Evaluating Body Condition of Beef Cows In Winter

An Advantage in Economical and Nutritional Management Decisions

Body condition scores (BCS) have long been a tool for evaluating fat reserves in beef cattle. With producers often lacking the ability to weigh their cows, this management tool offers a simple, visually-based solution that will help boost the performance and profit potential of the cow herd.

The one-through-nine numeric scale serves as an indicator of the nutritional status of the cow which, in turn, assists producers in making key decisions relative to nutritional management. Furthermore, there is a strong correlation between BCS and productivity, making it an essential management tool for all cow/calf producers. Evaluating the body condition of females during winter months will help producers make sound nutritional and economic decisions. Feed efficiency and herd health will also benefit from winter BCS; a time when feed resources become limited.

The goal of this article is to discuss the implications BCS has on nutritional management, economic decision-making, and the performance of the cow herd. Furthermore, proper steps to BCS cows, particularly in the winter, will be outlined.

Body condition score as an indicator of body fat

Each cow has variation in her fat reserves and nutritional requirements throughout the production cycle, hence the importance of body condition scoring. Factors including lactation stage, gestation phase, age, and environment affect the body fat of cows. As a cow consumes energy in excess of her requirements, she will store that energy as fat – allowing her to draw on those fat reserves when intake is not meeting her nutritional requirements. These fat reserves are not only important for meeting energy requirements of the cow, but serve as an insulator to the cow during cold weather. A rule of thumb is that one BCS score translates to about 75 pounds of body weight. An important consideration is that this estimate is not fully inclusive of other factors such as fetal weight or placental weight. Thus, a cow in late gestation that appears to be maintaining weight may be losing actual maternal weight due to rapid growth of the fetus and lack of adequate nutrition during this production stage.

Body condition score relative to seasonal nutritional management

It is important to consider critical times in the annual production cycle to score cows by body condition. This will undoubtedly look different for a fall calving herd in comparison to a spring calving herd. Figure 1 suggests a general timeline for body condition scoring cows throughout the year. Remember that the rule of thumb is for first-calf heifers to achieve between 55% and 65% of their mature body weight at breeding, and 85-90% by the time they calve. Thus, heifers and young cows differ in nutritional requirements compared to mature cows. Gestating heifers may require up to 15% more energy and crude protein than mature cows. Winter conditions and duration of cold weather heavily influence what feed sources a producer will have at their disposal; thus, it is important to score cows often.

Whether supplementing feedstuffs while cows are winter grazing or feeding a total mixed ration (TMR) to cows in confinement, one must consider the nutrient content of the feedstuff. For example, corn and distillers grain will provide a higher concentration of energy for maintenance as compared to alfalfa hay or corn silage. Uncovered feeds are vulnerable to precipitation and degradation; therefore, getting nutritional analyses of available feedstuffs will help producers make rational management decisions. Consider consulting with a nutritionist or Iowa State University Extension and Outreach specialist to help formulate quality rations using the feedstuffs at your disposal.

IOWA STATE UNIVERSITY
Extension and Outreach
Iowa Beef Center

IBC 0140 February 2020

Figure 1: Recommended timeline for body condition scoring cows and heifers.

