

ECONOMICS OF TIME OF CALVING AND FEEDING STRATEGY

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Introduction

Calving date is a management decision producers need to consider carefully. Shifting calving date from early spring (March) to early summer (June) is seen as a way to reduce production costs because pasture quality can meet a cow's highest nutritional requirements (Adams et al. 1996, Adams et al. 1994). June's moderate weather should allow for less monitoring during calving, resulting in lower labour costs. But changing calving date alters timing for the entire production chain. How do different weights and dates impact finishing and marketing options for cow-calf producers and cattle feeders?

Objective

A three-year study carried out by AAFC research stations in Brandon, MB and Swift Current, SK and the WBDC Termuende Research Ranch near Lanigan, SK between 2007-2010 evaluated the production performance and economics associated with marketing March-born or June-born steer calves at different points during the production cycle, and under different finishing programs. In a previous fact sheet ([2012.01](#)), production results were reported. Now, in this fact sheet, results from the economic evaluation are shared.

Approach

Animal Management

Steer calves born in March (early) or June (late) of 2007 and 2008 from the three-site, time-of-calving study were weaned at approximately 205 days of age - October (for March-born calves) and January (for June-born calves). The steers (124 in 2007, 157 in 2008) were shipped to Brandon, MB following weaning and placed on a diet of good quality grass/alfalfa hay for approximately one month before being allocated to a finishing program (rapid or slow finish) (see [WBDC 2012.01](#)).

Rapid Finish

March- and June-born steers allocated to the rapid-finish program were backgrounded for 14 weeks (2.2 lb average daily gain (ADG)) before transitioning to a high-percentage barley grain finishing diet.

Slow Finish

March- and June-born steers allocated to the slow-finish program were backgrounded (1.5 lb ADG) until pasture turn-out in June. The animals grazed grass/alfalfa pasture for eight weeks and then swath grazed (oats or triticale) for eight weeks. The steers were then transitioned on to a high-percentage barley grain finishing diet.

Economic Analysis

In this study, the steers were all sold as fed cattle; however, economic analysis at each potential point of sale has been conducted to show cost of gain, starting and ending market values, and margins for each stage of the production cycle. Four stages examined: sell at weaning, sell after backgrounding, sell after grassing, or sell as fed cattle. There were four groups of steers analyzed: March-born rapid finish, March-born slow finish, June-born rapid finish, and June-born slow finish.

Cost of Gain & Break-Even

The break-even price for the weaned steer calves is calculated from the cow-calf production costs calculated for the time-of-calving study (see Sirski 2012; Girardin 2011). The cost of gain included feed, mineral/salt, vet/medicine, labour, and yardage costs for the feeding that occurred at Brandon, MB. Total costs were divided by the total pounds gained to arrive at cost of gain in dollars per pound. Table 1 shows the \$/hd cost of gain/break-even for each production phase.

Market Values

Starting and ending market values were estimated for each production phase: weaned calf, back-grounder, grasser, and fed steer. Average weights over the two-year study were used for market price estimation. Estimated values were based on five-year (2005-2009) average monthly steer prices for MB. Actual weight class price spreads were used for slide adjustments on the feeder steers.

Results and Discussion

Table 1 shows the average weight, month, and market value for the steers as they enter and exit each feeding stage. The cost of gain and estimated market value are used to calculate margins for each stage – backgrounding, grassing, finishing.

Losses occurred in each feeding phase; some steer groups had positive margins for a feeding phase while others had negative margins. The finishing phase had the greatest variation in margins, ranging from a net gain of \$3 per head (March-born, slow finish) to a loss of \$173 per head (June-born, rapid finish). From backgrounder to finished steer, the net losses ranged from \$11-165 per head.

A comparison of the margins suggests March-born calves, weaned at 205 d of age, backgrounded till June, grassed till October, and then put on a finishing ration until finished (8 mm backfat) had the best profit potential (least negative margins). However, steers in this feeding program were the oldest at slaughter (21 months of age).

The June-born steers in the rapid-finish program had the worst margins of all four management groups. These steers had the lightest weights going into the finishing feedlot (761 lb) and, therefore, required the longest number of days on feed (187 d) to finish.

