

When is the Best Time to Calve Beef in Wisconsin?

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Summary

Deciding when to calve beef cows in Wisconsin depends upon two things:

- the market for the animal raised
- and/or the farm's resources (environment and facilities)

Management of the breeding season, body condition scores (nutrition), herd vaccination programs and neonatal care are all required for a successful calving season regardless of the time chosen. Partial Budgeting is as a financial tool to use when considering a change in calving season. Equipment used during the calving season must also be prepared.

Calving sets the cycle of breeding and husbandry tasks. Keep personal lifestyle goals in mind when setting the calving season. For example, to escape Wisconsin for warmer climates in January, leave behind easy to care for cattle, not those that may be calving. Avid outdoorsmen avoid calving during prime fishing season and processing or weaning during Wisconsin's late November deer hunt.

First consideration: calve to meet a market goal

Cows and bulls decide their calving season when they live with each other year round. Their owners then gather calves once a year and send them to market, taking the price given. Cow-calf producers usually manage their herds' breeding to target a calving season. The targeted calving season in turns helps them reach a market date for the animal they raise, while capturing a price that is above their cost of production.

Examination of trends reveals a seasonality of the beef markets. As explained by Lee Schulz, Extension Economist for Iowa State University and Extension Outreach, "Cattle prices, influenced by changes in cattle slaughter, supplies of other meat and poultry products, demands for cattle for feeding or grazing, and consumer demands for beef, vary over the course of a year. If these changes are repeated from year to year, there may be seasonal patterns of price changes that are somewhat consistent and predictable. Different classes of cattle have somewhat different seasonal patterns of marketing and prices."

Seasonal Price Indexes, compiled using data from USDA-Agriculture Marketing Service are analyzed

and published by the Livestock Marketing Information Center (LMIC). Two kinds of information are reflected in the seasonal price indexes. The first is an average price index for each month. This average index shows the average relationship of prices in a particular month to the average for the years represented.

As Schultz explains, "The second type of information, a variability range, [created by plotting the maximum and minimum price indexes for each month], provides an indication of the reliability of the price index for a particular month. It is based on the variability of prices for a specified month during the years included in the index calculation. Specifically, points on the charts that are above or below a particular monthly index indicate the range where the index for that month could be expected to fall 68 percent of the time. The 68 percent range statistically represents the average plus or minus one standard deviation."

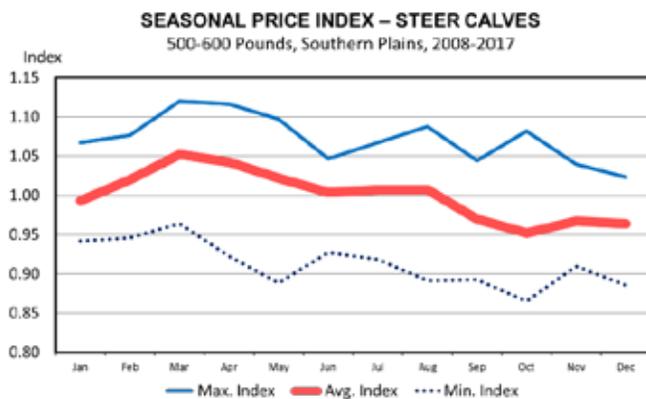
The price in a particular year will likely fall in this range approximately two thirds of the time. The smaller the variability factor (the closer the points are to the index value), the more reliable is the monthly

index. Keep in mind the trends depicted are influenced by the number of years and which years are included in the analysis.

The 2009 – 2017 indexes illustrate the lowest index for fed steers (finished cattle) occurred in December, highest in April. Calving season influences the ability to make a finished weight in April; however, the finished steer’s weight will depend on frame score, muscling, and feeding management program.

As stated by J. Daryl Tatum, Colorado State University, in his 2011 white paper, *Animal Age, Physiological Maturity, and Associated Effects on Beef Tenderness*, “in grain-fed beef production systems, beef calves (steers and heifers) typically are reared on pastures with their dams until they are five- to eight-months old. After weaning, calves either are placed in feedlots immediately for grain finishing (as “calf-feds”) or grown for a period of time on forage-based diets, until they are 12 to 18-months old, before placement in feedlots for finishing (as “yearlings” or “long-yearlings”).

