

# Determining the Best Time of Year to Calve

► Learn the pros and cons of calving during certain seasons of the year.

Determining the best time of year to calve first requires an operation to have a defined calving season. If your herd currently calves throughout the year, please refer to Extension publication ANR-2656, “Transitioning to a Defined Calving Season” for more detailed information about changing from an undefined to a defined calving season. That publication discusses three scenarios for establishing a calving season in the fall, winter, or spring. This leads to the question of what time of year is the best to calve for the respective operation. The answer to this question depends on several different factors. This article provides general guidelines and considerations when making that decision. The purpose of this article is *not* to claim that there is a single best time of year to calve for every farm or ranch in Alabama because that will vary from one operation to the next. Instead, this article aims to help you make a more informed decision by providing guidance about the relative advantages and disadvantages of fall, winter, or spring calving.

Whether your goal is a 60-, 90-, or even a 120-day calving season, there are several well-established benefits of a defined calving season. However, the tighter the calving season, the more profound these benefits potentially become:

## ■ Better Nutritional Management

Winter feeding is the single most significant expense for most cow-calf operations. It is harder and more expensive to feed the herd effectively when cows and heifers have been bred over many months or if animals are in a year-round or undefined calving season. This represents different stages of production and nutritional needs. For example, cows that recently calved have greater nutritional needs than cows that have recently weaned a calf. If all cows calve over a 60- to 90-day period, then their nutritional needs are much more similar, thereby making it easier to supplement the herd as a group appropriately and still adequately meet their nutritional needs.



## ■ Improved Herd Management

It is easier to manage vaccinations, dehorning, castration, pregnancy examinations, and other routine management practices in herds with shorter calving seasons because more animals will be in similar stages of production. In addition, cows, heifers, and their calves should be checked more regularly during the calving season to avoid losing calves to dystocia or illness. This is more easily accomplished over a 2- to 3-month period rather than year-round.

## ■ Identify Reproductively Unsound Cattle

A defined calving season allows a farm to identify those animals that are less reproductively efficient, which can aid in culling and replacement decision-making for the operation. Producers can save inputs that otherwise would be spent on animal maintenance or development by identifying unproductive animals sooner.

### ■ Production of a More Uniform Calf Crop

Calves born over a 60- to 90-day calving season produce a calf crop that is generally more uniform in age and weight. Proper marketing can potentially result in an economic advantage and increase the chances of improving an operation's income. Cattle buyers will not pay as much for a group of calves that are uneven in weight and age because they have to be resorted for effective management in subsequent phases of the beef supply chain.

### ■ More Effective Record Keeping

Records are used to track a variety of data on the performance of calves, dams, and sires. A defined calving season can make record-keeping easier and more effective. Once the calving season is over, calving records can be evaluated to review breeding season results. Once calves are weaned, weaning weights can be evaluated for herd production. Refer to Extension publication ANR-2488, "Beef Cattle Record Keeping Basics," for more specific guidance.

## General Things to Consider When Determining the Best Time of Year to Calve

The following briefly introduces to some of the most important things to evaluate when determining the best time of year to calve concerning nutrition and forages, reproduction, economics and marketing, health, heifers versus cows, seedstock versus commercial herds, and other considerations.



## Nutrition and Forages

It is important to consider seasonal nutritional demands for maintenance, lactation, and rebreeding in the cow herd. Cow nutrient requirements begin to increase 60 days before calving and reach their peak within 60 days after calving. Meeting cow nutrient requirements during this time is critical to help cows prepare for rebreeding and maintain a 365-day calving interval. As calves mature and cow milk production decreases, cow nutrient demands decrease. Following weaning, cow nutrient requirements are the lowest, and this is the most economical time in her production cycle to alter the nutritional program to improve body condition score. Find additional information on cow nutrient requirements based on mature weight and stage of production in Extension publication ANR-0060, "Nutrient Requirements of Beef Cattle."

