

## Managing the Calving Season and Reproduction to Increase Marketing Options

*F. Neal Schrick, J. Lannett Edwards, Justin Rhinehart and Fred M. Hopkins  
Department of Animal Science, The University of Tennessee*

With these proceedings, let's discuss two dirty words: BREEDING SEASON, which also leads to a defined CALVING SEASON. Please understand that cows are NOT seasonal breeders, which we all know. But for years, UNIFORMITY has been preached over and over as a means of marketing your cattle. Now you ask, "What does UNIFORMITY have to do with reproduction?" Simply, a defined BREEDING SEASON (thus a defined CALVING SEASON) will lead to UNIFORMITY in calf age and hopefully, weight. UNIFORMITY means several things such as similar ages, sizes or weights, color, and management practices. You can use reproduction (i.e., the bull) as a means of gaining UNIFORMITY in your calves and therefore, use this as a practice to improve your calves' marketability. What length of BREEDING SEASON one uses is dependent on their situation but less than 365 days is preferred. The research and education centers at UT typically have a breeding season of 60 to 75 days. You as a producer can decide what would work best for your operation but a goal of 60 (with artificial insemination) to 90 days is recommended. Here's the catch, you must have a place to put the bull when he is not with the cows! This is the biggest obstacle associated with having a BREEDING SEASON and one that can be resolved with a bull pen or pens. However, this is an additional cost that can be justified for most with marketing UNIFORM calves, vaccinating calves at the proper age at defined times during the year (instead of not vaccinating or vaccinating several times during the year!), and shortening time spent on observing cows (*especially heifers*) for calving problems. However, with today's market prices on weaned calves, I often hear that one can't afford to take the bull out because "any calf" is better than none. That discussion will be left to the economists to decide!

Producers often ask me where to start (*cows or heifers*) in developing a breeding season for my herd and what about my bulls fighting. Answer to question 1: Where to start? Heifers and your pastures (i.e., matching your pastures to your cows' nutritional needs; discussed below). Your replacement heifers are your future cowherd and hopefully have better genetics than your mature cows because you used better bulls. You decide when you want your heifers to calve (or better yet, when do you want to market your calves): Fall, Winter or Spring and set up your BREEDING SEASON accordingly. Also helpful in deciding when to calve is to take a close look at the calving records of your mature cow herd to determine the time of the year that the majority of cows are currently calving and set your heifers up to calve at a similar time. If a producer plots his or her calving information out on a 12-month calendar, most who do not think they have a calving season will actually see they already have a 5-6 month calving window (when the majority of their cows are calving). I definitely suggest avoiding Summer calves (June, July and August) and have concerns with Spring calving (April and May) since bulls would be breeding during the hottest time of the year, which does not work well (in terms of pregnancy rates) especially if your cows are grazing fescue and calves do not perform well in terms of weight gain. Once you have your heifers set, then bring your mature cows into a similar time period for breeding over the next few years. Before long, the entire herd will be set up in a defined breeding season. For a brief example that will be expanded on at the conference: Year 1: remove the bull (or bulls) on June 20, pregnancy check the cows in September and cull those summer calving cows or retain them into the new breeding season (your decision); Year 2: Put the bull(s) back in on January 20 and remove

them on June 20 again, pregnancy check in September and watch the cows calve in late October/early November through March; and then Year 3: Put the bull(s) back in the pastures on March 20 and remove on June 20, pregnancy check cows in September and watch the cows calve from late December/early January through the end of March. Now you're at 90 days in three years. We can go slower but I would not recommend shortening your breeding/calving season faster than this without losing to many cows and therefore \$dollars\$.

Answer for question 2: What about my bulls fighting? It happens and bulls do get hurt. Some considerations would be one bull per pen (costly but buying a new bull of good genetics is costly as well) or avoid placing two younger bulls with one older bull since the two young ones will definitely "team up" on the older animal. Best answer for this question is that there is NOT a good answer that is economically sound. Now one other thought since I mentioned the word "pens". At times as researchers and educators, we have a tendency to speak before we think. I'm certainly one of those that supports a BREEDING SEASON to improve marketability of calves. I also fully support backgrounding calves for a certain time period, separating my heifers from my mature cows to achieve reproductive maturity of my replacement heifers, and maintaining first-calf cows separate from my mature cows to help in rebreeding of these animals due to nutritional constraints. However, if I'm talking to a producer that has 20 cows, this becomes a difficult management situation. Why? Because this producer with 20 cows now needs one pasture for the mature cows, one pasture (or pen) for the bull, one pasture for the replacement heifers, one pasture for backgrounding the calves and one pasture for the first-calf cows. We're talking about 5 separate pastures for a 20-cow operation. Unfortunately, no easy answers exist.

Typically, our pastures are best in the Fall and Spring of the year (*depending on rain*) and thus, our calving seasons should match these times of the year to maximize the genetics of our cowherd. Genetics provides the potential for growth but grass (or milk) provides the "groceries" to meet this potential for growth as observed in weaning weights of the calves. The table below illustrates the energy and protein needs of a mature beef cow during her yearly reproductive cycle and ranks the most important periods of her nutritional needs.

