

MARKETING ALTERNATIVES- RETAINED OWNERSHIP OF CALVES

MONTANA MARKET MANAGER PROGRAM-
SEPTEMBER, 2001 WORKSHOP

John M. Marsh

Montana State University

*Valuable comments were provided by Duane Griffith, Department of Agricultural Economics and Economics, and Janice Bowman, Department of Animal and Range Sciences, Montana State University.

I. General

1. Calves are retained beyond normal weaning period to obtain dollar *value* of weight gain.
2. Must weigh against dollar *cost* of weight gain. Provides for marketing flexibility.

3. Retained ownership options:

(a) Custom finish calves

(b) Ranch background-graze-sale

Ranch background-graze- custom
finish

(c) Custom background-sale

Custom background-finish

4. Factors to consider

- (a) Use of own resources—available facilities, labor supplies, feed supplies, management experience
- (b) Use of custom providers—distance, climate, reputation and management practices, cost charges, marketing arrangements
- (c) Tax liabilities
- (d) Profitability-revenues minus expenses (cash and noncash costs)
- (e) Net cash flow-cash inflows minus cash outflows
- (f) Budgeting—calculating expected revenues and expected costs of each alternative

4. Factors to consider (con't)

- (e) Opportunity costs, breakeven analysis (profitability and cash flow), and risk
- (f) Market discovery—sell cash, contracting, futures/options, grid pricing

5. Economic Principles

- (a) If projected extra returns exceed extra costs of alternatives then hold calves, or
- (b) If projected localized cattle price (associated with particular alternative) exceeds breakeven price or cost, then hold calves. Otherwise, sell calves.

5. Economic Principles (con't)

Risk must be dealt with. Can be handled through futures or options hedging. Requires basis information. If open ended (no hedge), need to add a cost or risk premium (such as one standard deviation of cattle price).

- Basis information-NCBA, Livestock Information Marketing Center (LMIC), commodity brokers
- Means and standard deviation of cattle prices (Table 1)

Table 1. Means and Standard Deviations of Cattle Prices, Months of January 2000-June 2001, Dollars/cwt.

Weights	Markets					
	Mont.	Colorado	Kansas	Oklahoma	Nebraska	Wash.
1. Feeders						
500-600 lbs	100.82 (3.44)	103.54 (5.26)	99.54 (4.39)	100.46 (4.82)		96.95 (3.20)
600-700 lbs	93.33 (2.61)	91.53 (3.25)	92.23 (2.81)	94.09 (2.76)	(NA)	89.62 (1.98)
700-800 lbs	86.02 (2.19)	87.20 (1.65)	87.43 (2.28)	88.22 (2.56)		83.51 (1.65)
2. Fed						
1100-1400lbs	(NA)	71.46 (4.95)	72.17 (4.92)	(NA)	71.79 (4.93)	70.90 (5.12)

Note: Mean or average prices are the top numbers and the standard deviations are in parentheses below each mean.

6. Planning

- Projection stage is critical in the holding decision. For example, if weaned calves can be contracted for sale with information about prices, projected returns and costs beyond weaning may determine the contract decision.
- Consider locking in prices at this time to cover risk
- In principle: expected value of weaned calf (opportunity cost), feed cost of gain, and expected value of yearlings will influence the retained ownership decision.
- Corn price movements are critical in selecting weight gain alternatives.

