House	42	1.7	2	2		TENX 7008 3195	4.2	4.7	3.0	TEN X 406 406	4.7	3.0		2/18	5/20	90	28-Nov	27-Feb
Matthews	23	0.9	1	2		44F - A 44 Farms	72	2	-1.5	44F - A 44 Farms	72	2		2/18	5/20	90	28-Nov	27-Feb
Southend	19	1	1	1		Lombardi E0536	2	13.0	-1.1					2/18	5/20	90	28-Nov	27-Feb
Woody	13	0.5	1	1		Pen		3.6						1/14	4/15	111	24-Oct	23-Jan
Middle	45	1.8	2	2		High Profile 468A6	5.3	7.2	-1.3	Omar 30A8	5.3	5.7		2/18	5/20	90	28-Nov	27-Feb
Old & thin	15					Ranger 820Z18	6.2	3.8	72	B	80	1.4		2/18	5/20	90	28-Nov	27-Feb
Stockyard	45	1.8	2	2		SRR Tail 2 000Z6	6.4	3.9	78	B	74	1.4		2/18	5/20	90	28-Nov	27-Feb
7-7 Trap	0	0.0	1			Okla 109	7.5	6	75	A	75	1.6						
Across the Bridge	99	4.0	4	4		Jupiter 8020-1184	5.4	7.0	2.3	Clark Ironstone	5.4	5.6		2/18	5/20	90	28-Nov	27-Feb
NOT IN SERVICE		0.0																

TOTAL	326	12.4	15	11	4													
Cows	326	12.4	15	11	4													
Bulls	13		9	4	Ownership													
						BREED AVERAGE BW EPD	ANGUS	2.2	BRANGUS	2.0								

#4

Cow Production History Card

Cow ID# _____

Date of Sale or Removal	
Reason	
Sale Weight	
Sale Price/lb.	
Total Value	

Cow ID _____

Description (Breed/color) _____

Cow's Sire _____ Sire Breed _____

Cow's Dam _____ Dam Breed _____

Cow's Birth Date _____ Weaning Weight _____

Purchase Date _____ Purchase Price _____

Cow Production Record

				Calving			Weaning			Pregnancy Test			
Year	Cow Age	Bull ID & Breed	Calf ID	Calf Birth Date	Calf Sex	Birth Weight	BCS at Calving	Calving Problems	Calving Interval (Days)	Weaning Weight	Replacement Heifer Kept yes/no	Pregnant or Open	BCS or Other Remarks