In the southeastern United States, the majority of nutritional demands in the cow herd can be met through grazing or feeding conserved forages. Given the seasonality of differing forage crops, certain times of the year favor growing conditions for grazed forages, and seasonal production gaps often require the use of conserved forages and supplemental feedstuffs to meet cow nutritional requirements. In general, the nutritional demands of spring-calving cows closely match cool-season forage availability in Alabama. Fall-calving systems generally rely more on conserved forages and supplemental feeds at calving because this coincides with warm-season forage systems going dormant. Winter-calving systems may use both conserved forage and supplemental feedstuffs, followed by cool-season forages for grazing as they become available.

Feed costs represent the largest portion of any beef cattle budget. Developing a forage program that uses both cool- and warm-season forages can help extend the grazing season and reduce supplemental feed input costs. Forage use should be timed to reduce the costs of maintaining cattle during the calving season. Cool-season forages provide higher-quality nutrition than those grown in the summer. Cool-season annuals (e.g., oats, wheat, annual ryegrass, crimson clover, and brassicas) can provide 5 to 6 months of high-quality and high-yielding pasture. However, this requires early planting in the fall to ensure late fall and winter grazing. Tall fescue can also be a good-quality option to feed cows from February until May. However, most acreage in Alabama is 'Kentucky 31' tall fescue, which hosts an endophyte that produces toxins that reduce animal gains, cause heat stress, and reduce pregnancy rates. Bermudagrass and bahiagrass will grow from April until October in Alabama. They are good forage sources but are typically lower quality than the cool-season options. Their quality is sufficient to maintain



dry cows, but lactating cows must be supplemented to maintain good conditions. Stockpiling perennial forages in the fall may provide moderate to high-quality forage for grazing in cow-calf operations and extend grazing into the early winter. For more information on forage systems for your region, refer to ANR- 2431, 0155, and 2432, “Forage Systems for Cow-Calf Operations in North, Central, and South Alabama.”

When using conserved forages and supplemental feedstuffs to meet cow nutrient requirements, starting with a forage analysis is essential in developing an appropriate supplementation plan. A forage analysis provides information on relative forage quality, total digestible nutrients (TDN), and crude protein (CP). Generally, most hay samples received by the Auburn University Soil, Forage, and Water Testing Laboratory are relatively low in TDN (less than 55 percent TDN) and contain low to moderate levels of CP (7 to 9 percent CP). As a result, feed supplementation programs for lactating cows are often first balanced for energy, followed by protein. Consult your local animal science and forage regional Extension agent to develop a nutrition program for the cow herd. Assess commercial and by-product feedstuffs based on relative quality aspects and cost per pound of nutrient provided. Supplemental feeds can be compared based on the price per pound of energy (\$/pound TDN) or cost per pound of CP (\$/pound CP) to help identify the most economical resource for a given operation.

## Reproduction

Adequate nutrition is essential for reproduction. If cattle nutritional requirements are not met, reproduction will be negatively affected. Forage resources for individual cattle operations usually rise and fall throughout the year. These changes depend on the season, weather patterns, and location within the state. Forage resources for each season must be assessed to determine if additional supplementation is needed. Recognizing the difficulties that arise each year in obtaining enough forage and feed resources for a cattle operation is important because it allows the development of a supplementation plan. By identifying these challenges in advance, it becomes possible to avoid placing a greater burden on the operation when trying to meet the crucial nutritional needs of the herd, specifically during the breeding season.

Assigning body condition scores is an effective practice to evaluate and track if nutritional requirements are being met. Body condition scores (BCS) reflect a beef animal’s relative body fat and energy stores. A score of 1 to 9 is assigned to an animal, with 1 representing

emaciated (extremely thin) and 9 representing obese. Increasing one score within the BCS measurement system equals a body weight gain of roughly 80 to 100 pounds. BCS is a visual evaluation tool for evaluating overall reproductive health and performance. While beef females can conceive in body condition scores as low as 3, these lower BCS scores during the breeding season and pregnancy can lead to decreased conception rates, decreased calf vigor, and increased postpartum intervals (time between calving and rebreeding for the next calf). For more detailed information on BCS and managing herd nutritional needs, refer to ANR-1323, “Alabama Beef Handbook, Nutrition Management.”



