

How to Body Condition Score Dairy Animals

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Routinely scoring the body condition of dairy animals can help detect potential problems that might cause a decrease in milk production.

As the production level of a herd increases, *body condition scoring* becomes more important. A routine program for body condition scoring can help detect potential health problems before they significantly reduce milk production. A herd of cattle in good body condition will produce more, and will be less susceptible to metabolic disorders, disease, mastitis and reproductive problems. Underconditioned cows are subject to health problems, and overconditioned cows are subject to calving difficulties, fatty liver syndrome and possible death.

It's important to body score heifers as well as the milking herd. Overconditioned heifers will not breed as easily and will have a higher incidence of calving difficulty. They also may have delayed mammary development that could decrease their lifetime production potential.

Body condition scoring is important to any producer planning to use Bovine Somatotropin (BST). BST should not be administered to any cow not in excellent body shape, i.e., not overly fat or overly thin, because it could cause lower milk production, extremely thin cows or fatty liver problems, and perhaps death of the animal. BST causes a cow to increase the conversion of body fat reserves to milk production. Therefore, if a cow is already thin, BST is not recommended.

Routinely scoring the heifers and milking herd will enable a producer to more effectively use the available feed reserves. Overconditioned heifers or milking animals should be fed less. The feed saved can be used to increase the body condition on those animals under the optimum level. Producers who routinely score their herd will be in a better position to reap the rewards of increased management efficiency.

Anyone can learn to score the herd body condition. All it takes is a little practice and time. In many cases, it may be better to have an outsider score the herd to obtain an objective score. Perhaps a DHI supervisor, dairy fieldman, veterinarian or neighboring producer would be suited to objectively score the herd. It might even be a good idea for dairy producers to score each other's herd.

Body condition scoring should be done on all animals at least three times during lactation, especially before administering BST. In large herds score at least 20 cows at each stage to obtain a reasonable estimate of the body condition in the whole herd. The three best times are:

1. Within one month after freshening so feed adjustments can be made on those cattle that have freshened too thin or too heavy.
2. During mid lactation.
3. At the end of lactation so rations during the dry period can be adjusted so body condition scores are optimum for freshening.

Cattle also may be scored at calving to monitor the effectiveness of the dry cow feeding program.

Heifers should be scored at least three times before they freshen. Calves should be scored at 6 months of age to be certain they are not gaining weight too quickly or too slowly. Either condition can affect mammary development. Score heifers near breeding age to avoid major reproductive failure. It is important to check heifers about two months before freshening so nutrient levels can be changed to avoid difficult births and metabolic problems after parturition. A chart of recommended growth rates for replacement heifers is shown in *Table 1*.

Research has shown that Holstein heifers that freshen at 24 months of age produce the most milk in their first lactation if they weigh between 1,200 and 1,300 pounds soon after freshening. Therefore the growth rates shown in *Table 1* for Holsteins are bare minimums.

Table I. Recommended growth rates for replacement heifers

Age (mo)	Ayrshire and Guernsey			Brown Swiss and Holstein			Jersey		
	Heart girth (in)	Weight (lb)	Height at withers (in)	Heart girth (in)	Weight (lb)	Height at withers (in)	Heart girth (in)	Weight (in)	Height at withers (in)
Birth	—	65	27	29	93	29	—	56	26
1	26	80	30	32	115	31	—	70	27
2	32	120	32	36	160	34	31	110	30
4	40	200	36	44	270	39	38	180	34
6	45	300	39	50	390	42	44	280	38
8	50	400	41	55	510	44	48	360	40
10	55	490	43	59	610	46	52	440	42
12	58	570	45	62	700	48	55	510	43
14	60	640	46	64	780	49	58	570	44
16	62	700	47	66	850	50	59	620	45
18	64	760	48	68	910	51	61	670	46
20	66	820	49	70	980	52	63	720	47
22	67	880	50	71	1050	53	64	770	48
24	69	950	51	73	1130	54	66	830	49

Two additional NebGuides pertinent to the topic of body condition scoring are:

- *Supplemental Fat for High Producing Dairy Cows* by Paul Kononoff, Jeffrey Keown and Richard Grant.
- *At What Weight Should Holstein Heifers Freshen?* by Jeffrey Keown.

