

# Management of Body Condition Score throughout the Year

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## Importance of Body Condition Scoring

Body condition scoring (BCS) is a visual indicator of past energy status of cattle and a method that can be used to monitor nutritional status of the cow herd. Body condition is a key indicator of potential reproductive performance. Various studies (Houghton et al., 1990; Perry et al. 1991; Selk et al., 1986) have determined there is a strong relationship between adequate body condition at calving and subsequent reproductive performance. Mature cows should have a BCS of 5, with a BCS of 6 for first-calf heifers to provide the greatest opportunity to rebreed within 80-85 days of calving to maintain 365-day calving interval. If cows are thin coming into calving, they will be less likely to get pregnant within the desired timeframe, decreasing the economic return to the operation.

## How to Body Condition Score

The beef cow BCS scale is 1 to 9, with 1 being extremely emaciated and 9 being extremely obese. The normal range for most cows is 3 to 7, with the majority being 4 to 6. Depending on the frame size of cattle, one BCS is equivalent to approximately 100 pounds of body weight. For small framed cattle, this can be decreased to 75 pounds and increased to 125 pounds for larger framed cattle. As a rule of thumb, think about one BCS being equal to 100 lbs.

There are 6 points on the animal to assess for fat thickness and cover to determine BCS. These points include the 1) spine, 2) tail head, 3) pins, 4) hooks, 5) ribs, and 6) brisket, depicted in Figure 1. Table 1 describes the variation that can be seen with visual appraisal of the different reference points on the animal. For instance, a cow in BCS 5 will have a slight outline of her spine, 1-2 ribs showing and no additional fat in

her brisket. The table describes changes that can be observed with increases or decreases in BCS.

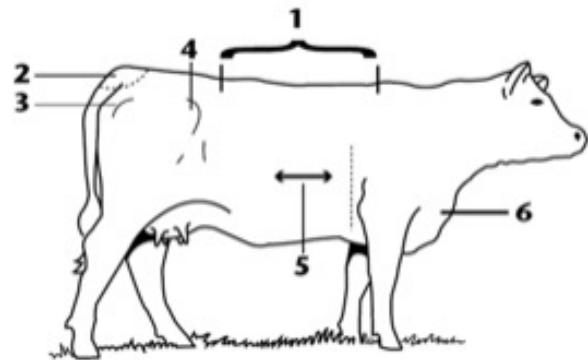


Figure 1. Diagram of areas to evaluate body condition score of a cow.

## Key Times and Management Strategies to Improve Body Condition Score

There are five key times throughout the production cycle when beef cattle producers should assess body condition score of the cow herd and make management decisions to improve reproductive efficiency and overall performance. Beyond the key times addressed below, it is important to monitor BCS on a more informal basis throughout the year to evaluate whether the herd is gaining, maintaining or losing condition. At any given point in time, management strategies can be adjusted to move the herd in the desired direction. The key time points to BCS are not in any particular order, but can be used based on where the operation is within the production cycle.

**Weaning.** Individually body condition score all cows at weaning. Thin cows can be sorted off and supplemented

Table 1. Describes variation in each body condition score in regard to reference points on the animal.

Reference Point	Condition Score								
	1	2	3	4	5	6	7	8	9
Physically weak	Yes	No	No	No	No	No	No	No	No
Muscle atrophy	Yes	Yes	Slight	No	No	No	No	No	No
Outline of spine visible	Yes	Yes	Yes	Yes	Slight	No	No	No	No
Outline of ribs visible	All	All	All	3-5	1-2	0	0	0	0
Fat in brisket and flanks	No	No	No	No	No	Some	Full	Full	Full
Outline of hook and pin bones visible	Yes	Yes	Yes	Yes	Yes	Yes	Slight	No	No
Fat udder and patchy fat around tailhead	No	No	No	No	No	No	No	Slight	Yes

Pruitt and Momont, 1988

with additional nutrients to increase condition and allow them to reach the average BCS of the main herd. This timeframe at weaning and during mid-gestation is the easiest and cheapest time to add condition to cows. Nutrient requirements are the lowest they will be throughout the production cycle and feed resources to meet lower nutrient requirements are typically more available during this time. Additionally, if cows come out of a grazing situation in a BCS of 6 or greater, these cows can be allowed to lose a bit of condition, but use caution. In this situation, it might be reasonable for the cows to decrease ½ of a BCS or approximately 50 pounds. If too much condition is lost during this time frame it will be more challenging to gain back later in gestation.