COW EXPENSE-REVENUE RATIO

Cattle Inventory on Jan 1

INTEREST INCOME
 MISC INCOME/REFUNDS
 OTHER RANCH REVENUE Timber

CALF SALES
 CULL LIVESTOCK SALES

TOTAL LIVESTOCK REVENUE

DIRECT CATTLE EXPENSE

TOTAL RANCH EXPENSE

EMPLOYEE EXPENSE
 RANCH MAINTENANCE
 MISCELLANEOUS & Guaranteed Payment

ATTORNEYS
 ACCOUNTANTS
 BASE EXPENSE
 PROPERTY TAXES
 0.00

Total Base Expense

CAPITAL LAND

EQUIPMENT
 TRUCKS
 BULLS
 HEIFERS-COWS
 HORSE

TOTAL CAPITAL EXPENSE

TOT RANCH-CAPITAL EXPENSE

COWS

357

136.83
 0.00
 6490.34

BULLS

17

284325.85
 64670.52

348,996.37

125,908.00

64,257.08

30369.43
 33887.65

190,165.08

34307.10

TOT RANCH EXPENSE

224,472.18

3499.00
 0
 4500.00
 53,200.00

61,199.00

285,671.18

REPLACEMENT

HEIFERS

87

CALVES

279

SOLD 257
 Replacements kept 22

78%

TOTAL

HEAD

461

TOTAL LBS
 149155

Pounds produced
 Calves sold 137055
 Heifers kept 12100

Rev per lb
 2.0745

Revenue per head
 757.04

Expense per head
 273.12

Income per head
 483.92

Exp per lb
 1.27

Expense per hd w/ ranch expense
 412.51

Income per hd w/ ranch maintenance
 344.54

CATTLE INCOME 348,996.37
 OTHER INCOME 6627.17
 ASCS PAYMENT 34002.00
 COOP DIVIDEND 190.13

Total
 Exp per lb
 1.50

TOTAL INCOME

389625.54

NET RANCH PROFIT

165,153.36

RANCH PROFIT AFTER CAPITAL

103954.36

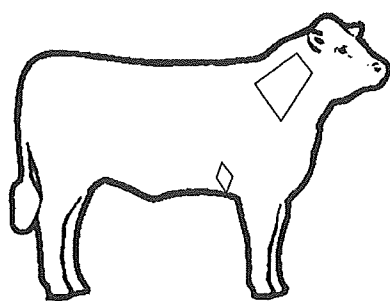
GROUP PROCESSING/TREATMENT MAP

When possible select SQ products and never give injection in the rear leg or top butt.

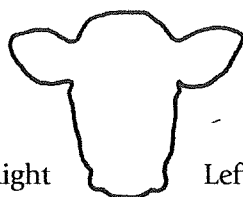
Date: _____ Time: _____ Number of Head: _____

In Weight (average/variation): _____ / _____ Breed: _____

Sex: S, H, Bulls/mixed ID: Right Ear of Left Ear/Group Number: _____

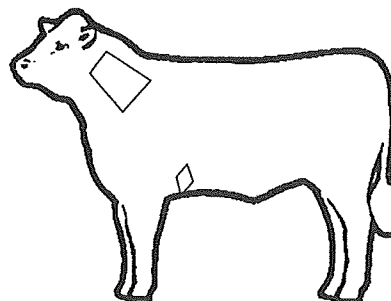


Right



Right

Left



Left

Product	Lot or Serial#	Company	Withdrawal Date	Route Admin	Dose	Booster Date	Crew Initials
1.							
2.							
3.							
4.							
5.							
6.							
7.							
8.							
9.							
10.							
11.							

VACCINE PROTOCOL

WORK	BULLS	COWS	1st CALF HEIFERS	REPLACEMENTS	CALVES
BEFORE TURN OUT DATE	BSExam - scrotal sperm motility-morphology				
BULLS OUT 22-Feb	Virashield 6VL5 HB Ultrabac 8 Valbazen & Cydectin Injectable PINK EYE VAC Retag/Brand				
SPRING WORK		MULTIMIN 90 Cydectin Pour on or Eprinex			Vision 20-20 w/ pink eye Vista 5 Cydectin Pour on Dehorn Tag ALL STEERS CASTRATED
Last week of March					Standguard Fly pour on
IPU BULLS 22-May	Standguard Fly pour on	Standguard Fly pour on	Standguard Fly pour on	Standguard Fly pour on	Standguard Fly pour on
BOOSTER CALVES					BOOSTER: Vision 8 Vista Once w/ pastuerella Maybe re-worm (price out)
CALVES SHIP END AUG					CALVES SHIP END AUG
WORK REPLACEMENTS					
1ST CALF HEIFERS					
Week after shipping					
FALL WORK mid Oct					
	Ivomec Plus	Palpate Retag age-body score-cull Ultra Bac 8 or Calvary 9 Virashield 6 VL5 HB Scour Bos 9 Double worm with Cydectin Injectable & Valbazen Lice Control - pour on MULTIMIN 90	Palpate Retag Virashield 6 VL 5 HB Scour Bos 9 Ivomec Plus Retag	Brucellosis Vaccine - Vet Virashield 6 VL 5 HB Ivomec Plus BRAND Retag	
		FOR BEST CULL PRICES PALPATE EARLY SEPTEMBER AND CULL			

Keep Micoatil - Draxxin - Resflor on hand
If Ivomec Plus not available must use Valbazen for liver flukes