These NebGuides can be obtained by writing to:

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or by accessing: www.nebraskadairy.unl.edu then click on: Dairy NebGuides and UNL Extension Publications.

How to Body Condition Score Dairy Cows

The **body condition score** is determined largely by the amount of fat covering the rump and tailhead area. The loin area also is evaluated. The final body condition score can be adjusted one-half score if the loin differs from the rump by more than one point.

Although most body condition scoring is done from directly behind the animal, it is a good idea to observe the cow from the side to get some idea of the depression in the loin area.

To begin scoring, stand directly behind the cow. Make sure the cow is relaxed because muscle tightness will result in inaccurate scoring. Observe the degree of depression around the tailhead. Then score the rump area by placing the hands on the pin bone and pelvic bone and feeling for the amount of fat covering. *Figure 1* shows the areas used for scoring and the major bone and muscle groups. Always use the same hand to score cows. Score the rump to the nearest one-half score. Then score the loin area in the same way, using the same hand, also assess this score to the nearest one-half unit.

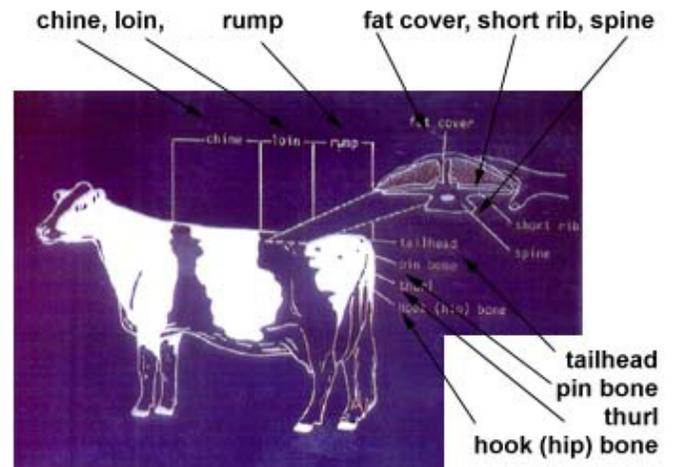


Figure 1. Areas of concern in body condition scoring

Table II gives desirable body condition scores for various lactation stages and various heifer ages. Due to normal animal-to-animal variation, expect a range in body condition scores among cows in the same lactation stage. However, if animals differ drastically from the given values, consider modifying their rations.

Table II. Desired and reasonable body condition scores of dairy cattle at critical times²

Time of scoring	Desired score	Reasonable range
Cows		
Calving	3.5	3.0-4.0
Peak Milk	2.0	1.5-2.0
Mid-lactation	2.5	2.0-2.5
Dry Off	3.5	3.0-3.5
Heifers		
6 Months	2.5	2.0-3.0
Breeding	2.5	2.0-3.0
Calving	3.5	3.0-4.0

Examples of Body Condition Scores

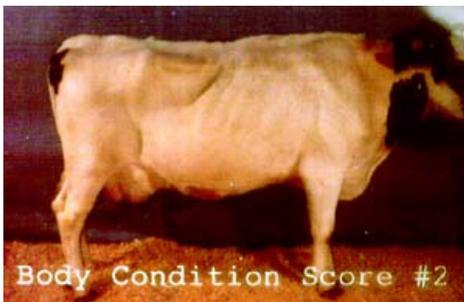


**Body
Condition
Score 1**

Body Condition Score 1

Rump Area: Deep cavity around tailhead. No fatty tissue felt between pins. Pelvic bone easily felt. Skin is supple.

Loin Area: Ends of short ribs sharp to touch. Upper surfaces can be felt easily. Deep depression in loin. Cows after having a severe DA are typically scored a 1.