II. Retained Ownership Information

- Represent a typical producer, but difficult to match individual producers.
- Producer *situations* differ: location, forage quality, feed and labor constraints, breeding genetics, custom providers, financial status, experience, etc.
- Producer *expectations* differ: risk assessment, anticipated prices and costs, utilizing information, relationship with custom providers, etc.
- Flow diagram of alternatives for cow-calf producers, shown as 3 options:

Calves Weaned (mid October)

Option A

Custom Finish, 575 lbs.
(Oct 15-June 10)
235 days, 3 lbs/day
1280 lbs. end weight

Option B

Ranch Background, 525 lbs.
(Oct 15-May 1)
195 days, 0.75 lbs/day
671 lbs. end weight

Option C

Custom Background, 575 lbs.
(Oct 15-Feb 15)
120 days, 2.3 lbs./day
851 lbs. end weight

Sale

Summer Graze, 671 lbs.
(May 1-August 15)
105 days, 2.25 lbs./day
907 lbs. end weight

Custom Finish, 851 lbs.
(Feb 15-July 15)
150 days, 3.2 lbs./day
1331 lbs. end weight

Sale

Custom Finish, 907 lbs.
(Aug 15-Dec15)
120 days, 3.25 lbs./day
1297 lbs. end weight

Assumptions Made:

- Calves weaned in fall 2001, retained into year 2002. Prices reflect futures markets and costs reflects those of 2001.
- Option A-Producer owns calves, custom finish in Greeley, Colorado, distance of 600 miles.
- Option B-Producer owns calves, background on ranch at light rate of gain, summer graze on ranch, custom finish in Greeley, Colorado, distance of 600 miles.

Assumptions Made (con't)

- Option C-Producer owns calves, custom background and custom finish in Greeley, Colorado, distance of 600 miles. (Other alternative could be background calves on wheat pasture in Kansas/Oklahoma, custom finish in that region, distance 1,100 miles).
- Interest charges in budgets are implicit costs since producer uses own funds (money not borrowed). Interest charges are for calf/yearling, $\frac{1}{2}$ feed, and medical.

- Selling finished cattle:
 - liveweight (average lot)
 - carcass grade and weight (average lot)
 - grid pricing (individual carcasses)
- Liveweight hedge:

$$P_{\text{CME}}^{\text{futures}} + \text{expected local basis} = \text{expected local sale or lock-in price}$$

Thus, if calves were custom finished in Greeley Colorado, to be sold in June, expected sale price is:

$$\$74.50/\text{cwt} + (-\$0.50/\text{cwt}) = 74.00/\text{cwt}$$

June live cattle futures (CME)	June Greeley basis	Expected June Greeley price
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- Basis information available from the Livestock Marketing Information Center (LMIC), Lakewood, Colorado. Contact Duane Griffith or Kevin McNew in the Department of Agricultural Economics and Economics, Montana State University.

- Principle: if expected sale or lock-in price exceeds breakeven cost, then consider retained ownership. Thus, if breakeven cost of custom finishing calves is \$72.50/cwt \Rightarrow

\$74.00/cwt lock-in minus \$72.50/cwt breakeven = \$1.50 cwt return

\$1.50/cwt return x 12.80 cwt (sale weight) = \$19.20/head, which is a return to ownership risk.

III. Budgeted Alternatives

- Expected or forecasted prices of feeders and fed cattle are based on futures markets adjusted for basis.
- Costs of custom backgrounding and finishing based on information of Western Kansas, Montana, and Colorado feedlots in year 2001.
- In dealing with feedlots about custom services, how costs are itemized are important.
 - Expected costs should be based on individual feedlot information.

III. Budgeted Alternatives (con't)

- Individual producers may treat some costs differently than in the following budgets. There are variable and fixed (out of pocket) cash costs as well as implicit (not out of pocket) costs. For example, feed cost and yardage charges are cash costs while interest charge on an owned calf is an implicit cost.
- If individual producers utilize own facilities, rather than custom lots, cost estimates may differ.

Option A. Finishing Calves in Greeley (575 lbs to 1280 lbs.), October 15-June 10.

