

The Effect of Calving Systems on Cow and Calf Performance in Western Canada

Lynne Girardin, Alan Iwaasa, Bart Lardner, Shannon Scott, Steve Hendrick

Overview

- Late calving systems are shown to have lower calf performance from birth to weaning.
- Number of calves weaned per system was lower for Late-Calving System.
- Cow reproductive efficiency was not affected by calving system when measured by calving span and calving rate. Cow body condition was different between Early- and Late-Calving Systems from start of breeding season to weaning.

Objectives

- Evaluate calf performance between two calving systems (March vs. June) at three locations in western Canada. Locations are Brandon, MB; Swift Current, SK and Lanigan, SK.
- Evaluate cow performance and reproductive efficiency of animals managed in two calving systems: Early (March) and Late (June)

Calf Performance

Weaning rate was higher for the Early-Calving System compared to the Late-Calving System, but not significantly different (Figure 1). At all locations, weaning rates were consistently higher for the Early-Calving System than the Late-Calving System (Figure 1).

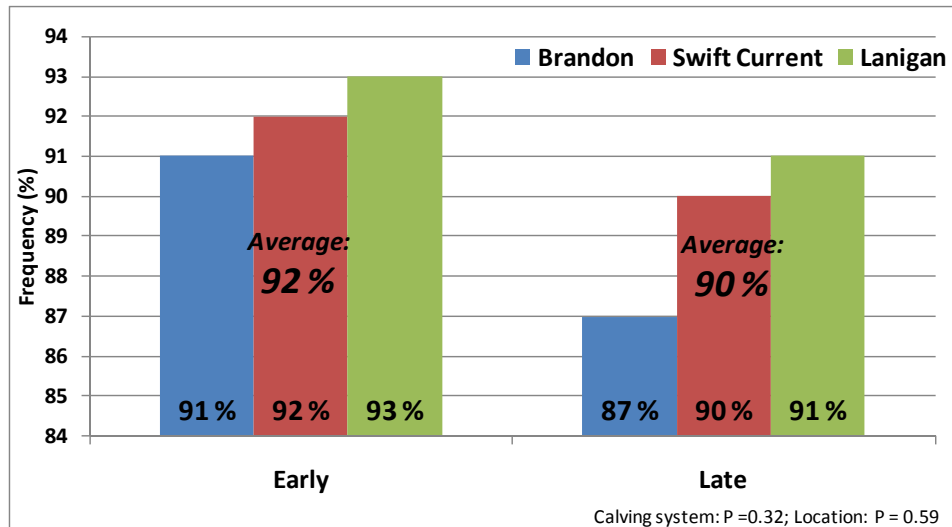


Figure 1. Weaning rate for Early- and Late-Calving Systems for 2007 and 2008.

SCalf average daily gain (ADG) was higher for the Early-Calving system than the Late-Calving System, 2.5 and 2.1 lb/day respectively (Figure 2). Cows at Lanigan consistently weaned more calves in both calving systems (Figure 1), but these calves had lower ADG compared to calves at other locations (Figure 2).