## Economics and Marketing

Seasonality in cattle markets refers to the normally expected fluctuation of both feeder and fat cattle (live cattle) prices during the production year. Feeder cattle prices in Alabama in a typical year tend to peak in spring (February, March, April) and are at their low point in fall (September, October, November). Seasonal price fluctuations correlate with the supply of feeder calves available and feedlot demand for those calves. Feedlot placements typically peak in October and then decrease until January. This increase in placements, along with residual animals in the feedlots pushes cattle on feed numbers in the fall to their apex in normal years and tends to push feeder prices downward. Prices are one component of producer profitability, and often producers might be tempted to adjust calving seasons and practices to correspond to these seasonal price fluctuations. However, there are several considerations beyond simple seasonality for producers as they form or adjust their calving season planning.



- Seasonality is a trend and not a guarantee. Market dynamics change constantly and can alter pricing formulas and tendencies. Cattle cycles, feed dynamics, and black swan events have all contributed to historical cattle price fluctuations outside the expected.
- Price seasonality is not equal across weight and quality classes. Heavier cattle tend to show smaller price movement than do lighter cattle.
- Price fluctuations are more pronounced for more desirable cattle to order buyers and feedlots than for less desirable cattle. This is because large, well-muscled, healthy cattle tend to achieve more seasonal gains than cattle that are not thrifty and not of high quality.

The other component of profitability to consider when assessing calving season decisions (outside of seasonality of price) is the cost of production associated with the different calving scenarios. Producers should consider their forage base and the supplementation that will be needed for each scenario. Consideration should also be given to the efficiencies of feeding. Grazing tends to be less wasteful than feeding hay. Therefore, calving seasons that allow producers to graze more and feed less tend to lower production costs and improve the chances of profitability. Producers should also consider quality issues of certain forages and the ability (or inability) of those forages to maintain cow condition and add weight to feeders.

## Health

Excessively cold, wet, and muddy environments are not conducive to maintaining calf health. Adult cows are often the first source of infection for calf diseases such as scours and pneumonia. Cow feces contains many viruses, bacteria, and parasites we want to minimize exposure to in calves. In a wet and muddy environment where it is easy for cow feces to cling to the udder, calves ingest the microorganisms while nursing. The microorganisms can then often rapidly multiply in naïve calves because their immune systems cannot keep the infections in check, even with adequate passive immunity from colostrum. As a result, even if these calves don't show outward signs of disease, they can still pass large amounts of the microorganisms into the environment through manure, which also ends up on the udders of cows and in muddy puddles where other calves may drink. This can create a situation where newer calves are potentially exposed to larger and larger amounts of disease-causing microorganisms, making them more susceptible to disease.

January and February are often the coldest and wettest months in Alabama, so extra consideration is warranted if calving during those months. However, the situation described above can occur at other times of the year. One way to stop this infectious cycle is by keeping cow udders relatively clean and minimizing calf contact with manure-laced puddles by **moving pregnant cows** away from the pairs every two weeks. This allows pregnant cows to calve in cleaner pastures. Once all cows have calved and the calves are a month old, the groups are then brought back together.

## Heifers Versus Cows

It is always a good idea to plan the breeding seasons to ensure that heifers give birth to their first calf about one month before the mature cows in the herd, regardless of the time of year you choose for calving. This is because heifers calving for the first time will almost always take longer to rebreed than mature cows due to the additional nutritional demands of lactating for the first time while still growing themselves.

Giving heifers a one-month head start means allowing them to start breeding earlier so they have enough time to conceive and give birth in the beginning of the calving season. This helps ensure a timely and consistent calving season. Of course, all this depends on providing adequate nutrition.