RAINFALL

TY 2018

TOT

	JAN		FEB		MAR		APR		MAY		JUN		JULY		AUG		SEPT		OCT		NOV		DEC		TOT	
	TY	LY	TY	LY	TY	LY	TY	LY	TY	LY	TY	LY	TY	LY	TY	LY	TY	LY	TY	LY	TY	LY	TY	LY		
1																										
2																										
3																										
4																										
5																										
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31																										
T.Y.	0.850	2.90	4.60	3.60	6.76	2.75	3.35	5.75	2.01	10.75	2.11	8.90	2.45	2.65	0.650	6.26	7.80	0.20	3.20	16.35	3.20	3.60	0.60	9.90	9.60	60.43
L.Y.	2.90	3.60	3.60	3.34	3.87	2.75	5.75	3.80	4.51	10.75	8.90	2.65	2.65	2.55	6.26	3.23	3.45	0.20	3.20	4.90	4.44	0.60	4.16	9.60	57.16	
AVR	3.60	3.60	3.34	3.87	3.80	4.51	10.75	3.80	4.51	10.75	8.90	2.65	2.55	2.55	3.23	3.23	3.45	0.20	4.90	4.90	4.44	0.60	4.16	9.60	46.38	
TY YTD	0.85	2.90	4.60	3.60	6.76	2.75	3.35	5.75	2.01	10.75	2.11	8.90	2.45	2.65	0.650	6.26	7.80	0.20	3.20	16.35	3.20	3.60	0.60	9.90	9.60	60.43
AV YTD	0.85	2.90	4.60	3.60	6.76	2.75	3.35	5.75	2.01	10.75	2.11	8.90	2.45	2.65	0.650	6.26	7.80	0.20	3.20	16.35	3.20	3.60	0.60	9.90	9.60	60.43
YTD to AVR.	-1.49	-1.49	-1.49	-1.49	-1.49	-1.49	-1.49	-1.49	-1.49	-1.49	-1.49	-1.49	-1.49	-1.49	-1.49	-1.49	-1.49	-1.49	-1.49	-1.49	-1.49	-1.49	-1.49	-1.49	-1.49	-1.49
YTD to LY	-2.05	-1.05	-1.05	-1.05	-1.05	-1.05	-1.05	-1.05	-1.05	-1.05	-1.05	-1.05	-1.05	-1.05	-1.05	-1.05	-1.05	-1.05	-1.05	-1.05	-1.05	-1.05	-1.05	-1.05	-1.05	-1.05

Jan 16 - snow & sleet - freeze began
 Jan 17 - ice and 10 degree morn
 End of May temps over 100
 Another drought - little rain and over 100 degree temps
 Sept: THE WORST ARMY WORMS IN HISTORY
 Destroying what little grass we had left
 OCT MOST RAINFALL IN ANY ONE MONTH
 in our history
 OCT 31 - Tornado force winds - trees down - yard/roof damage

Cow-Calf Production Formulas

Pregnancy %	$\frac{\#Cows\ Bred}{\#Cows\ Exposed}$
Open %	$\frac{\#Cows\ Open}{\#Cows\ Exposed}$
Culling %	$\frac{\#Cows\ Culled}{Jan.1\ Cow\ Count}$
Calving %	$\frac{\#Live\ Calves}{\#Cows\ Bred}$
Weaning %	$\frac{\#Calves\ Weaned}{\#Cows\ Exposed}$

Pounds Weaned per cow exposed

$\frac{\text{Total weight of weaned calves}}{\text{cows exposed}}$

Calf Death Loss % $\frac{(\#Calves\ Palpated - \#Act.\ Calf\ Weaned)}{\#Calves\ Palpated}$
Abortion – Calving death – Live death

BREAK-EVEN COSTS FOR COW/CALF PRODUCERS

L.R. Sprott*

CALCULATING BREAK-EVEN COSTS of production can help cow/calf producers make better management decisions for the current year or for the near future.

By definition, break-even cost is the total cost of production divided by the total pounds of calf produced, whether marketed or retained. Another way to describe break-even is that it is the minimum sale price needed to recover all cash costs in a given year. The total cost of

production for a cow/calf operation must include all costs associated with the cow/calf enterprise.

To determine break-even, a producer must know or closely estimate three values:

- Annual costs (cash basis) of owning a cow. The value will vary from year to year and among different ranches. Use the value for your ranch and keep records of all costs to determine this value;
- Annual calf crop. In the following formulas, enter the value as a decimal number; for example: 90 percent = 0.9. Calculate calf crop by dividing the number of calves sold and retained as replacements in a year by the number of females exposed for breeding; and
- Average weaning or market weight of calves.