There is no one approach to feeding and finishing cattle. In the feeding trials conducted for this study, the results suggest that overall March-born steers have better margins compared to the June-born steers, regardless of finishing program. The slow-finish steers had better margins than the rapid-finish steers (for both March- and June-born animals), suggesting it might be cost advantageous to grass steers to 1000 lb before transferring them onto a finishing diet. Grassing the steers did increase their average age at slaughter from 14.5 months for the rapid-finish steers, to 20 months for slow-finish steers. Canada exports into markets with an under 21-month of age requirement, so we do need steers in a rapid-finish program to meet those age requirements.

Returns can vary greatly from year to year due to changes in market and feed prices. For analysis here, four-year average live prices were used to diffuse these price variations. The 2006-2009

timeframe used in this analysis corresponds with a period of depressed prices for the cattle industry. Replicating the analysis with more favorable prices from recent years (2010-12) did alter margins, but not the general findings. The grassed steers (slow-finish) still had better margins overall.

Similarly, if grid pricing had been used for the market-value estimation rather than live price, premiums and discounts for grade, yield, and carcass weight would have influenced the market price. The slow-finished steers had higher dressed percentages, and more steers graded AAA with Yield Grade 1, compared to the rapid-finished steers. Given these carcass yield and quality results, the slow-finished steers would have had better rail prices than the rapid-finished steers and relative margins would have shown similar results.

Table 1. Gain in Value and Cost of Gain from Weaned Calf to Finished Steer, Manitoba (2007-2010).

	March-born		June-born	
	Rapid Finish	Slow Finish	Rapid Finish	Slow Finish
Steers Sold at Weaning				
Weaning Weight (in lbs)	600		529	
Month Weaned	October		January	
Est. Calf Value (\$/hd)	\$631		\$563	
Break-Even Calf Price (\$/hd)	\$771		\$767	
Margin (\$/hd)	(\$140)		(\$204)	
Steers Sold after Backgrounding				
Weight in (lbs)	623	620	568	576
Weight out (lbs)	798	963	761	779
Month in/out	Nov/Feb	Nov/Jan	Feb/Apr	Feb/Jan
Days on Feed	84	227	84	135
Est. Ending Value (\$/hd)	\$765	\$866	\$775	\$792
Est. Starting Value (\$/hd)	\$634	\$631	\$645	\$654
Cost of Gain (\$/hd)	\$131	\$265	\$122	\$167
Margin (\$/hd)	(\$0)	(\$30)	\$8	(\$29)
Steers Sold after Grazing				
Weight in (lbs)	963		779	
Weight out (lbs)	1079		939	
Month in/out	Jun/Oct		Jun/Oct	
Days on Feed	106		106	
Est. Ending Value (\$/hd)	\$972		\$854	
Est. Starting Value (\$/hd)	\$866		\$792	
Cost of Gain (\$/hd)	\$90		\$90	
Margin (\$/hd)	\$16		(\$28)	
Finished Steers				
Weight in (lbs)	798	1079	761	939
Weight out (lbs)	1206	1582	1385	1428
Month in/out	Feb/May	Oct/Jan	Apr/Oct	Oct/Jan
Days on Feed	124	111	187	134
Est. Ending Value (\$/hd)	\$1,043	\$1,303	\$1,094	\$1,145
Est. Starting Value (\$/hd)	\$765	\$972	\$775	\$854
Cost of Gain (\$/hd)	\$294	\$328	\$492	\$390
Margin (\$/hd)	(\$16)	\$3	(\$173)	(\$99)
Cumulative Margin (\$/hd)	(\$16)	(\$11)	(\$165)	(\$156)

¹The cumulative margin is the sum of the margins for the three feeding phases – backgrounding, grassing and finishing - and does not include the margin from the cow-calf phase

Conclusions

The results of the current study demonstrate the varied effects of calving season on post-weaning performance and market timing. The longer backgrounding period for the slow-finished steers did have reduced daily gains, but the finished weights were higher. When costs and market values are considered, the slow-finished steers had better overall margins due to lower weight cost gain on grass offsetting the number of higher-cost finishing days required. With every management decision, there is no "one approach fits all." What was a profitable strategy last year, may not be profitable this year. Cow-calf producers need to assess calving time and retained ownership strategies in conjunction with cost of gain and market timing.

Acknowledgements

WBDC would like to acknowledge funding for this study from the Saskatchewan Ministry of Agriculture's Agriculture Development Fund, Saskatchewan Cattle Marketing Deductions Fund, and Horned Cattle Purchases Fund.

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