## Additional Considerations for Seedstock Herds

All other things being equal, older bulls typically provide a marketing advantage. Therefore, seedstock producers should consider calving slightly earlier in the fall, such as a September to November calving season, to produce slightly older yearling bulls for marketing in southeastern fall bull sales that typically begin in October. Alternatively, seedstock producers could also implement a spring calving season (March to May) to meet the fall bull marketing season the following year with approximately 18- to 20-month-old bulls.

## Other Factors

Considerations for managing farm responsibilities and off-the-farm commitments or hobbies should be taken into account. For instance, handling the calving season alongside planting and harvesting various crops can pose significant challenges. Similarly, off-the-farm job responsibilities may also be seasonal. Checking on cows, heifers, and their calves at least once a day, preferably more frequently, is ideal for ensuring successful calving. However, depending on your other obligations or engagements throughout the year, this can be demanding. Therefore, when deciding the most suitable time for calving, it is important to consider your availability and other commitments.

## Advantages and Disadvantages of Calving at Different Times of the Year

The following tables represent some specific things to consider concerning nutrition and forages, reproduction, economics and marketing, health, and other considerations related to the advantages and disadvantages of calving at different times of the year in Alabama. However, production realities will be slightly different in various parts of the state and from one farm or ranch to another, so these advantages and disadvantages are simply provided as guidelines to consider when deciding the best time of year to calve for your particular operation. It could be that your preferred calving window doesn't exactly fit the examples provided below. Perhaps you would prefer a 60-day calving season, or maybe you would prefer to start in September and finish by November. Those are acceptable choices; think through some of the considerations in the following tables and apply them to your operation-specific realities when making that decision.



**Table 1. Advantages and Disadvantages of a 90-Day Calving Season in October, November, and December**

Item	Advantages	Disadvantages
Nutrition/Forages	<p>Potential to utilize cool-season annual forages and stockpiled cool-season perennial forages (i.e., tall fescue) as supplemental grazing to hay in late fall and early winter.</p> <p>Calves are old enough to utilize forage during the peak forage production in the spring.</p> <p>Cows are dry during late summer when forage quality can be low.</p>	<p>Cows reach peak lactation approximately 60 days after calving, which means cows will be at their highest nutritional demands during the most nutritionally limiting time of the year for grazed forages.</p> <p>Calves would be weaned in late spring through midsummer, when forage quality can be low, requiring greater supplementation to achieve adequate gains.</p>
Reproduction	<p>Cooler weather during the breeding season will decrease heat stress factors that can suppress fertility in bulls, heifers, and cows.</p>	<p>Breeding occurs January–March for calves to be born between October and December. This is a time of year when grazing forage resources are most limited. Supplemental feed and forages will be needed to ensure adequate nutrition that supports reproductive success. Lactating cows and first-calf heifers will be in peak lactation with their highest nutritional requirements during these months.</p>
Economics/Marketing	<p>Calves will be weaned and ready for sale before the fall rush of feeder calves from other parts of the country. This might result in a marketing advantage.</p> <p>Calves can easily be managed to reach optimal harvest weight during the seasonal peak in fat cattle prices—January through April.</p>	<p>The input costs for supplemental feed and hay will be extremely high and may offset any marketing advantage of fall-born calves.</p>
Health	<p>The majority of calves are born when it is not excessively cold or wet, which may result in better calf health.</p>	<p>Calves would enter the feed yard during a time of year when health challenges are greatest if retaining ownership.</p>
Other	<p>None</p>	<p>If the farm/ranch is engaged in other farming enterprises, calving in the fall can create challenges while producers are also trying to harvest a variety of other crops in Alabama.</p> <p>Cows will be calving as white-tail deer hunting season opens.</p>