“Grain-finished cattle produced in the United States normally are harvested between 12 and 24 months of age. Calf-feds typically are 12- to 16-months old at harvest, depending upon length of the finishing period, whereas most cattle fed as yearlings or long-yearlings are harvested between 16 and 24 months of age.”



The lowest 500-600 lb. feeder calf price occurred in October, with the highest average index occurring in March. Benchmarks indicate the calf should be weaned at 575 lbs. when it is 205 days of age (6.8 months). This benchmark indicates an average daily gain (ADG) of 2.4 lb. for those calves weighing 80 lbs. at birth. Calves need to be castrated or dehorned,

weaned, and preconditioned 45 days (receiving respiratory vaccines and dewormers) prior to selling in March.

Which Wisconsin birth month should feeder calves have if they are to be sold in March? Scenarios abound, and each involves the management of the nutrition, health and housing (either indoor or outside) of both calves and their mothers.

Calves born in June-July (almost guaranteeing the mud season is over) could be weaned in January with the benchmarks listed above and preconditioned to March. Alternatively, June-July born calves could be weaned earlier, for example at four months of age (November-December) at 450 lbs., and fed to gain 2 lbs. per day for sale in March. It may be more economical for early weaned calves to be housed and fed separately from their mothers.

The lowest 700-800 lb. feeder steer index (2008-2017 data) occurred in February, and was highest in July. June-July born calves gaining 2 lbs. per day (with or without nursing) would weigh 700-800 by the following July. The calving season may be determined after deciding how long the calf needs to nurse. The weaning date should be set to management’s abilities, with strict attention paid to the nutritional and health needs of the weaned calf.

June-born heifer calves intended for the seed-stock market are ready for breeding in October of the following year. Confirmed pregnant by the proceeding January, they may then be sold to calve in June at two years of age. A benchmark goal is to have heifers pregnant by 14 months of age, calving with their first calf by 24 months of age.

The June-born bull calf is ready for its first breeding season when it is 15 months old, in September of the following year, marketable to those using a fall mating season. Extra feeding and yardage costs occur to maintain this bull until the following spring mating season, when he is at approximately 21 months old. To have yearling bulls (15 month old) and older bulls (up to 30 months of age) marketable during the spring (April-June) mating season, requires their being born in the winter (January) of the first and second years prior to the current year.

Those selling finished cattle directly to consumers need to keep accessibility to butcher facilities in mind. Currently and statewide in Wisconsin, there is a shortage of local, small processors, and access is greatly reduced during the fair and deer hunting seasons, August – December. Nutritional management must be critically timed to available butcher dates when harvesting 18-24 month old cattle during their busy season.

Consider partnering with the butcher shop to harvest younger cattle (calf-feds) January through July. Calf-feds are typically 12 – 16 months old at harvest.

All these market scenarios beg the questions: can you successfully calve your herd in the spring versus the fall? Does your management provide adequate nutrition to maintain the female's body condition score (BCS) and growth of the fetus or nursing calf regardless of the reproductive timing selected? Which months of the year do you want to be handling cattle for vaccinating, AI breeding, calving, castrating and weaning?

Second consideration: calve with the farm's resources in mind

Complementing the farm's resources (environment and facilities) is the second consideration for determining the calving season. Management techniques (i.e. early or late weaning) are then utilized to reach a market condition at a certain date.

The calving season is often based upon the farm's forage production (pasture, stockpiling, and harvested for winter feed). Other environmental aspects to consider when setting the calving season are the availability of buildings during inclement weather, or natural shelter provided by woods, or windbreaks. How readily available is water? What is the lay of the land; is there good drainage, or is mud a problem?

calving areas on the best drained slopes and using appropriate stocking density. Land Conservation and Natural Resource Conservation Services have advisors and resources available to renovate barn lots, and to site and build areas that drain properly.