Using these three values, multiply the calf crop times the average weaning or market weight of calves sold and retained, and divide that number into the annual cash cost per cow to determine the break-even cost per pound of calf produced. The formula for break-even:

$$\frac{\text{annual cash cost per cow}}{\text{calf crop} \times \text{average weaning or market weight of calves sold and retained}} = \text{break-even cost per pound of calf produced}$$

Producers who know the market prices can determine the potential income per pound of calf by sub-

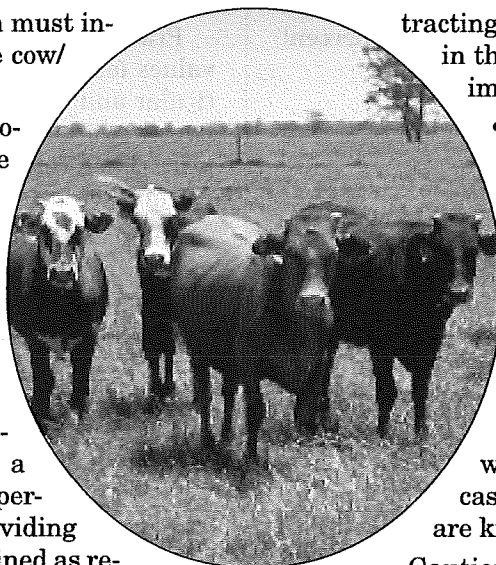
tracting the break-even cost. Adjustments in this formula can answer three other important questions:

- What are the maximum allowable cash costs per cow if calf crop, average weaning (or market) weight and market price are known?
- What is the minimum calf crop needed if annual cash costs, average weaning (or market) weight and market price are known?
- What is the minimum market weight needed if calf crop, annual cash costs per cow and market price are known?

Caution: When trying to answer these questions, producers who don't know some of the values will need to make estimates. For example, producers who pregnancy test their cows can estimate their next calf crop fairly closely by adjusting their pregnancy rates down by 1 to 3 percent (accounting for embryonic death loss and death before marketing). Estimate the average weaning or market weights by weighing calves, calculating the weight per day of age, and then projecting to the expected day of sale (or weaning).

If it is not possible to weigh calves, estimate the projected market weight by using an average daily gain

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for calves of 1.8 to 2.0 pounds per day. The problem with estimating market weight is that producers cannot predict variables such as weather, and hence available feed, which affects gain. Although estimating market prices is difficult, help is available from market specialists, order buyers and market reports. Obviously, dependable answers to the three questions above can be obtained only when close estimations (or actual values) of the variables in the formula are available.

What are the maximum allowable annual cash costs per cow?

To answer this question, rearrange the formula and multiply calf crop (as a decimal) by the average weaning (or market) weight of calves sold and retained; then multiply that number by the market price. The formula:

Calf crop x Average weaning or market weight of calves sold and retained x Market price = Maximum allowable annual costs per cow

Example: Assumes \$0.80 per pound market, 450 pound weaning (or market) weight and a 90 percent (0.9) calf crop

Annual cash costs per cow (maximum allowed under these conditions) = \$.80 x 450 x 0.9 = \$324 per cow

This formula obviously implies that high market prices afford a better chance at profit.

Less obvious is that when market prices are low, controlling costs can help increase the chances of profit. However, costs must be controlled in such a way that production is not sacrificed disproportionately. Sacrificing production is acceptable as long as the lost production's value is less than the reduction in cost. This can be accomplished by using practices known to have a moderate or high return rate, such as conducting annual pregnancy tests, vaccinating to control disease, providing adequate nutrition and using quality herd sires with genetics for growth.

What minimum calf crop is needed?

To answer this question, rearrange the formula again. Multiply the market price times the average weaning or market weight of calves sold and retained, and divide that number into the annual cash cost per cow. The formula:

$$\frac{\text{Annual cash cost per cow}}{\text{Market price} \times \text{Average weaning or market weight of calves sold and retained}} = \text{Minimum calf crop needed}$$

Example: Assumes \$250 annual cash cost per cow, 450 pound weight and \$0.80 per pound.

$$\text{Calf crop} = \frac{\$250}{\$0.80 \times 450} = 0.694, \text{ or } 69 \text{ percent}$$

This implies that even a marginal calf crop may be profitable under relatively high market prices, but lower market prices require a higher market weight, improved calf crop or lower annual production costs.

What minimum weaning (or market) weight is needed?