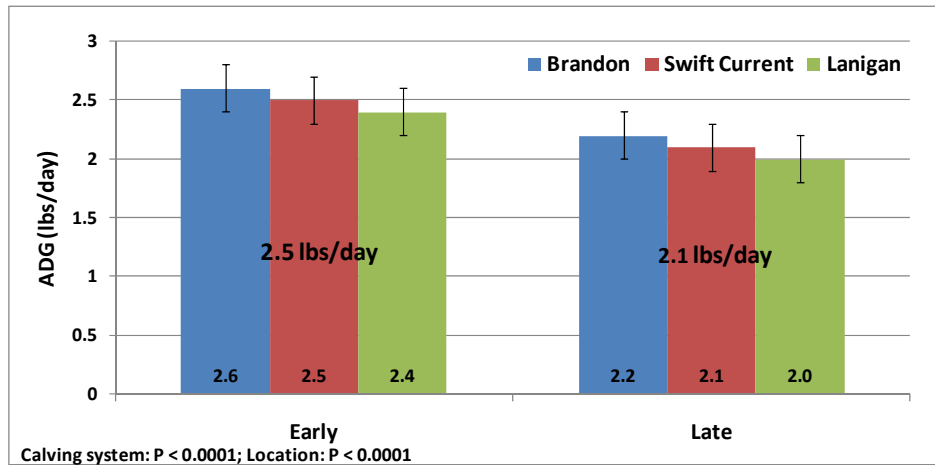


Figure 2. Calf average daily gain (ADG) for Early- and Late-Calving Systems.

Cow Performance

Throughout the year, cows in both calving systems had a body condition score (BCS) ranging from 3 to 4 (Figure 3). Body condition for cows in the Late calving system varied more than cows in the Early calving system, but was not different from two weeks prior to calving (Pre-calving BCS) to the beginning of the breeding season. From the start of breeding season to when calves were weaned, BCS for cow in the Early -Calving System increased slightly (+0.03 BCS) compared to cows in the Late-Calving System where BCS decreased in the same time period. Overall, cow body condition change from calving to weaning varied slightly.

Total number of days from first-calf-born to last-calf-born (calving span) was lower for cows in Late-Calving system compared to cows in Early-Calving System (55 and 58 days, respectively). Calving rate (number of cows that calved divided by number of cows exposed during breeding season) was not different between Early and Late calving systems 95% and 94%, respectively.

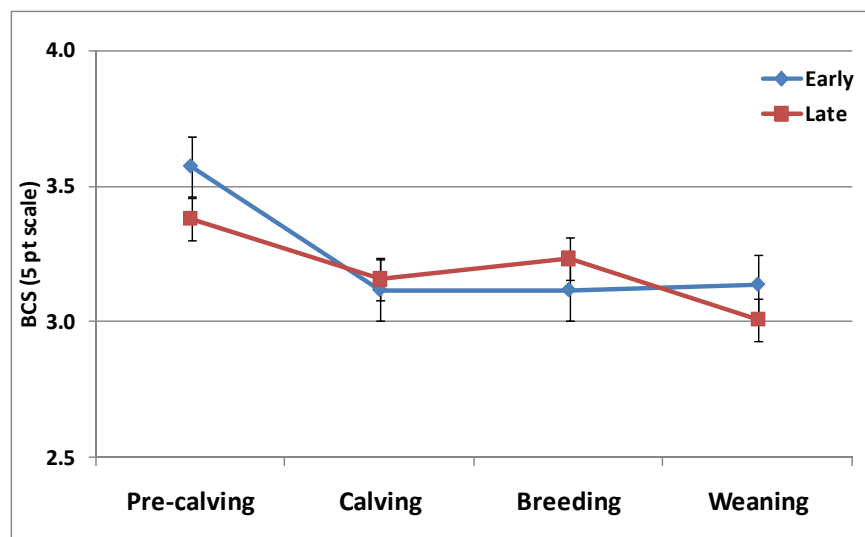


Figure 3. Comparison of cow body condition score (BCS) between Early- and Late-Calving Systems.

Cows in the Early-Calving System weaned more pounds of calf compared to cows in the Late-Calving System for both years of the study, which resulted in a difference of 110 pounds of calf weaned (Table 1). The ratio was consistent for Brandon, Swift Current and Lanigan.

| | Early | Late | Difference |
|----------------------|--------------|-------------|-------------------|
| Pounds weaned | 557 | 447 | -110 |

Summary

Calf growth rate was significantly affected by location and calving system (Figure 2), but calf weaning rate was only numerically higher for calves in the Early-Calving System compared to calves in the Late-Calving System. Over the two years of the study, cows in the Early-Calving System consistently weaned more pounds of calf per cow exposed. Calf performance (average daily gain) was lower for calves in the Late-Calving System compared to calves in the Early-Calving System. In this study, cow reproductive efficiency was not affected by calving system. Decreased cow body condition was observed from breeding to weaning for cows in the Late-Calving System may be a result of the cold weather conditions experienced while having to support a nursing calf.