	<u>Costs</u>		<u>Revenue</u>	
	<u>Price</u>	<u>\$/head</u>	<u>Price</u>	<u>\$/head</u>
1. Value Calf (575lbs) Transportation (600 miles) ($\$2 \times 600 \text{ miles} \div 500 \text{ cwt} \times 5.75 \text{ cwt}$)	\$98/cwt \$2/mile	563.50 13.80	\$74/cwt (finished steer in June)	947.20 (1280 lbs.)
2. Feed cost of gain (235 days \times 3.0 lbs \times \$.33)	\$33/cwt	232.65		
3. Yardage ($\$0.28 \times 235 \text{ days}$)	\$0.28/hd/day	65.80		
4. Interest calf + 1/2 feed ($0.085 \times \$563.50 \times 8/12$) + ($0.085 \times \$232.65 \times .5 \times 8/12$)	8.5%	38.52		

Option A. Finishing Calves in Greeley (575 lbs to 1280 lbs.), October 15-June 10. (con't)

	<u>Costs</u>		<u>Revenue</u>	
	<u>Price</u>	<u>\$/head</u>	<u>Price</u>	<u>\$/head</u>
5. Medical and processing (interest on medical)		10.00 0.57		
6. Death loss (1.5% average) (.015)($\$563.50 + \947.20) $\div 2$		11.33		
7. Marketing (net shrink, 1.5%) ($0.015 \times \$947.20$)		14.21		
8. Total costs (add lines 1-7)		\$950.38		
9. Total Revenue (line 1)		\$947.20		

Option A. Finishing Calves in Greeley (575 lbs to 1280 lbs), October 15-June 10. (con't)

	<u>Costs</u>		<u>Revenue</u>	
	<u>Price</u>	<u>\$/head</u>	<u>Price</u>	<u>\$/head</u>
10. Return over costs (line 9-line 8) Less interest		-\$3.18 \$35.91		
11. Breakeven cost (line 8 ÷ 1280 lbs.) Less interest	\$74.25/cwt \$71.19/cwt			
12. Total cost of gain (line 8 – line 1) ÷ 705 lbs. gain Less interest	\$54.88/cwt \$49.33/cwt			

Option B. Ranch Background Calves and Graze (525 lbs to 907lbs), October 15-August 15

	<u>Costs</u>		<u>Revenue</u>	
	<u>Price</u>	<u>\$/head</u>	<u>Price</u>	<u>\$/head</u>
1. Value calf (525 lbs) No transportation	\$105/cwt	551.25	\$80/cwt (yearling in August)	725.60 (907 lbs.)
2. Feed cost of gain (16.5 lbs/day of hay) (195 days × 0.75 lbs. × \$0.90 lb. feed cost of gain)	Alfalfa hay, \$100/ton Grass hay, \$80/ton	131.63		

Option B. Ranch Background Calves and Graze (525 lbs to 907 lbs), October 15-August 15 (con't)

	<u>Costs</u>		<u>Revenue</u>	
	<u>Price</u>	<u>\$/head</u>	<u>Price</u>	<u>\$/head</u>
3. Interest calf + ½ feed ($0.085 \times \$551.25 \times 7/12$)+ ($0.085 \times \$131.63 \times .5 \times 7/12$)	8.5%	30.59		
4. Medical and processing (interest medical)		10.00 0.50		
5. Death loss (1.0% average) (.010) ($\$551.25 + \725.60) ÷ 2		6.38		
6. Grazing ($.7 \times \$15\text{AUM} \times 3.5$ months)	\$15 AUM (0.7 stocker factor)	36.75		

Option B. Ranch Background Calves and Graze (525 lbs to 907 lbs) October 15-August 15(con't)

	<u>Costs</u>		<u>Revenue</u>	
	<u>Price</u>	<u>\$/head</u>	<u>Price</u>	<u>\$/head</u>
7. Marketing (net shrink, 1.5%) (0.015 × \$725.60)		10.88		
8. Total costs (add lines 1-7)		\$777.98		
9. Total revenue (line 1)		\$725.60		
10. Return over costs (line 9-line 8)		-\$52.38		
Less interest		-\$21.29		
11. Breakeven cost (line 8 ÷ 907 lbs.)	\$85.78/cwt			
Less interest	\$82.35/cwt			
12. Total cost of gain (line 8 – line 1) ÷ 382 lbs. gain	\$59.35/cwt			
Less interest	\$51.21/cwt			

