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PHOTO BY SCOTT HOIT

At Weaning Time: Don't Forget Momma

Take time to collect cow weights and body condition scores.

by Angie Stump Denton

Improved reproduction and feed efficiency are two goals all cattle producers strive to attain. They are also two of the harder goals to measure. Producers spend hours looking for ways to improve conception and herd productivity.

An easy tool available to assist producers in the evaluation process of their cow herds is body condition scores (BCS). These scores allow producers to achieve optimum reproduction level and reduce feed costs.

"Body condition scoring is an easy method to assess the nutritional status of the herd and the impact of an operation's nutritional program," says John Hall, Virginia Polytechnic

Institute and State University Extension beef specialist. "By using body condition scoring at critical times, cattlemen can make decisions on when to supplement. Also, considerable research indicates that body condition score before calving and during the breeding season are directly related to reproductive efficiency."

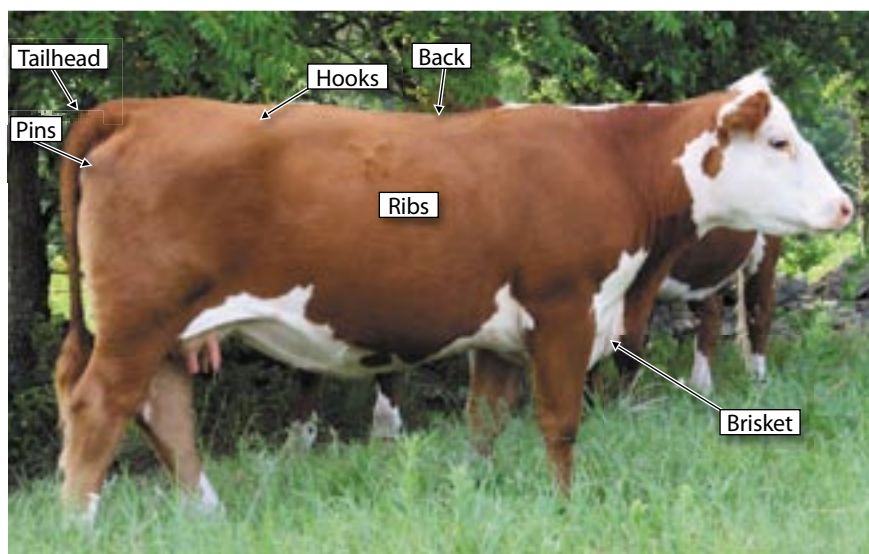
Hereford breeders are encouraged to collect and report cow weights and BCS at weaning. To be compliant with Whole Herd Total Performance Records (TPR™), producers have a seven-day window before and after weaning to collect cow weight and BCS. Hereford breeders must report both a cow weight and

BCS for the data to be included in national cattle evaluation.

"This data should be collected because it will give us an opportunity to look at some cow maintenance issues, which, in turn, could be directly related to fertility and longevity," says Jack Ward, American Hereford Association (AHA) chief operating officer and director of breed improvement. "Today we do not calculate a mature weight EPD (expected progeny difference), but we will obviously use this data in our current indexes, and it could also be used in calculating some sort of stayability or survivability EPD or index.

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Figure 1: Key areas to examine during body condition scoring



Real-world application

CA Ranch, West Plains, Mo., is a family operation. Three generations of Aikens — Charles Sr. “Skip,” Charles Jr. “Chuck” and Charles III “Trip” — are involved with the daily operations of the farm. Chuck acts as manager, and Trip is the herdsman. Currently, the farm consists of 150 registered Herefords, 125 registered Angus and more than 400 commercial cows.

The family is committed to raising quality beef. “We strive to produce the best product we can for the consumer,” Chuck says. With this goal, the Aikens family utilizes the tools available to produce a quality product, including ultrasound, whole herd reporting, pelvic measurements, cow weights and body condition scores (BCS).

In 2001 the family purchased its first set of scales and made the commitment to utilize them as a tool.

“It’s not a lot of extra work, maybe a few extra steps, but we were already working cattle,” Chuck says.

The Aikens family takes the information collected and uses it to make herd management decisions. “We try to capitalize on the return of genetic advancement for the investment we make,” Chuck explains.