If additional condition is needed, work with a nutritionist to develop rations that will meet the goals of the herd. To effectively accomplish this, a thorough feed inventory should be conducted and all feeds should be evaluated for nutrient content. Typically, standing forages, such as native pasture grasses, are not tested; however, quantity and quality should still be taken into consideration as both of these can change rapidly depending on conditions. Every situation will be different, but overall, if additional condition is needed, the first limiting nutrient is energy, therefore, additional energy should be provided to reach the desired gain. This additional energy could come in the form of a commercial supplement, a concentrate such as corn or oats, a high energy hay that will be the primary feed source, or a combination of options. If cows are grazing, providing a supplement and/or moving cows to fresh grass can increase BCS.

**Late Gestation.** This is the last opportunity to increase BCS prior to calving. As mentioned previously, the goal is to have mature cows in a BCS 5 and heifers in BCS 6 at calving. The last 90 days of gestation is

when the majority of fetal growth occurs; therefore, a large percentage of nutrients will be utilized for fetal development. To put this in perspective, cows need to gain approximately 1.2 pounds per day for fetal tissue development. If cows are thin going into late gestation, they may need to gain 1.5 to 2 pounds per day to reach BCS 5 at calving. This can be challenging due to the increase in nutrient requirements from mid-gestation to late gestation. An example of a ration to move a herd from a 4.5 to 5 BCS during late gestation is 25 pounds of moderate quality grass hay (7% crude protein and 56% TDN on a dry matter basis) with 4 pounds dry distiller's grains plus solubles. Calculated gain for this ration for a 1350 pound cow is 1.90 pounds, with 1.25 pounds being utilized for fetal tissue and 0.65 pounds for maternal tissue. Over a 90-day period, these cows would gain approximately 58 pounds or just over half of one BCS.

**Calving.** It is a good practice to write down BCS for each cow when she calves. Knowing the BCS at calving can provide a reference for future reproductive issues or questions. If there is an opportunity to increase nutrients to cows during lactation, it could be beneficial. Depending on when cows calve and available feed resources, there may or may not be an easy or economical opportunity to increase BCS of cows after calving. Once the cows calve and start lactating, nutrient requirements are the highest that they will be throughout the production cycle. If cows calve on green grass, they will likely gain condition following calving, depending on environmental and forage growth conditions. If cows calve earlier or are being fed harvested feeds, it becomes more difficult and costly to meet nutrient requirements and even more challenging if they are thin at calving. Knowing the quality of harvested feeds and developing rations to meet requirements will provide the greatest opportunity to meet production goals.

**Breeding.** Monitoring BCS at breeding time can help identify whether cows were maintaining, gaining or losing condition from calving to breeding. If cows are on a positive plane of nutrition and gaining weight, research indicates that these cows will have a better opportunity for rebreeding (Houghton et al., 1990). If cows have decreased condition from calving to breeding, there could be negative impact on overall pregnancy percentage due to nutrient partitioning. Nutrients that a cow consumes will first be used to maintain the cow's own condition and body function, with additional nutrients being used for lactation. If nutrients are still available after lactation requirements have been met, they will be used for reproductive processes. Therefore, if nutrients are deficient, the first thing to be compromised is reproduction. The cow will take care of herself and the calf on the ground before becoming pregnant and developing another calf.

**Sixty days prior to weaning.** If cows are thin and grass conditions are not favorable to increase body condition, such as during drought, something needs to change. Two options are to early wean the calves or supplement on pasture. Early weaning the calves removes the lactation requirement from the cow, decreasing her overall nutrient requirements and allowing her to gain condition on lower quality and quantity of feeds. This management practice also allows for stretching forage resources during drought situations. Calves that are early weaned typically do well in a feedlot setting and allow cows to gain condition and prepare for the next calving season at a lower cost to the producer. The other option is to supplement on pasture. If using this option, one needs to account for the forage and supplement that the calf will be eating in addition to the cow to ensure that adequate feed is available. Costs and labor demand associated with this option should be considered, in addition to rangeland health and potential long-term impacts on forage production. Each situation is unique, so it will be important to evaluate each unique situation and what will work best from a management and economic standpoint.

## Conclusion

Body condition scoring is a valuable tool that can assist in making management decisions for the benefit of the cattle and the economic status of the cow herd. Develop a habit of evaluating BCS and writing it down. Work with a nutritionist to determine ration options when changes are needed. Body condition scoring can help producers manage feed resources more efficiently and optimize pregnancy rates. Noticing changes in BCS allows for adaptations to feeding programs and improvements in cattle performance. Adding condition during times of lower nutrient demand is a beneficial management practice.

## References

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## Additional Resources

- Basics of Body Condition Scoring: <https://extension.sdstate.edu/basics-body-condition-scoring-bcs>
- Influence of Body Condition on Reproductive Performance of Beef Cows: <https://extension.sdstate.edu/influence-body-condition-reproductive-performance-beef-cows>
- Understanding the Importance of Your Herd's Energy Reserves: <https://extension.sdstate.edu/understanding-importance-your-herds-energy-reserves>

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