Acknowledgments

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The effects of early and late calving systems on the economics of cow-calf production in Western Canada

Tanis Sirski, Shannon Scott, Alan Iwaasa, Bart Lardner, Derek Brewin, and Sandy Russell

Overview

- Studies have shown that later calving systems can reduce production costs for cow-calf producers by decreasing feeding costs.
- Increasing the days in pasture, bale grazing or swath grazing feeding systems and reducing the days in a drylot has shown to reduce total costs. Calving in June has shown to reduce the number of days in a drylot system and increase the days on pasture or bale and swath grazing systems.

Objectives

- Calculate the total cost per cow of two calving systems (March vs. June) at 3 locations in western Canada; Brandon, MB, Swift Current, SK and Lanigan SK.

System Costs

Production costs throughout the 2007 and 2008 year were broken up into four feeding systems; drylot, bale grazing, swath grazing and pasture. Days on each feeding system (Fig. 1) were multiplied by the cost determined for the feeding system.

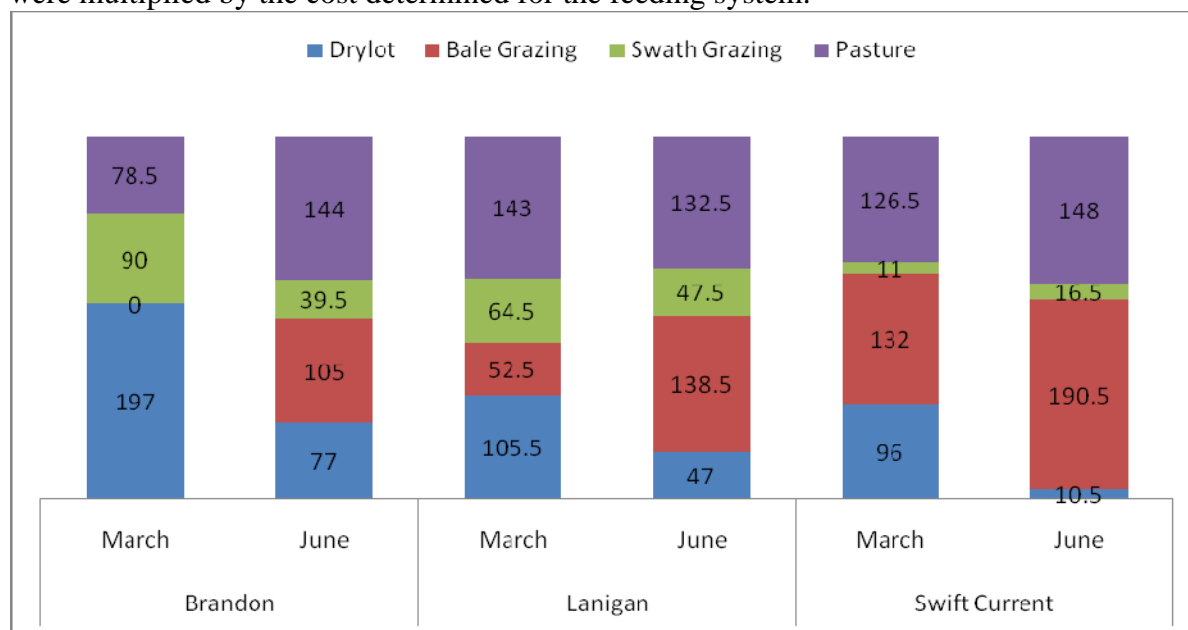


Figure 1. Days in each feeding system averaged over two years (2007 and 2008). June calving reduced the total number of days in a drylot feeding system. Days on feed in the drylot at Brandon, Lanigan and Swift Current, decreased by 120, 58.5 and 85.5 days respectively.

