What condition scoring can tell you

by Richard L. Wallace, D.V.M.

BODY condition can be likened to a fuel reserve tank. During periods of high energy need, cows use the reserve, causing condition scores to drop. Meanwhile, periods of lower energy need, such as late lactation, replenish the body's energy reserves. You can accurately monitor those reserves by routinely body condition scoring cows. Second only to heat detection, body condition scoring may offer more return on investment than any other practice. And it involves a smaller routine time commitment than heat detection.

Just as somatic cell counts are used to measure subclinical mastitis, body condition scoring (BCS) can be used to assess subclinical nutritional and reproduction-related disorders. Individual condition scores will have immediate use, but the real power of BCS is gained from evaluating herd trends.

Yet, body condition scoring hasn't been widely implemented by producers and herd consultants. Conflicting opinions have existed regarding the proper scoring system, the optimal timing and frequency of scoring, as well as the proportion of cows to score. However, recent research efforts have cleared many of these concerns.

The uniform BCS system was developed in 1989. Freely moving Holstein cows could score from 1.00 to 5.00 in 0.25 increments, with 1.00 considered extremely thin and a score of 5.00 being heavy. That body condition system has become the basis for most scoring methods.

The system was further simplified in 1994 by Jim Ferguson at the University of Pennsylvania. Its main focus is looking at specific body locations while scoring; and that will be the focus of this article series. The improved system provides reliable scores in 0.25 units between 2.50 and 4.00. Scores below 2.50 and above 4.00 can only be separated by 0.50 units accurately. To help score cows, a flow chart was adapted from Ferguson's system. The chart, found on the opposite page, gives a complete description on how scores are assigned to cows.

Score at specific events . . .

Just when is the best time to body score cows? Recommendations vary, but, to save time, develop a routine. Scoring cows during routine events such as calving, postcalving exams, first A.I., preg checks, and again at dryoff is a logical approach.

If you're going to get serious about body scoring, having one person score cows on a consistent basis is a good idea. Besides having the talent to score cows, be sure the person is a good recordkeeper and actually records data. BCS can be extremely useful information when establishing herd trends or when herd consultants and veterinarians are troubleshooting herd health problems.

What about having consultants or veterinarians score cows? Again, consistent scoring is crucial; cows must be scored at key stages of lactation. Scoring cows only when the veterinarian does postcalving exams has a limited value. Precalving scores are required to make judgments about early fresh cow and calving conditions.

Time period between scores . . .

Be proactive, not reactive. Scoring cows at the time of feed-level changes or when problems occur is reactive and restricts the use of BCS for preventive measures.

A 30-day interval can work. In 1994, Michigan State researchers evaluated average BCS for each 30-day lactation group in a 372-cow, Holstein herd. During one visit, 70 percent of the cows were body condition scored. The workers' conclusion: Average BCS for cows in each 30-day interval can detect changes in BCS across stages of lactation and the dry period.

A concern regarding this approach is that cows were only scored at one herd visit. This type of "snapshot" does not take into account variation in BCS due to season, age, health, or changes in nutrition. It also assumes that each 30-day group had an average score during the previous month similar to the corresponding group evaluated in the current month. This is an assumption that may not always be appropriate.

In another trial, Washington State researchers assigned a BCS to all cows in a 350-cow, Holstein herd every month for two years. The date of scoring was set to coincide with monthly DHIA tests. Monthly scoring systems will give a broad picture of herd performance, resulting in BCS independent of management events. The data can be easily incorporated into the diagnosis and prevention of herd health problems.

To obtain reliable results, herd and production group sizes need to be considered. While most studies have been performed on herds with more than 350 cows, Michigan State researchers determined less than half the herd was needed to achieve 95 percent accuracy in each 30-day lactation group. In smaller herds each month, it's best to score the entire herd, including springing heifers. Scoring the herd around DHIA test day will allow you to correlate BCS results with production data.

Scoring herds under 100 cows . . .

