Calving Season Selection Considerations



Calving season affects beef cattle production and associated costs and returns. It is important to choose an appropriate calving season for the ranch. Following are calving season decisions to consider:

- cattle nutrient demand
- nutrient supply from forage and feed
- seasonal effects on fertility
- seasonal effects on calf performance
- seasonal markets and profit potential

One type of calving season does not work best for all Mississippi beef cattle operations in terms of length or time of year. Each producer must make an informed decision on which calving season is ideal for the operation.

Controlled Calving Season

The producer should define and control a calving season. A controlled calving season starts with a controlled breeding season. Table 1 corresponds to expected calving dates for specific breeding dates throughout the year. A controlled breeding season means herd sires must be removed from the breeding herd on a designated date. The key to implementing a controlled breeding and calving season is to be diligent about separating bulls from the cow herd on schedule.

Implementing a controlled breeding and calving season can be accomplished over time with minimal production loss. A controlled breeding and calving season offers several advantages over a year-round, uncontrolled season. A controlled calving season allows matching nutritional needs of the herd to forage resources, facilitates more intense monitoring of breeding and calving, facilitates working more calves of a similar age at once (vaccinating, castrating, growth implanting), and produces calves of uniform age that can be marketed in groups to capture sale premiums.

A controlled breeding season allows herd sires time to rest and regain body condition that might have been lost during the breeding season. Not having herd sires with the cow herd yearround also reduces the risk of injury to bulls. When deciding on an appropriate length to the calving season, first consider impacts on reproductive performance and then the advantages of having calves within a tight age range.

One argument for not moving to a controlled breeding and calving season is that, with calves of different ages scattered throughout the year, income can be spread throughout the year. This is the notion of using a year-round calf crop as a checking/savings account. The advantages of a controlled breeding and calving season outlined above often lead to higher annual revenue and profit in a cow-calf operation. In addition, with planned and disciplined budgeting, revenues from calf sales using a controlled breeding and calving season can be made available during months in which calves are not marketed.

Spring Versus Fall Calving

Mississippi beef cattle operations calve during various seasons of the year. While most operations in the state calve during the spring months, an increasing number of operations are shifting to fall- and winter-calving seasons. A minority of operations practice summer calving. When comparing spring- and fall-calving seasons, there are advantages and disadvantages to each.

Nutrient demands of beef females are generally highest in the first few months after calving. Cows calving in the fall normally need more winter supplementation than spring-calving females. As cow size and production level increase, nutrient demands become even greater.

The supply of nutrients available at any particular time during the year depends largely upon the forage base. Cool-season pasture production can become limiting during winter months, necessitating a winter-feeding period of stored feeds and forages. These winter-feeding costs often make up a large percentage of the cash costs in a cow-calf operation. An advantage to fall calving is that cool-season forages are typically higher in quality and nutrient content than warm-season forages.

Seasonal effects on fertility exist. Increased numbers of follicles and larger follicle size in beef females are generally seen in spring more than in fall. During late fall and winter, lower fertility rates have been documented in *Bos indicus*

(Brahman influence) cows compared to other times of the year. Lower serum progesterone concentrations and abnormal estrous cycle lengths have also been observed in Brahman heifers during winter months.

In Mississippi, the effects of heat stress on fertility are of more cause for concern than cool-season effects. Heat stress is the result of a combination of both ambient temperature and humidity (heat index). The hot, balmy summer months in the state can depress bovine fertility in both females and males. The negative effects of heat stress on cows include hormone imbalances, reduced ova quality, lower conception rates, early embryo death, and reduced blood flow to the uterus. Conception rate averages are greatly depressed in July, while late spring conception rates are three to five times higher.

Bulls experiencing heat stress lasting only 12 hours can have impaired spermatogenesis (sperm production). The recovery time to normal sperm production takes six to eight weeks after the heat stress period. Libido and serving capacity can decline during hot weather as well. In short, for optimum reproductive performance, Mississippi producers should avoid breeding during the late, hot summer months.

Calf performance is also influenced by season. Gestation length early in the fall-calving season can be shortened by about three days compared to later in the fall-calving season. Calf birth weights are typically higher in spring than in fall while calf birth weights may decrease during the summer. A possible explanation for this is, as beef females are gestating through the hot summer months, blood is shunted away from the fetus and to the body surface and extremities to dissipate heat. Calving during the hot summer months is generally not recommended in Mississippi.