Costs incurred in each calving system included feed, pasture, labour, equipment, fuel, land, chemical, fertilizer, veterinarian services, medication, salt and mineral, breeding, taxes, water, marketing, freight and operating interest.

Labour was calculated using \$15.00 per hour. Equipment operating rates were determined based on Saskatchewan Ministry of Agriculture *Farm Machinery Custom and Rental Guide*. A rate of \$0.80 per head per day was used as the pasture rate with labour, equipment use and supplement as additional cost at each location. Costs for salt, mineral, taxes, water and freight were based on industry prices provided by Manitoba Agriculture Food and Rural Initiatives and Saskatchewan Ministry of Agriculture. Marketing costs were based on each provinces check-off program.

Feed costs were based on the actual price paid for each unit of feed multiplied by the actual units fed at each location and allocated to the feeding system. When a feeding system was supplemented by additional feedstuffs (eg. Hay bales on pasture), those costs were assumed by the feeding system.

Total costs for the June calving system were reduced compared to the March calving system (Tables 1 and 2). The average difference was 11% reduced total costs for June calving compared to March calving across all three locations.

Table 1. Total costs of March and June calving systems averaged over two years (2007 and 2008)

| Site | March | June | % Change | Number of head per group |
|---------------|--------------|--------------|----------|--------------------------|
| Brandon | \$ 49,520.94 | \$ 41,390.42 | -16.42% | 66 |
| Lanigan | \$ 27,997.82 | \$ 27,872.90 | -0.45% | 51 |
| Swift Current | \$ 19,677.94 | \$ 17,223.52 | -12.47% | 31 |

Table 2. Costs of feeding systems averaged over two years (2007 and 2008)

| | Brandon | | | Lanigan | | | Swift Current | | |
|----------------------------------|---------|----------------|----------------|---------|----------------|----------------|---------------|----------------|----------------|
| | March | June | % Change | March | June | % Change | March | June | % Change |
| Feeding System Costs (\$/hd/day) | | | | | | | | | |
| Drylot | \$ 2.74 | \$ 2.70 | -1.46% | \$ 2.25 | \$ 1.96 | -12.89% | \$ 2.62 | \$ 1.80 | -31.30% |
| Bale Grazing | \$ - | \$ 2.19 | | \$ 1.71 | \$ 1.86 | 9.09% | \$ 1.65 | \$ 1.73 | 4.86% |
| Swath Grazing | \$ 1.44 | \$ 1.20 | -16.38% | \$ 1.30 | \$ 1.36 | 4.23% | \$ 3.12 | \$ 1.32 | -57.69% |
| Pasture | \$ 1.09 | \$ 1.05 | -3.23% | \$ 0.99 | \$ 1.05 | 5.56% | \$ 1.16 | \$ 1.22 | 5.17% |
| Total Costs | \$ 2.25 | \$ 1.91 | -15.11% | \$ 1.92 | \$ 1.90 | -1.30% | \$ 2.15 | \$ 1.90 | -11.86% |
| Other Costs* | | | | | | | | | |
| Other Costs* | \$ 0.39 | \$ 0.35 | -10.26% | \$ 0.42 | \$ 0.40 | -4.76% | \$ 0.42 | \$ 0.35 | -16.67% |
| Total Production Cost | \$ 2.64 | \$ 2.26 | -14.39% | \$ 2.34 | \$ 2.30 | -1.92% | \$ 2.57 | \$ 2.25 | -12.65% |

*Includes mineral, salt, vet & med, breeding, taxes, water, trucking, marketing costs, and operating interest.

Summary

Total production costs were lower in a June calving system compared to a March calving system. Increasing the number of days on pasture or grazed forages has shown to reduce overall costs. The June calving system has shown to reduce the amount of time required in a drylot, therefore reducing the impact of this higher cost feeding system on total costs. Over the 2 years of this study, the average cost per head per day of June calving cows is less than the March calving cows. Marketing options and calf prices also need to be considered when making the decision to change calving seasons. Weather, feed supply, pasture condition and labour constraints are also contributing factors.

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