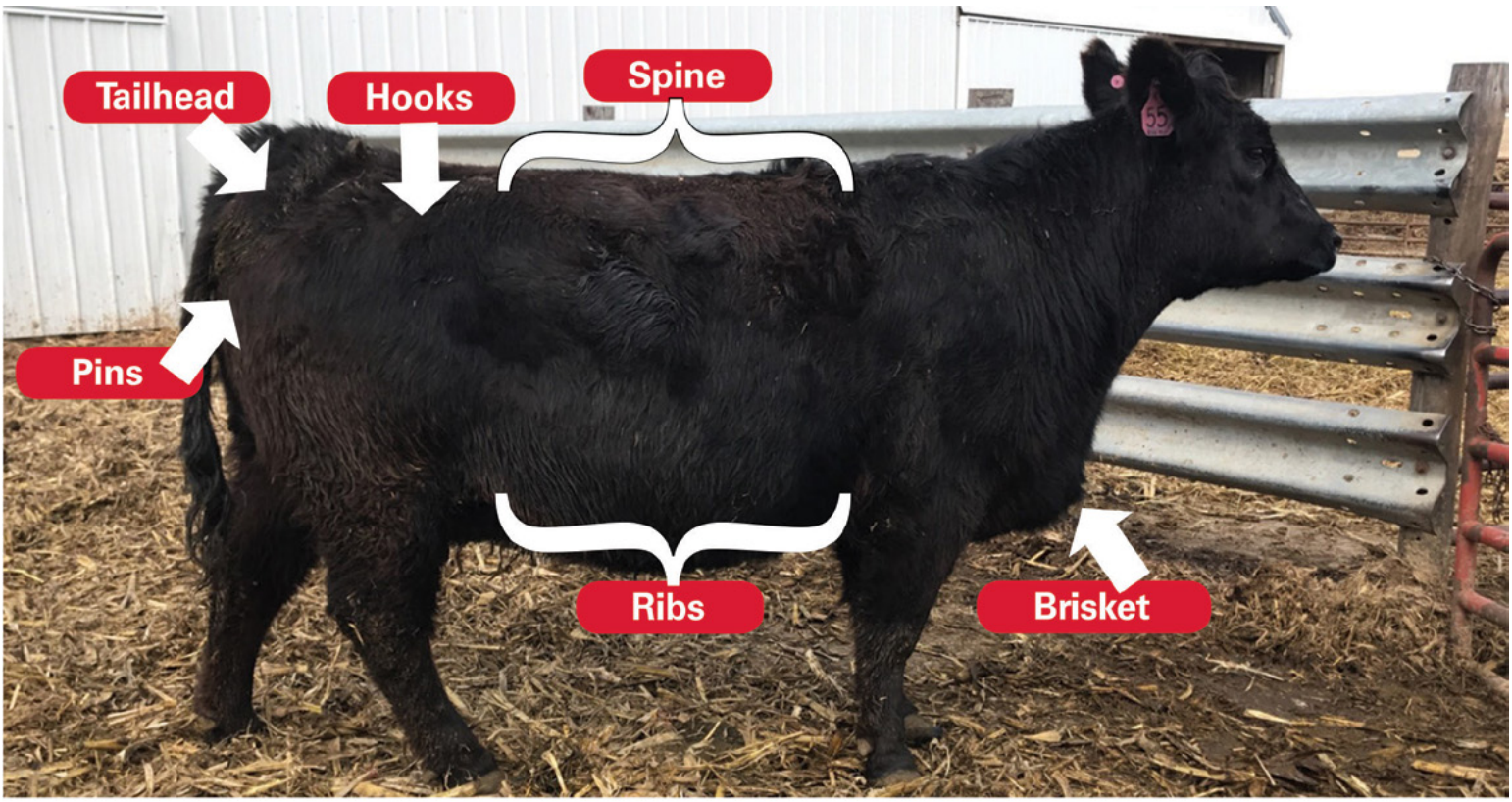

Figure 2: Key areas for palpating cows when body condition scoring.

Figure 3:
- Little fat over ribs and loin
- Backbone visible
- Moderate muscle loss in hindquarter

Figure 4:
- Rib and spine slightly visible
- Slight muscle loss in hindquarter

Figure 5:
- Ribs and spine must be felt with pressure
- Fat deposition noticeable on sides of tailhead

Figure 6:
- Ribs fully covered
- Rump is full and filled out
- Slight fat deposition visible in brisket
- Ribs and tailhead begin moderate-fill in

Figure 7:
- Significant fat depostis on side of tailhead
- Noticeable fat deposits on ribs
- Moderate fat accumulation in brisket

Body condition scoring as an indicator of profit potential

Like nutrition, profit is significantly influenced by several factors. Within annual cow costs lie the single biggest cost to any operation – feed. Scoring cows prior to and during winter allows better utilization of available feedstuffs, in addition to prevention of feed shortage. Should a producer run short of feed during the winter months, it will be extremely costly to purchase more. Body condition scoring during winter helps adjust feed intake to account for various factors that may affect cow BCS as winter progresses. This practice will ensure that feed is not being overfed and wasted – saving the producer money. It can also prevent the underfeeding of females, which can affect both her and her unborn calf's performance and health. Performance also factors into profit potential of a herd. Research has shown that cows in poor body condition will take longer to breed back after calving, thus increasing the post-partum and calving interval. Extending the time it takes for a cow to breed back means that it will take longer for a cow to produce a calf, thus requiring more feed and decreasing profit potential.

What's the advantage to body scoring cows during winter?

For fall herds, cows will generally be ready for breeding at the start of winter and will then move into early gestation. As previously discussed, body condition of cows can make or break a herd in terms of pregnancy performance. Mature cows with a BCS score of 5-7 at calving will achieve the best conception rates (81-90%) during a 90-day breeding season. However, it is not economically feasible for most producers to feed to BCS 7 at calving; thus, it is recommended to shoot for BCS 5 or 6 at calving. This differs slightly for heifers since they are still maturing, meaning it is better to maintain them at a higher condition of at least six when they calve. Fall cows typically are in early to mid-,lactation around breeding season and the start of winter. Since they likely calved in warmer weather when more feed resources like stalks are still available, it is generally easier to maintain weight on them heading into winter. The key is to maintain an adequate BCS with them as they reach peak lactation and breeding around the same time. If fall cows head into winter in thinner (BCS < 5) condition, it is usually an uphill battle to recover that weight, in part due to the continued use of fat reserves in cold weather as well as potential feed shortage. In light of that, it is critical to BCS fall-calving females both when heading into winter and at least once during winter.