Here's how the system worked on one dairy. Seven strategic groupings were evaluated on an 80- to 90-cow dairy in Ohio (Table 1). The first three groups (far-off dry cows, close-up dry cows and springers, and fresh cows 1 to 30 DIM) are based on 30-day intervals. (The next four groups 31 to 100 DIM, 101 to 200 DIM, 201 to 300 DIM, and cows over 300 DIM, are based n sequential stages of lactation.) While these groupings fit the "snapshot" approach, they are important to herd management, as well. (In this study, early-lactation and peak milk yield were closely associated with the midpoints of the first two lactation intervals, 15 and 66 days, respectively.)

Following body scores within a herd

Groupings DIM	Scores	Mean DIM	BCS
Far-off dry cows	111	-57	3.76[a]
Close-up dry cows	148	-15	3.69[a]
Fresh cows 1-30	132	14	3.09
Peak milk 31-100	297	65	2.61
Mid lact 101-200	360	149	2.69
Late lact 201-300	328	247	3.00
Due to dry off >300	198	364	3.34

[a] Adjacent means with same superscript are not significantly different (P>0.05).

Once the body scores are obtained, take time to record the data. Frequently, scores aren't recorded, making BCS ineffective.

Discovering trends is one objective when looking at BCS data. Many health and reproductive problems can be avoided if trends are recognized at an early stage. Early discovery may be the biggest argument for spending time to BCS cows, since, once a health problem starts, more problems follow.

Fatty liver is a condition brought on by overconditioned cows. Once a cow becomes obese, she can develop into a problem breeder. Reproductive problems create prolonged lactations, and cows may put on too much weight. These heavy cows invariably become health risks in later lactations, and the reproductive inefficiency/fat cow cycle continues.

To make good use of body scores, sort them into seven strategic groups. These groups can consist of far-off dry cows, close-up dry cows and springers, fresh cows 1 to 30 days in milk (DIM), peak milk cows 31 to 100 DIM, midlactation cows 101 to 200 DIM, late-lactation cows 201 to 300, and cows due to go dry that are greater than 300 DIM.

After groups are made, calculate the average BCS and DIM. These lactating groupings will be similar to "stage-of-lactation profiles" seen on many DHIA records, and you will be able to develop herd trends.

Where scores should lie . . .

Far-off dry cows, close-up dry cows — It is desirable for the body condition at dryoff to be similar to the body condition at calving. The close-up dry cows and heifers evaluated should be between 3.25 and 3.75.

Fresh cows — Change in body condition indicates the amount of weight loss after calving. On a herd basis, the average condition loss for all cows should be .5 body condition units from calving to 30 days in milk.

Peak milkers — Body condition loss should reach a maximum at this time. Cows can be routinely scored at their first reproductive exam following calving. A group average should lie between 2.75 and 3.25, while all cows need to be 2.5 or above. Very high producers may fall below 2.5 but should not drop below 2.0.These cows will need additional time to regain the lost body condition.

Midlactation cows — Averaging scores for all cows between 101 to 200 DIM should generate a midpoint average around 150 days fresh which coincides with pregnancy checks. Cows between 101 and 200 DIM should be included, and scores can be taken at the midpoint, 150 days fresh, or at pregnancy check. Evaluating BCS in midlactation will help ensure that cows have started regaining body condition lost in early lactation. At the midlactation stage, cows should score between 2.75 and 3.25. And, in order to dry off at over 3.25, cows need to gain back .25 to .5 body condition units every 100 days.