**Table 1. Stages of production in a beef cow/calf operations ranked by order of importance in terms of nutritional requirements**

Production Stage	Physiological function	Rank	Requirements	
			Energy (Mcal ME /d)	CP (lb/d)
Calving to breeding	Early lactation (80 d)	1	22	2.3
Breeding to Weaning	Late lactation slow fetal growth (125 d)	2	18.8	1.9
Weaning to late pregnancy	Slow fetal growth (110 d)	4	15.6	1.4
Last trimester pregnancy	Rapid fetal growth (50 d)	3	18.3	1.6

Again, match these nutritional needs of the cow to when your pastures are at their maximum potential of providing much needed groceries. Often times, we observe animals in poor body condition when we do not match the nutritional needs of our cowherd to our pastures. Matching these two (pastures and nutritional needs) provides another benefit of having defined calving seasons in our cowherd).

We have heard about body condition at almost every extension meeting, field day, or cow college that we have attended. The reason we cover it so often is simple: body condition can be easily managed and evaluated as well as having a major impact on the reproduction of our cow herd. Body condition (i.e., nutrition) and reproduction go together the same as vanilla ice cream and chocolate syrup, buttermilk biscuits and honey, or good pastures and high weaning weights. Body condition is an indicator of our ability to manage the herd's nutritional status. We have all spoken of body condition "scores" that range from 1 to 9. Others use scoring systems that range from 0 to 10 or 1 to 16. The importance of these scoring systems is for researchers to accurately collect research data on the effects of body condition on various factors and relate this information to other scientists, extension personnel and producers. In the real world, three body condition scores exist: FAT, THIN, and JUST RIGHT. We all know what these scores look like in our cows. So if we have a problem or concern, we can call our extension agent and they'll know that THIN means a score of 2 to 4 (a score of 1 is usually very stiff with outstretched legs!) and a score of 7 to 9 is FAT. Scores of 5 to 6 are what we term JUST RIGHT. So with all this said, please remember these three scores: FAT, THIN and JUST RIGHT. So the next time you hear me or someone else talking about body condition using the 1 to 9 system, you'll be better able to relate what this means for your cow herd.

So what do these body condition scores of FAT, THIN, and JUST RIGHT really mean to our cows? Simply put, they indicate the energy reserves that our cows will have following calving to produce milk for their calves and prepare to begin recycling so the next pregnancy can occur. THIN cows will take longer to return to cyclicity status (return to heat) following calving since they do not have the energy reserves to cover the cost of producing milk for the calf, maintain themselves, AND show heat (begin to recycle). A score of THIN is a big problem for 1<sup>st</sup> calf cows as well as cows with their second calf. The 1<sup>st</sup> calf cow is trying to produce milk, grow and begin showing heat again. Typically, resumption of heat activity is the last priority of these animals. With 2<sup>nd</sup> calf cows, the struggle to accomplish the process of milk production, growth, and establishment of pregnancy with the 1<sup>st</sup> calf results in calving THIN that second time. THIN cows may also be associated with poor pastures, parasites, and/or age (young and old cows). FAT cows will typically not have a problem with resuming heat activity after calving, but may have problems during the calving process and/or problems during breeding. Furthermore, FAT cows indicate overfeeding, a cow with a poor calf (i.e., weaning weight of 200 lbs), or a cow that skipped in her calving cycle. Either means a loss in profits!

So when do we check body condition of our cows? Most of us are doing that every time we look at our herd. However, the optimum time for checking body condition is at weaning! Checking at weaning will provide us plenty of time to correct any nutritional problem we have before calving so energy reserves will be there at calving time. Also, cows that are not lactating will be much easier to put condition on with moderate feed resources (typically just pasture for mature cows). Please keep in mind that your cows may look slightly thin at weaning if they have been "working". By this, I mean putting her feed intake into the calf as well as maintaining herself on just pasture. These "working" cattle are typically easy to get back in condition for calving if your pastures are managed properly and we get RAIN (especially in the fall). At calving, you can check body

condition again but remember that the amount of feed needed to put condition on while the calf is suckling will be much greater.

One other thing: **DO NOT FORGET THE BULL**. Check their condition when the cows start calving as well, so they'll be in shape when breeding season begins. Once they begin chasing and breeding cows, food is not the # 1 thing on their mind, so body condition can be lost quickly. Another comment, **FAT BULLS** will find the best shade tree and watch the cows since they'll be out of shape and **THIN BULLS** will be looking for grass and not be thinking of sex.

In summary, evaluate your pastures and check your prior calving times. Then decide when you want your cowherd to calve and start with your heifers. Bring your cows into the breeding season during the next few years to have a 3-month calving window (if using bulls only). After a few years, you'll have a defined calving period to aid in marketing, vaccinating, calving and bull management.