Compared to fall-calving females, spring-calving females are on a different BCS schedule during winter. For spring-calving herds, the 90-day pre-calving mark occurs during the winter. The 90-day pre-calving mark is the last chance to economically alter the BCS of a female prior to calving.

Depending on calving dates, the 90-day pre-calving mark will fall between December and February. At this point, cow herds are in the peak of winter and stored feeds need to be used conservatively. Body condition scoring females in the winter can thus yield a healthier cow and calf when calving starts, while also ensuring that a producer does not over or under feed. Lastly, if one or two scores can be collected during the winter months, a producer will be able to plan accordingly for grazing and hay production during the growing season.

How to body condition score cows during the winter months

Body condition scoring cows may involve visual observation or both visual observation combined with palpation of key anatomical areas of the cow. Because winter coats may hinder visual scoring, we highly recommend palpation of certain areas of the cow/heifer if possible. These areas include the following: spine/backbone, hooks, pinbones, tailhead, brisket and ribs. Figure 2 illustrates these key areas relative to the location on the cow.

If new to body condition scoring, it may be helpful to separate cows into thin, moderate, and fat groups. Figures 3-7 demonstrate cows in different body condition scores. Though their hair coats are long, a clear distinction can be made between the body conditions of each cow; thus, illustrating the value of not overlooking winter scoring. If new to body condition scoring and the opportunity presents itself, try to palpate cows and assign scores before visually scoring them. It is also important to give an unbiased score; meaning to not let known characteristics of the cow (age, breed, stage of gestation) influence the score. Another practice to consider is having two people body condition score cows. This provides more accurate results and creates some accountability between scorers. Scoring cows by body condition through the winter and throughout the year will generate enough data to begin to evaluate trends in your cows. For example, a consistent decrease in BCS for fall cows on stalks during December might indicate that supplementing those cows while on stalks or mature grass will help maintain weight heading into winter.

Summary

With the large amount of variability seen in winter weather patterns throughout the United States, it is imperative to address the body condition of cows routinely throughout the year. Despite its usefulness, body condition scoring during winter has often been overlooked or undervalued. Think of a balance, with body condition on one side and factors affecting it such as nutrition on the other side. A change in one results in the change of the other, and when unbalanced, both effects to the cow and the producer's checkbook can be felt. That said, consider assigning body condition scores to cows more frequently during the winter months, and utilize that as a tool for making management decisions for the herd. When accounting for performance, health, or reproductivity, one can take steps to support consistent cow health and condition throughout the year, regardless of the weather. Utilize thorough and accurate record keeping and always consider all alternatives when deciding how to condition cows. Implementing these techniques into the herd will not only aid in making management decisions, but will likely yield both increased performance for the herd and increased profitability as a producer.

Authors

Devin Jakub, graduate student in ruminant nutrition at Iowa State University; Renee Dewell, DVM, veterinary specialist with the Center for Food Security and Public Health at Iowa State; Grant Dewell, DVM, associate professor and extension veterinarian at Iowa State; Beth Reynolds, extension program specialist with the Iowa Beef Center; and Katy Lippolis, assistant professor and extension cow-calf specialist at Iowa State.

Photos courtesy of Tate and Calli Williams of TW Angus and the Iowa Beef Center.

References

A. Contreras. 2019. "Assessing fat mobilization and inflammation in transition cows." *Progressive Dairy*. Accessed December 14, 2019 from progressivedairy.com/topics/herd-health/assessing-fat-mobilization-and-inflammation-in-transition-cows.

N. H. Ciccioli, R. P. Wettemann, L. J. Spicer, C. A. Lents, F. J. White, and D. H. Keisler. 2003. "Influence of body condition at calving and postpartum nutrition on endocrine function and reproductive performance of primiparous beef cows." *Journal of Animal Science*, Volume 81, Issue 12: 3107–3120. Accessed from doi.org/10.2527/2003.81123107x.

D. E. Eversole, M. F. Browne, J. B. Hall, and R. E. Dietz. 2014. "Body Condition Scoring Beef Cows." Accessed December 13, 2019, from hdl.handle.net/10919/50710.

T. Grussing. 2019. "Targeted Feeding for Heifer Development." South Dakota State University Extension. Accessed December 12, 2019, from extension.sdstate.edu/targeted-feeding-heifer-development.