Bear in mind the unpredictability of 'unseasonal' rain and snow events; for example, blizzards in April and high-intensity rains witnessed somewhere in Wisconsin every month. Even though these events are sporadic, plan for cattle comfort and feed inventory and delivery during such events.

Barns and maternity pens (sized to a minimum of 120 sq. ft. per one calving cow) may be used during the calving season. Patrick Gunn, Beef Cattle Technical Consultant with Iowa State University cited previous research that found reduced mothering, dam/calf bonding, and colostrum intake as the calving area decreased from pasture to a calving pen. However, 80% of calves lost at birth are 'normal' and likely died due to delayed calving. Using a pen facilitates human intervention during difficult calvings.

Do not house close-up cattle in maternity pens as this increases pathogen levels in that area. By definition, a maternity pen holds one calving cow. Move calving cattle into maternity pens when you see the water bag or feet of the calf showing. If you move ahead of this Stage II labor, you will interrupt progress, which is harmful for both calf and mother. Move pairs out as soon as they have bonded, the calf is up and has nursed. You may need multiple heifer maternity pens



Sage beef producers have been heard to say, “Calve on snow or on green grass; do not calve in the mud!” Two mud seasons occur in Wisconsin, when fall changes to winter, and as winter gives way to spring. Particularly muddy months vary across the state. Mud can be managed with proper attention to positioning

so you can hold heifer-calf pairs together longer. Sometimes heifers, especially after a difficult delivery, will need extra bonding time in order to learn mothering skills.

After each calving, scrape the pen down completely, lime and re-bed. Once the calving season is done, or if possible during a break in the action, consider scrubbing the maternity pen. Do not use a pressure washer, as it will aerosolize germs throughout the building. Water, soaps and acid detergents, and brushes or foaming devices are the tools you will need to scrub the area.

Keys to successful calf health include calves born into clean environments and living with stable, similarly aged herd mates. When using the Sandhills Calving System of calving pasture/paddocks, all calving cattle start together in the first paddock, and after two weeks, those who have not yet calved move to the second paddock. Each subsequent week, non-fresh cattle move to the next paddock. The first paddock is the largest, and pairs are in it the longest. The result is multiple paddocks containing calves that are aged within one week of each other. The herd can

be co-mingled back together once the youngest calf turns eight weeks old.

Whether using the Sandhills System or not, well-drained, sloping calving areas are sized at 250-300 sq. ft. per cow-calf pair. Flat outdoor lots would need to be 500-800 sq. ft. /pair.

As explained by David Smith, Institute of Agriculture and Natural Resources, Department of Veterinary and Biomedical Sciences University of Nebraska – Lincoln, “Development of a ranch-specific plan for implementing the Sandhills Calving System must take place well in advance of the calving season, in some circumstances in consultation with a range specialist. Available pastures must be identified and their use coordinated with the calving schedule. Water, feed, shelter and anticipated weather conditions must be considered. The size of the pastures should be matched to the number of calves expected to be born in a given week. Use of the pastures must not be damaging to later grazing.”

Managing a calving season on snow in Wisconsin (Oct - April) requires:

- Supplements and stockpiled forages in fall/early winter to feed fresh cattle nursing calves and late gestation cattle.
- Hay inventory to feed lactating cattle and calves before spring pasture is available.
- Maintaining momma cows' and heifers' BCS is critical during cold seasons.
- Newborn calf care is more critical during colder conditions.
- Predation may be more of a problem in the winter.
- Resulting feeder calves should be ready for sale by July – December. Weaning calves mid-May would reduce pasture pressure from mid to late gestation cattle that are nursing calves, and would result in more pasture to make hay on.
- Pastures can be used for backgrounding/preconditioning feeder calves prior to selling them in July through September.