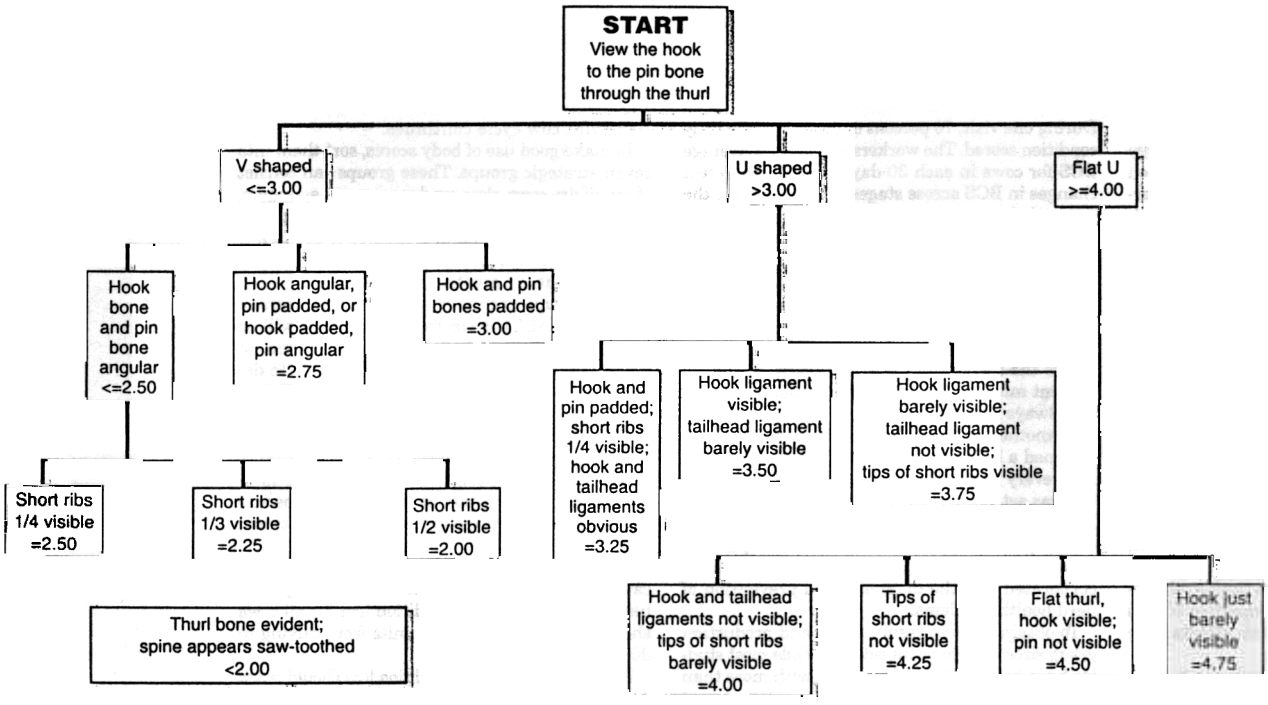
Late lactation/due to dry-off group — Realize that these are two groups; the 201 to 300 DIM cows (midpoint 250) are associated with late lactation, while the greater-than-300 DIM group would be a caution (due to dry off) group. Scoring cows in these groups is important for two reasons. Overconditioned cows are more prone to health problems in subsequent lactations, and underconditioned cows won't have adequate reserves to achieve high milk production the following lactation.

By scoring later-lactation cows, there is still time to adjust the feeding program to achieve desired BCS. There isn't a common herd practice to score cows during late lactation, so time will have to be set aside to score. Tailenders can be scored at dry-off. Late-actation cows should score between 3.0 to 3.75, and dry-off cows should fall between 3.25 and 3.75.

What to look for? Examine average BCS and DIM of the due-to-dry-off or greater-than-300 DIM group to identify potential problems. If the average DIM for this group is high (greater than 330 days), reproductive problems are probably a culprit. For this data set, the mean DIM of the caution group was 364 days. This group contained scores from several problem breeders. Cows within this group will have calving intervals greater than 13 months. To avoid future problems, monitor overconditioned cows closely at the next calving.

The author is a dairy extension veterinarian in the College of Veterinary Medicine, University of Illinois at Urbana-Champaign.

Breaking down body condition scoring — here's a start



STEP 1 Objectively score the cow with the flow chart.
STEP 2 Step back and subjectively view the cow.
STEP 3 Adjust the score; add 0.25, subtract 0.25 or keep the score but adjust no more than 0.25 points.