Option B. Custom Finish Yearlings in Greeley (907 lbs to 1297 lbs), August 15-December 15 (con't)

	<u>Costs</u>		<u>Revenue</u>	
	<u>Price</u>	<u>\$/head</u>	<u>Price</u>	<u>\$/head</u>
13. Value yearling (907 lbs) Transportation (600 miles) ($\$2 \times 600 \text{ miles} \div 500 \text{ cwt} \times 9.07 \text{ cwt}$)	\$80/cwt \$2/mile	\$725.60 21.77	75/cwt (finished steer in December)	972.75 (1297 lbs.)
14. Feed cost of gain (120 days \times 3.25 lbs \times \$.34)	\$34/cwt	132.60		
15. Yardage ($\$0.28 \times 120 \text{ days}$)	\$0.28/hd/day	33.60		
16. Interest yearling + 1/2 feed ($0.085 \times \$725.60 \times 4/12$) + ($0.085 \times \$132.60 \times .5 \times 4/12$)	8.5%	22.43		

Option B. Custom Finish Yearlings in Greeley (907 lbs to 1297 lbs), August 15-December 1 (con't)

	<u>Costs</u>		<u>Revenue</u>	
	<u>Price</u>	<u>\$/head</u>	<u>Price</u>	<u>\$/head</u>
17. Medical and processing (interest on medical)		8.00 0.23		
18. Death loss (0.7% average) (0.007) (\$725.60 + \$990.75) / 2		5.94		
19. Total costs (add lines 13-18)		\$950.17		
20. Total revenue (line 13)		\$972.75		
21. Return over costs (line 20 – line 19) Less interest		\$22.58 (with -\$52.38/hd grazing, net loss of \$29.80/hd) \$45.24		

Option B. Custom Finish Yearlings in Greeley (907 lbs to 1297 lbs), August 15-December 1 (con't)

	<u>Costs</u>		<u>Revenue</u>	
	<u>Price</u>	<u>\$/head</u>	<u>Price</u>	<u>\$/head</u>
22. Breakeven cost (line 19 ÷ 1297 lbs.) Less interest	\$73.26/cwt \$71.51/cwt			
23. Total cost of gain (line 19 – line 13) ÷ 390 lbs. gain Less interest	\$57.58/cwt \$51.77/cwt			

Option C. Custom Background Calves in Greeley (575 lbs to 851 lbs) October 15-Feb 15

	<u>Costs</u>		<u>Revenue</u>	
	<u>Price</u>	<u>\$/head</u>	<u>Price</u>	<u>\$/head</u>
1. Value calf (575 lbs) Transportation (600 miles) ($\$2 \times 600 \text{ miles} \div 500 \text{ cwt} \times 5.75 \text{ cwt}$)	\$98/cwt \$2/mile	563.50 13.80	\$86/cwt (short yearling in February)	731.86 (851 lbs.)
2. Feed cost of gain (120 days \times 2.3 lbs \times \$.31)	\$31/cwt	85.56		
3. Yardage ($\$0.28 \times 120 \text{ days}$)	\$0.28/hd/day	33.60		
4. Interest calf + 1/2 feed ($.085 \times \$563.50 \times 4/12$) + ($.085 \times \$85.56 \times .5 \times 4/12$)	8.5%	17.18		

Option C. Custom Background Calves in Greeley
 (575 lbs to 851 lbs) October 15-Feb 15 (con't)

	<u>Costs</u>		<u>Revenue</u>	
	<u>Price</u>	<u>\$/head</u>	<u>Price</u>	<u>\$/head</u>
5. Medical and processing (interest on medical)		8.00 0.23		
6. Death loss (1.5% average) (.015) (\$563.50 + \$731.86) / 2		9.72		
7. Marketing cost (net shrink, 1.5%) (0.015 × \$731.86)		10.98		
8. Total Costs (add lines 1-7)		\$742.57		