The Aikens family considers BCS a valuable tool in the selection and culling process. At weaning time, Chuck and Trip evaluate a low BCS cow and determine reasons why she is a management problem. Is it the age of the cow or the size of calf weaned? The father and son pay close attention to the percent of cow body weight the calf weaned.

“If a big cow weaned a small calf, she put too much into her own body, and this is a reason to cull a cow,” Chuck explains. “If a cow has a good BCS and weans a good-sized calf, we can try to propagate those genetics.”

Likewise, third-generation Hereford breeder Jim Coley of Castalian Springs, Tenn., says collecting cow weights and BCS is not a lot of extra work and is not hard to learn. “We have a set of Gallagher digital scales in the alley behind our squeeze chute,” he explains, “so the only extra work for collecting cow weights is to 1) turn on scales, 2) be sure the cow is standing on the scales and 3) record the weight. I was familiar with BCS scores from educating our dairy and beef customers at the co-op where I work, so it was no problem to start recording BCS scores.”

The Coley family started in the Hereford business in 1938 and currently has 30-35 brood cows and recipients. Jim says his goals are increasing performance as much as possible without increasing frame size and mature cow size. He is also working to improve Hereford bull demand in his area by raising and promoting bulls that are profitable for commercial producers. Since Jim works at Macon-Trousdale Farmers Co-op 50-60 hours per week, the cattle must be as problem free as possible.

“How long a cow is able to stay in the herd makes a big difference in her profitability,” Jim says. “The cow that weans a good calf while maintaining an acceptable BCS is more likely to breed and stay in her original breeding season. Selecting for performance and not keeping an eye on mature cow size could increase cow size to very inefficient cow weights.”

He is hopeful that when enough producers have submitted weights and BCS data an expected progeny difference (EPD) or an index will be available to help producers make better management and mating decisions.

“The process of submitting cow weights and BCS is a stepping stone to move our breed forward,” Jim summarizes. “It will then be our job as breeders to take the information and provide it to our customers to help them make buying decisions.”

Chuck agrees saying, “More data and documentation to prove the value of our breed is so important, so when we are talking to commercial producers, we have the data to back the product we are trying to sell.” **HW**

“This will be a trait that could really prove to be important to the genetic analysis,” he adds. “We are continually looking at ways to improve efficiency in the cow herd, and this data could be very important in finding the genetics that will make the proper changes.”

Getting started

Hall has taught body condition scoring to students and producers for several years, conducting workshops and research on the subject. He says the scores are a visual estimate of body energy reserves, so a trained eye and a notebook are all that is really needed when scoring cows. He does encourage producers to utilize reference publications before starting the process.

The most common BCS system ranks cows from 1-9 (See Figure 2).

Hall says for the novice, it is easier to learn the process if cattle are run through the chute and key areas of the cow are examined closely and felt. The key areas include hooks, pins, ribs, backbone and tailhead (See Figure 1). After the cow is examined in the chute and a score is given, based on palpating the key areas, the cow should then be viewed after being let out of the chute. This final observation will help train the novice’s eye. An experienced person helping during the first body condition scoring session is a great asset, Hall adds.

“The rancher who is experienced in body condition scoring can walk, drive or ride through a herd of cows and body condition score them by sight,” Hall says. “Alternatively, the cows can be brought to a corral for easier viewing.”

Collecting data

For utilization in Hereford cattle evaluation, the key time to collect and record BCS is at weaning, but the process of evaluating cow BCS is something that is useful year-round. According to Hall, there are four key times to BCS cows:

- 1) 60-90 days before calving;
- 2) Weaning;
- 3) Calving; and
- 4) Beginning of the breeding season.

“From a management perspective, 60-90 days before calving is the most important time,” Hall says. “Because of the clear relationship between BCS at calving and rebreeding success, we want to make sure cows are on target to calve in the ideal BCS. If they are too thin at this time, producers still have time to increase BCS on cows before calving.”

“The second most important time to score cows is at weaning. The BCS at weaning indicates the ability of the cow to adapt to the environment or the adequacy of the nutrition program. Also, weaning BCS can be used to determine which cows need to gain weight between weaning and calving. Finally, from a genetic evaluation perspective, BCS at weaning will be used to adjust the cow body weight at weaning to estimate mature cow size,” Hall explains.

Evaluating BCS is something everyone who helps on a farm or ranch should be trained to do, but for reporting purposes, it’s best for consistency if one person scores all the cows reported to the AHA.

