

## **Cattle Business in Mississippi – January 2005 “Beef Production Strategies” article**

### **Choosing the Right Calving Season**

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Choosing the right calving season is important because it affects production and associated costs and returns. Calving season decisions should consider cattle nutrient demand, nutrient supply from forage and feed, seasonal effects on fertility, seasonal effects on calf performance, and seasonal markets and profit potential. There is no one-size-fits-all calving season for all Mississippi beef operations in terms of length or time of year. Each producer must make an informed decision on which calving season works best for the operation.

#### **Controlled Calving Season**

First things first. A calving season can and should be defined and controlled by the producer. A controlled calving season starts with a controlled breeding season. A controlled breeding season does not mean having twelve 30-day breeding seasons each year or four 90-day breeding seasons each year. Instead, it means that the bull is going to have to be put up away from the cows at some point in time. The key to implementing a controlled breeding and calving season is to be diligent about putting bulls up on schedule.

Implementation of a controlled breeding and calving season can be accomplished over time without sacrificing production and offers several advantages over a year-round (uncontrolled) breeding and calving 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 (vaccinating, castrating, growth implanting) more calves of a similar age at once, and produces calves of uniform age at sale time that can be sold in groups to capture group sale premiums. With a controlled breeding season, bulls are allowed time to rest and regain body condition that might have been lost during the breeding season. Not having bulls running with the cow herd year-round also reduces the risk of injury to bulls. An appropriate length to the calving season should consider impacts on reproductive performance, first and foremost, and then the advantages of having calves within a tight age range.

One argument often heard 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. However, the advantages of a controlled breeding and calving season outlined above can actually 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 in months in which calves are not marketed.

## Spring Versus Fall Calving

Results of research throughout the Southeast looking at different calving seasons provide some points for consideration in designing a profitable calving season for the herd. When comparing spring and fall calving seasons, there are advantages and disadvantages to each. Cows calving in the fall normally need more winter supplementation than spring-calvers. As cow size and production level increase, nutrient demands become even more pronounced. The supply of nutrients available at any particular point in 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. There is an upside to the cool-season though. Cool-season forages are typically higher in quality and nutrient content than warm-season forages.

Research efforts have documented seasonal effects on fertility. An East Texas study reported increased numbers of follicles and larger follicle size in beef females in spring over 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 been observed in Brahman heifers during winter months as well.

In Mississippi, the effects of heat stress on fertility are of more cause for concern than cool-season effects, however. Heat stress is the result of a combination of both ambient temperature and humidity. The hot, balmy summer months in our 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. Two studies by Texas A&M University found conception rates averaged around 16% in July, while late spring conception rates were three to five times higher. In addition, bulls experiencing heat stress lasting only 12 hours can have impaired spermatogenesis. The recovery time to normal sperm production takes six to eight weeks after the heat stress is over. Libido and serving capacity can decline during hot weather as well. In short, for optimum reproductive performance southeastern producers should avoid breeding during the late, hot summer months.

Calf performance is also influenced by season. Research indicates that 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 fall. A possible explanation for this is that 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. This reduction in blood flow to the fetus may decrease subsequent calf birth weights. Calving during the hot summer months is not recommended in Mississippi.

Research shows that calf weaning weights in this region of the country tend to be lower in spring-born calves than fall-born calves. Further, calves born during summer months

are significantly lighter at weaning than calves born during the rest of the year. A Louisiana trial found that although spring-born heifers were lighter at weaning than fall-born heifers, post-weaning gains and condition scores at breeding were higher on the spring-born calves than the fall-born group. Oklahoma researchers report that 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 as the proportion of Brahman influence increases. This may be due to the heat-tolerance advantages of Brahman breeding as spring-born calves grow through the summer.

Seasonal markets and profit potential are another factor in the choice of appropriate calving seasons. For producers who traditionally market calves right after weaning, spring-born calves are marketed in fall and fall-born calves are marketed in spring. Seasonal highs for feeder calf prices usually hit in the spring as feeder calf supplies tighten and demand for calves increases to utilize spring and summer forages. Producers retaining ownership of calves post-weaning must look at seasonal costs and marketing opportunities further down the production chain. For seedstock producers, it is worth considering targeting the calving season so that cattle reach a marketable age during peak demand periods for replacements. Of course, seasonal differences in production costs must also be taken into account. The forage base used will have a major impact on supplementation needs and costs.

Some producers opt 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. Bulls can be used in both seasons, but nutritional programs must be designed to maintain good bull 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 farm. 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.

Ultimately, 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 your 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 farm. For more information on calving seasons or related topics, contact your local county Extension office.