Option C. Custom Background Calves in Greeley (575 lbs to 851 lbs) October 15-Feb 15 (con't)

	<u>Costs</u>		<u>Revenue</u>	
	<u>Price</u>	<u>\$/head</u>	<u>Price</u>	<u>\$/head</u>
9. Total revenue (line 1)		\$731.86		
10. Return over costs (line 9-line 8) Less interest		-\$10.71 \$6.70		
11. Breakeven cost (line 8 ÷ 851 lbs) Less interest	\$87.26 cwt \$85.21/cwt			
12. Total cost of gain (line 8 – line 1) ÷ 276 lbs. gain Less interest	\$64.88/cwt \$58.57/cwt			

Option C. Custom Finish Yearlings in Greeley (851 lbs to 1331 lbs), Feb 15-July 15 (con't)

	<u>Costs</u>		<u>Revenue</u>	
	<u>Price</u>	<u>\$/head</u>	<u>Price</u>	<u>\$/head</u>
13. Value yearling (851 lbs) (no transportation-same lot)	\$86/cwt	731.86	\$74/cwt (finished Steer in July)	984.94 (1331 lbs.)
14. Feed cost of gain (150 days \times 3.2 lbs. \times \$.34)	\$34/cwt	163.20		
15. Yardage (\$.28 \times 150 days)	\$0.28/hd/day	42.00		
16. Interest yearling + 1/2 feed (0.085 \times \$731.86 \times 5/12) + (0.085 \times \$163.20 \times .5 \times 5/12)	8.5%	28.83		
17. Medical and processing (extra) (interest on medical)		2.00 .07		

Option C. Custom Finish Yearlings (851 lbs to 1331 lbs), Feb 15-July 15 (con't)

	<u>Costs</u>		<u>Revenue</u>	
	<u>Price</u>	<u>\$/head</u>	<u>Price</u>	<u>\$/head</u>
18. Death loss (0.7% average) (0.007) (\$731.86 + \$984.94) / 2		6.01		
19. Marketing (net shrink, 1.5%) (0.015 × \$984.94)		14.77		
20. Total costs (add lines 13-19)		\$988.74		
21. Total revenue (line 13)		\$984.94		
22. Return over costs (line 21 - line 20)		-\$3.80		
Less interest		\$25.10		

Option C. Custom Finish Yearlings (851 lbs to 1331 lbs), Feb 15-July 15 (con't)

	<u>Costs</u>		<u>Revenue</u>	
	<u>Price</u>	<u>\$/head</u>	<u>Price</u>	<u>\$/head</u>
23. Breakeven cost (line 20 ÷ 1331 lbs)	\$74.29/cwt			
Less interest	\$72.11/cwt			
24. Total cost of gain (line 20 – line 13) ÷ 480 lbs. gain	\$53.52/cwt			
Less interest	\$47.50/cwt			

IV. Conclusions

1. Partial budgets, breakeven analysis, and profit potential are based on market prices, costs, and assumptions made. Producers can use budget format for estimating retained ownership returns based on personal projections of prices, costs, rates of gain, etc.
2. High opportunity costs of calves limit profit potential of retained ownership, even with low costs of gain.
3. Some economists are forecasting higher fed cattle prices in 2002 than indicated by current futures markets (\$2-\$4/cwt higher). This difference changes profit potential of finishing alternatives. Options trading may play a role here.

IV. Conclusions (con't)

4. Recommendations by economists and feedyards for retained ownership (particularly finishing) are to take a long-term view as it fits in with value-based marketing. Jumping in and out of retained ownership year-over-year (because of anticipated prices) is costly. This may yield less returns than if a consistent marketing program of either selling calves or retained ownership was pursued.
5. Locking in corn prices with futures/options to keep down cost of gain should be considered.