Utilizing the data

BCS allows producers to sort cows according to nutritional needs, thereby improving the efficiency of their nutrition program. This is possible because of the strong relationship between body condition and weight change.

Hall explains that although it is critical to have cows in good condition at calving, BCS at calving can be used to plan the nutrition program from calving to breeding. Cows that are thin at calving but gain weight from calving to breeding have increased pregnancy rates compared to cows that remain thin. BCS at the beginning of the breeding season is an indicator of breeding season success. Cows that are thin at the beginning of the breeding season will respond to increased nutrition, but the effect on pregnancy rates may be limited.

Research shows that cows in BCS 5-6 at calving and breeding will have higher pregnancy rates than cows that are in BCS lower than 5. The critical body condition for first-calf heifers is BCS 6-7.

Hall says, aside from the optimum BCS differences, there is little difference in body condition scoring first-calf heifers, young cows and mature cows. “Older cows (older than 10 years) create a unique situation because the natural ‘sagging’ of the ribs and body tends to make backbone, hips and ribs more apparent in older cows,” he says.

“Cattlemen should concentrate on fat deposits in the brisket, tailhead and pins of these cows when making a BCS determination.”

Thin cows (BCS 4 and less) need to be managed to gain weight precalving and from calving to breeding in order to increase reproductive success, Hall says. Cattlemen may have to feed thin cows separately from the main herd to more economically increase BCS on these cows.

“Cows that are BCS 4 at weaning and have a large, healthy calf need only to be managed to gain weight and BCS to be at BCS 5 or 6 by calving,” he says. “Cows that are less than BCS 4 at weaning may indicate a mismatch between cow type and the ranch forage resource or an inadequate nutritional program.”

“Cows that are BCS 8 or 9 before calving can be placed on lower-quality feeds or pastures and allowed to lose weight until they are BCS 6 without reducing calf vigor or subsequent reproductive performance. In contrast, cows that are BCS 8 or 9 at weaning and produced a lightweight calf at weaning are unproductive cows that may need to be culled.”

Figure 3 is an example of the economic benefit of feeding cows by BCS, based on industry and research findings, that was printed in *Body Condition: The Beef Cows Energy Gauge*, produced by Elanco Animal Health. The example shows that feeding cows

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Figure 2: Dam's body condition score reference chart



PHOTO BY COURTESY OF TEXAS A&M UNIVERSITY

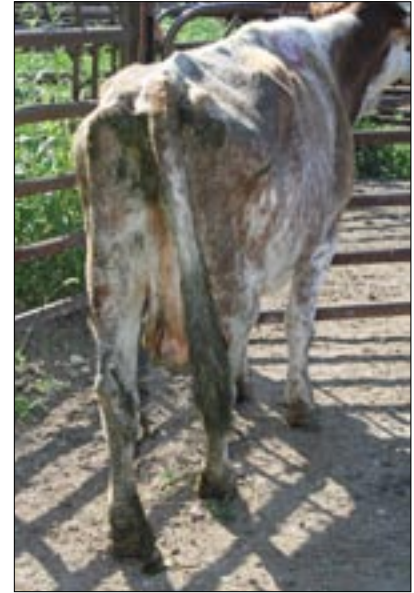
BCS 1
Emaciated

Cow is extremely emaciated. Tailhead and ribs project prominently. No detectable fat over backbone and hips.



BCS 2
Poor

Somewhat emaciated. Tailhead and ribs are less prominent. Backbone still sharp.



BCS 3
Thin

Ribs are less sharp but definable. Some fat on spine.



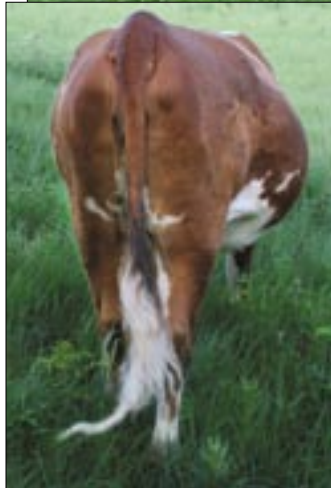
BCS 4
Borderline

Ribs not obvious. Some fat over ribs and hip bones. The backbone can be identified but feels rounded, not sharp.



BCS 5
Moderate

Good overall appearance. Palpable fat cover on the ribs.