To figure the minimum weaning or market weight required to break even, multiply the market price by the calf crop, and divide that number into the annual cash cost per cow. The formula:

$$\frac{\text{Annual cash cost per cow}}{\text{Market price} \times \text{calf crop}} = \text{Minimum weaning or market weight to break even}$$

Example: Assumes \$250 annual cash cost per cow, \$0.80 per pound market price and 90 percent (0.9) calf crop.

$$\text{Average weaning (or market) weight} = \frac{\$250}{\$0.9 \times 0.80} = 347 \text{ pounds}$$

Practice using these formulas, entering different values for the variables. For instance, choose a particular annual cow cost and compare break-even between two different calf crops at the same market price. Then compare break-even between two different market weights at the same calf crop.

Tables 1 through 4 show various production scenarios at different market prices.

Remember: Heavier calves usually bring less per pound than lighter calves. For example, on a \$50/cwt market (see tables), not all calves are worth exactly \$50/cwt. Consequently, knowing an accurate price for each weight category is essential to determining an accurate value not shown in the tables.



Producers should pay particular attention to the pasture and range quality so that grazing is adequate in quality and quantity.

Table 1 shows break-even costs for 12 production scenarios and four annual cash costs per cow. Table 2 shows the calf crop percent needed to break even at different annual cash costs per cow and average calf weights of 350, 450 and 500 pounds. Table 3 lists the average calf market weight needed to break even at different annual cash costs per cow and calf crops of 70, 80 and 90 percent. Table 4 shows the maximum affordable annual cash costs per cow at different market weights and calf crops of 70, 80 and 90 percent.

Low production can be profitable only when annual cash costs per cow are low or market prices are high. A higher production level affords the best chance for profit even when annual cash costs are relatively high (more than \$200 per cow). Clearly, producers should work to ensure high production levels while keeping their annual cash costs as low as possible without unduly sacrificing calf crop and calf weights.

If a break-even analysis indicates that the calf crop is too low, producers should learn why. Poor nutrition, inadequate disease control and bulls of low fertility are usually the culprits. If calf weights are too low, the reason may be poor-quality sires with minimal genetics for growth, or nutrition so limited that cows produce too little milk to sustain or ensure calf growth.

Pay particular attention to pasture and range quality so that grazing is adequate in quality and quantity. Producers may need to adjust the stocking rate, particularly during drought. Test hay samples for quality, and provide feed supplements that supply what is absent in the hay. Remember that cows with calves need more nutrients than cows that have not yet calved.

Break-even analysis can be used as a starting point to determine possible shortcomings in production practices. For a more detailed analysis, use NCBA-IRM-SPA Cow Calf (SPA), a computer software package available through the Texas Agricultural Extension Service. It calculates not only break-even costs, but also a number of other variables much more useful in identifying problems missed by a simple break-even analysis.

The package can track a ranch's historic production costs and compare costs against regional and national averages. It also calculates a return on assets, which is needed by producers trying to compare returns of alternative investments. For more information on this program, call (409) 845-8012.

Acknowledgment

Appreciation is given to Dr. L.A. Lippke for his comments and editorial suggestions regarding this document.



If it is not possible to weigh calves, estimate the projected market weight by using an average daily gain for calves of 1.8 to 2.0 pounds per day.

Table 1. Break-even prices per pound of calf at 12 production levels and 4 annual cash costs per cow.

Calf crop percent/average market weight	Pounds of calf per cow	Annual cash costs per cow			
		\$100	\$200	\$300	\$400
90/600	540	\$0.19	\$0.37	\$0.56	\$0.74
90/500	450	\$0.22	\$0.44	\$0.66	\$0.89
90/400	360	\$0.28	\$0.56	\$0.83	\$1.11
90/300	270	\$0.37	\$0.74	\$1.11	\$1.48
80/600	480	\$0.21	\$0.42	\$0.63	\$0.83
80/500	400	\$0.25	\$0.50	\$0.75	\$1.00
80/400	320	\$0.31	\$0.63	\$0.94	\$1.25
80/300	240	\$0.42	\$0.83	\$1.25	\$1.67
70/600	420	\$0.24	\$0.48	\$0.71	\$0.95
70/500	350	\$0.29	\$0.57	\$0.86	\$1.14
70/400	280	\$0.36	\$0.71	\$1.07	\$1.43
70/300	210	\$0.48	\$0.95	\$1.43	\$1.90