Calf weaning weights in the southeastern U.S. tend to be lower in spring-born calves than fall-born calves. Calves born in summer are significantly lighter at weaning than calves born the rest of the year. Although spring-born heifers are often lighter at weaning than fall-born heifers, post-weaning gains and body condition scores at breeding are higher for spring-born calves than fall-born calves. As the percentage of Brahman influence increases, calf preweaning average daily gain and weaning weight do not differ among fall-born calves but increase among spring-born calves. This may be due to heat-tolerance advantages of Brahman genetics as spring-born calves grow through the summer.

Seasonal markets and profit potential are another factor in choosing appropriate calving seasons. For producers who traditionally market calves immediately after weaning, spring-born calves are marketed in the fall, and fall-born calves are marketed in the spring. Seasonal highs for feeder calf prices usually hit in the spring as feeder calf supplies tighten and demand for calves increases to use spring and summer forages. Producers retaining ownership of calves post-weaning must look at seasonal costs and marketing opportunities further down the production chain. Seedstock producers should consider targeting the calving season so cattle reach a marketable age during peak demand periods for replacements. Seasonal differences in production costs must also be taken into account. The primary forage base greatly impacts supplementation needs and costs.

Some producers decide to use two defined calving seasons. This provides the option to roll non-pregnant, breeding females to the opposite calving season without having to miss an entire production cycle. It also allows a reduction in the size of the bull battery needed to settle the herd. Herd sires can be used in both seasons, but nutritional programs must be designed to maintain good bull body condition going into each breeding season. If more than one calving season is used, there is an opportunity to compare the effects of changes in markets and weather on production and profitability at a single location. This comparison may identify a preferable calving season for the specific conditions of the ranch. With two calving seasons, management and resource demands for each season should be evaluated along with the advantages described previously to determine if using two calving seasons is preferable to using one season.

Conclusions

Decisions on when to calve should be based on site-specific conditions affecting production, costs, and returns. What works in another region of the country or even another area of the state may not work for the current operation. By keeping good production and financial records and assessing forage resources, herd fertility, calf performance, and marketing options, a suitable calving season can be found for the ranch. For more information on calving seasons, contact your local MSU Extension office.

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Table 1. Age, calving interval, and gestation.

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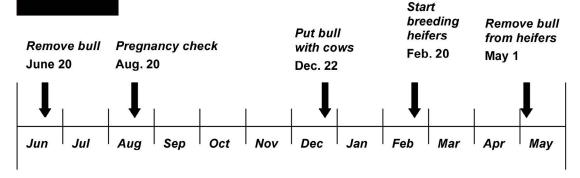
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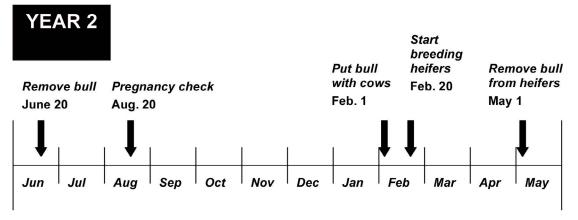
To determine date of birth for a calf, add 283 (gestation length) to the date the cow was bred. For example, if a cow was bred June 1 (day 152), then 152 + 283 = 435. From the table, note that day 435 is March 11.

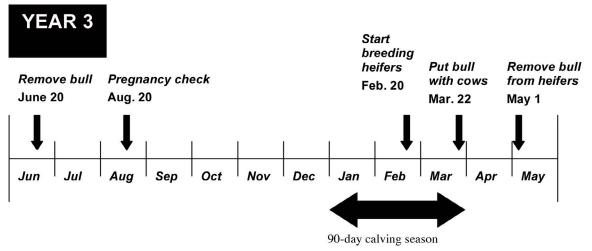
To find the date on which a calf becomes 205 days of age, locate the "day number" of its birth date in the table. Add 205 and locate the date the calf becomes 205 days old. For yearling measures of 365 days, follow the same procedure. To find weaning dates for a group of calves within a 160- to 250-day window, for example, add 160 to the last calf's birth date for the earliest weaning date. For the latest weaning date.

This table applies to typical (non-leap) years only. For leap years, add one day to all dates after February 29. For example, March 1 would be day 61 rather than day 60.

YEAR 1







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