**Table 2: Advantages and Disadvantages of a 90-Day Calving Season in January, February, and March**

Item	Advantages	Disadvantages
Nutrition/Forages	Cows reach peak lactation approximately 60 days after calving, which means cows will be at their highest nutritional demands at a time when, with proper planning, high-quality cool-season annual forages are potentially most abundant. With proper mineral supplementation, adequate quantity and quality of cool-season annuals can meet the nutritional demands of lactating cows heading into the subsequent breeding season.	Without proper establishment and management of cool-season forages, considerable feed costs associated with supplemental hay and feed will be incurred to maintain adequate body condition on cows heading into the breeding season.
Reproduction	Cooler weather during the breeding season will decrease heat stress factors that can suppress fertility in bulls, heifers, and cows. Breeding occurs April–June for calves to be born between January and March. Forage resources are diverse during this time of year. Cool-season annuals and perennials are typically available for grazing, while warm-season perennial species are beginning to emerge from dormancy. Lactating cows and first-calf heifers will be in peak lactation with their highest nutritional requirements during the breeding season. Forage growth at this time of year mirrors these nutritional requirements to potentially reduce inputs of supplemental feed and forages.	Calving during winter months can be stressful due to a cold, wet, and muddy environment. Supplemental feed and forages may be needed to support the herd at this time. Fescue toxicosis can result from grazing fescue during the breeding season in the spring and summer months and can also negatively affect reproduction.
Economics/Marketing	With proper application of winter annual grazing systems, winter feed costs can be substantially reduced, in effect lowering the overall input costs of the cattle enterprise budget.	Without proper application of winter annual grazing systems, considerable feed costs associated with supplemental hay and feed will be incurred to maintain adequate body condition on cows heading into the breeding season.  Feeder calves will either be marketed at lighter weights before the fall rush of calves from other parts of the country or marketed at heavier weights later in the fall when feeder markets may already be saturated with calves from other parts of the country, in effect lowering calf prices.
Health	None	The majority of calves are born during what is typically the wettest and coldest time of the year, which may result in calf health challenges.
Other	If the farm/ranch is engaged in other farming enterprises, calving in the winter is potentially the least disruptive to harvesting and planting for a variety of other crops in Alabama.	Calving is taking place during the white-tail deer rut.

**Table 3: Advantages and Disadvantages of a 90-Day Calving Season in March, April, and May**

Item	Advantages	Disadvantages
Nutrition/Forages	With proper establishment and management of cool-season annual or perennial grazing systems, cows have the potential to be in excellent body condition during the calving season and subsequent breeding season.	Cows will be transitioning to warm-season perennial forages (i.e., bermudagrass and bahiagrass), which have lower nutritional value than cool-season annuals during the breeding season.
Reproduction	Breeding occurs June–August for calves to be born between March and May. Forage growth and supply are generally adequate to meet nutritional requirements. Warm-season annuals and perennials are typically available for grazing.	Breeding occurs during a time of year with high ambient temperature and humidity (summer months in the southeast). Heat stress can easily occur in bulls, cows, and heifers, which can negatively affect and suppress fertility. Artificial insemination (AI) programs based on heat detection may also be more challenging because cows and heifers tend to display stronger signs of heat during nighttime hours with cooler temperatures. Heat detection aids or fixed-time artificial insemination protocols benefit AI programs during these summer months. Fescue toxicosis can result from grazing fescue in the spring and summer months and can also negatively affect reproduction. Warm-season forage growth is generally adequate, but nutritional quality is declining at a time when lactating cows and first-calf heifers are in peak lactation with their highest nutritional requirements during the breeding season.
Economics/Marketing	With proper application of winter annual grazing systems, spring calving has the potential to have the lowest input costs of any other calving season.	<p>Feeder calves marketed later in the fall may receive lower prices due to feeder calf markets being saturated with calves from other parts of the country.</p> <p>Calves that are managed normally will likely reach slaughter weight during the season with typically lower fat cattle prices—July through October.</p>
Health	The majority of calves are born as weather conditions are relatively warmer and drier, which may result in better calf health.	None
Other	None	If the farm/ranch is engaged in other farming enterprises, calving in the spring can create challenges while producers are also trying to plant a variety of crops in Alabama.





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