BCS 6
High Moderate

Firm pressure needed to feel backbone. High degree of fat is now palpable over ribs and around tailhead.



BCS 7
Good

Fleshy condition. Carries considerable spongy fat over ribs and around tailhead.



BCS 8
Fat

Very fleshy and over-conditioned. Large fat deposits over ribs and around tailhead. Backbone almost impossible to palpate.



BCS 9
Extremely fat

Cow has lost definition. Hips buried in fat tissue, looks blocky. May be impaired in mobility. Bone structure no longer visible.

PHOTO BY COURTESY OF TEXAS A&M UNIVERSITY

Source: Whole Herd Total Performance Records (TPR™) User's Guide

Figure 3: Economic benefits of feeding by body condition

Item	Feed as One Group		Split Feed		Dollars Difference
	Thin	Good	Thin	Good	
Year 1					
100 day pre-calving BCS	4	5	4	5	
Calving body condition	4	5	5	5	
Number cows/age group	37	63	37	63	
Feed Cost (100 days)		\$6,739		\$7,364	(\$625)
Additional labor required				50 hours	(\$400)*
Call survivability rate, %	92%	97%	97%	97%	
Total weaned calves		95		97	\$770*
Year 2					
Estimated pregnancy %	80%	95%	90%	95%	
Total Number Pregnant Cows		90		95	\$1000*
Additional weaning weight				\$79 lbs.	\$483*
Net return per 100 cows					\$1228
Net return per thin cow					\$33.19

* An additional net four labor per day @ \$8/hour includes benefits.
 † \$50 to call with @ \$700.
 ‡ Market premium for pregnant vs. open cows \$200/pregnant.
 § 25 calves born 10 days earlier x 2.5 lbs. weight/day of age @ \$50/head.

in two separate groups nets \$1,228 more per 100 cows than group feeding. Assumptions made with the data include 1) cow herd age distribution (per 100 cows) based on North Dakota State University CHAPS records, which included 63 head or 63% are prime-aged cows averaging BCS 5 and 37 head or 37% (32 young and five old cows) averaging BCS 4, 2) dormant native grass, prairie hay, grain and 38% commercial protein supplement are feed sources used, 3) moderate calving weather is present.

To improve body condition, Hall says there's not a specific technique or feeding strategy; however, there are guidelines to increase BCSs.

For example if 45 days prior to calving a cow is a BCS 4, she needs to gain 1 BCS (40 to 85 lb.) in 45 days.

He encourages cattlemen to consult their local Extension specialist or nutritionist to determine the best nutrition program to fit their environment and available resources.

Calling for more data

"Our goals are pretty lofty for collecting cow data," Ward says. "In our strategic plan, the AHA Board set the goal of collecting cow weights and body condition scores on 70% of all dams in five years."

Ward says he thinks breeders do not collect and report cow weight and BCS data for several reasons:

1. They do not know they should.
2. Time is an issue. It is hard to get cows across scales during weaning time.
3. If they do not see an immediate return on their time and effort, they seem to lose interest.

Hall agrees and adds that another important factor could be that no one ever taught the producer how to BCS cows or that producers have limited

exposure to information. "Having an Extension professional or experienced producer assist cattlemen who are learning to body condition score is a big confidence booster," he says. "Secondly, is the normal concern that they will 'get it wrong.' Although, we are really concerned about the exact BCS number for research purposes (and for genetic evaluation), the objective on the ranch is to identify thin, moderate and fat cows."

Research shows that failure to monitor body condition prior to key production periods can be disastrous to cow herd productivity. Take the time to collect weights and score cows this fall, and then use the data to take action and improve the productivity of your herd and your customers' herds. **HW**

For more information

Visit the following Web sites to learn more about body condition scoring:

Feeding Cows by Body Condition

Kansas State University
www.oznet.ksu.edu/library/lvstk2/c842.pdf

Body Condition Scoring Beef Cows

Virginia Tech
www.ext.vt.edu/pubs/beef/400-795/400-795.html

Body Condition, Nutrition and Reproduction of Beef Cows

Texas A&M
<http://animalscience.tamu.edu/ansc/publications/beefpubs/B1526-bcsnutrition.pdf>

Body Condition Scoring of Beef Cows

Oklahoma State University
<http://osuextra.okstate.edu/pdfs/F-3283web.pdf>

Body Condition Scoring Web site

Angus Productions Inc.
www.cowbcs.info