Managing a calving season on grass (May - September) requires:

- Supplements and stockpiled forages in fall/early winter to feed mid-gestation cattle or those nursing calves.
- Hay inventory needed to feed late gestation cattle and to manage BCS in the winter.
- Newborn calf care may not be as critical, as long as there is no mud; but pasture calvings must be monitored for calving difficulties and possible predation.
- Monitoring calves for problems from flies, including pinkeye.
- Calves born June-July should be ready for the feeder calf market in March (as discussed above).
- Calves weaned in the late fall or winter and fed before pasture becomes available require adequate calf comfort (facilities, bedding, and ventilation) and attention to their nutritional program.

Should you change the calving season?

Calculating the costs and opportunities for changing the time of calving will provide clearer decision making. This process is known as partial budgeting. A partial budget is a means to evaluate the expected impact on profit from relatively small changes in an operation.

To determine net profitability, first determine the value of these four questions:

What increases in profits will result from:

- A. Additional revenues?
- B. Eliminated or reduced costs?

What decreases in profits will result from:

- C. Additional costs?
- D. Eliminated or reduced revenues?

Net profitability is calculated by subtracting the decreases in expected profit (C + D) from the expected increases (A + B).

Contact the author to have a worksheet and Excel spreadsheet emailed to you, and for consultation about your calving season partial budget.

Feed is the largest cost center. Hay costs may be reduced when more pasture is used, but additional costs are garnered by pasture improvement and fencing. A hay inventory is needed when pasture is dormant. Less pasture may be needed when calving in the winter, and may result in more hay to sell off the farm (an additional revenue) and reduced fencing costs.

Profits Increased By:		Profits Decreased By:	
Additional Revenues:		Additional Costs:	
A = Total Additional Revenue:		C = Total Additional Costs:	
Costs Reduced:		Revenues Reduced:	
B = Total Costs Reduced:		D = Total Revenues Reduced:	
A + B = Increases Profit: _____		C + D = Decreases Profit: _____	
(A+B) - (C+D) = NET BENEFIT:			

Will you need a barn for calving in cold weather? Will this new season cause you to take time off from your off-farm job in order to manage calving and all the other processing events? These and other considerations are taken into account during the partial budgeting process.

A partial budget will give you a number that shows the net profit or loss from a change, but a good manager then has other questions to consider before making a decision including

- Accuracy of the estimates
- What is the risk of being wrong with the estimates (may want to do some variance testing)
- Are there other alternatives even better than the one considered
- Impact on debt structure/leverage
- Impact on cash flow
- Impact on cash reserves
- Impact on repayment ability
- Impact on quality of life

Management is key regardless of the season chosen.

Matt Stockton, Associate Professor with the Agricultural Economics Department, University of Nebraska summarized the determination of calving season when he stated, "Consideration of an alternative calving season is a complex decision...the impact of this one choice of when to calve includes the consideration of many changes in management, resource usage and allocation, benchmark performances, and marketing strategies."

Think carefully about what is driving you to want to change your herd's calving season. Fix the things that contribute most to the problem you are experiencing, and manage the others. Management changes alone may be enough to help you to reach your goals while keeping the current season. Regardless of the season used, management contributes to success, just as management contributes to successful herd production.

A successful calving season is defined and narrow

Benchmarks

Herd calving percent = **90-94%**

Length of calving season for mature cows = **60-70 days**

60% of cows calve in the first 30 days

calve heifers 30 days ahead of the cows

Percent calf death loss = **1%**

Percent calf crop weaned per cow exposed = **89-93%**

Average calf weaning weight = **575 lbs. by 205 days of age**

Pounds of calf weaned per cow exposed: **90% x 575 = 518 lbs.**

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Successful calving seasons are benchmarked for the cow/calf industry. One fundamental management practice to ensure a successful calving season is to have a defined and narrow one. Short, defined calving seasons hinge upon defined breeding seasons. Heifers and cows must be fed to the correct body condition score (BCS) and participate in sound vaccination programs in order to have successful breeding and calving seasons.

When we define success as having a calf survive its calving season and thrive to weaning, then particular attention must be paid to the calving environment (as discussed above) and to neonatal health practices. Calving equipment and supplies must be prepared before the first calf is born. Review the accompanying factsheet, *Managing a Successful Calving Season* for more details.

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This factsheet has been peer reviewed. Literature citations are available upon request.

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