**Body
Condition
Score 2**

Body Condition Score 2

Rump Area: Shallow cavity lined with fatty tissue at tailhead. Some fatty tissue felt under pin bone. Pelvis easily felt.

Loin Area: Ends of short ribs feel rounded. Upper surface felt with slight pressure. Depression visible in loin. High-producing, early lactation cows should score 2.



**Body
Condition
Score 3**

Body Condition Score 3

Rump Area: No visible cavity around tailhead. Fatty tissue is easily felt over whole rump. Skin appears smooth. Pelvis is felt with slight pressure.

Loin Area: Ends of short ribs can be felt with pressure. There is a thick layer of tissue on top. There is only a slight depression in the loin.

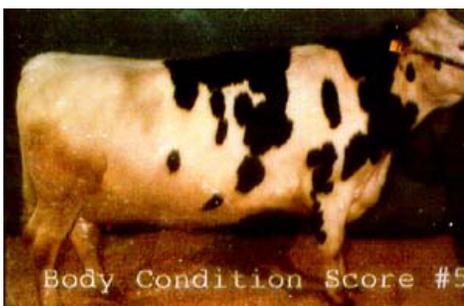


**Body
Condition
Score 4**

Body Condition Score 4

Rump Area: Folds of fatty tissue are visible around tailhead. Patches of fat are present around the pin bones. Pelvis is felt only with firm pressure.

Loin Area: Short ribs cannot be felt even with firm pressure. No depression is visible in loin between backbone and hip bone.



**Body
Condition
Score 5**

Body Condition Score 5

Rump Area: Tailhead is buried in fatty tissue. Skin is distended. No part of pelvis can be felt even with firm pressure.

Loin Area: Folds of fatty tissue over short ribs. Bone structures cannot be felt. These cows are good candidates for fat cow syndrome.

Table III lists some causes of undesirable scores and possible remedies.

Body condition scoring can be a valuable tool in fine tuning management skills as well as uncovering potential

problems in the herd. If a person rigorously follows a body condition scoring program, many day-to-day nutrition problems can be avoided.

Table III. Cause of undesirable body condition scores and possible remedies²

<i>Time</i>	<i>Score</i>	<i>Possible Cause</i>	<i>Remedy</i>
Cows			
Calving	High	Dry cows gaining excessive weight. Cows dry off in excessive condition. Cows dry too long.	Reduce energy in dry cow ration Reduce ration energy during the last one-third of lactation. Limit dry period to 60 days.
	Low	Dry cows losing weight on dry cow ration. Cows dry off in poor condition.	Increase energy and/or protein. Increase energy during the last one-third of lactation.
Peak	High	Cows fail to achieve peak milk production.	Increase crude protein in ration of 17%.
	Low	Cows too thin at calving. Cows lose weight excessively.	Adjust body condition during the last one-third of lactation. Increase/decrease grain to .76 MCal per lb of ration dry matter; raise fiber to 20% ADF, 30% NDF.
Mid	High	Cows fail to milk. Cows on high energy diet for too long.	Cull cows that fail to milk or that fatten excessively. Balance ration to meet energy needs in late lactation.
	Low	Cows not recovering from loss of condition in early lactation.	Maintain energy density of .76 MCal/lb; avoid switching to ration with much lower energy densities.
Dry off	High	Cows receive excess energy in late lactation. Cows not rebred on time.	Balance energy to cows ¹ productive needs. Consider culling.
	Low	Cows not gaining adequate condition during the last one-third of lactation.	Increase energy in ration during the last one-third of lactation.
Heifers			
6 months	High	Too much energy in diet.	Reduce amount of grain fed to 5 lbs/day.
	Low	Too little energy in diet. Disease	Increase amount of grain in diet; consider a commercial calf starter. Consult veterinarian.
Breeding	High	Too much energy. Lack of adequate protein.	Reduce amount of grain fed; limit amount of corn silage. Raise protein in diet to 13-15%.
	Low	Lack of energy in the diet.	Increase energy as grain and/or switch to higher quality forage.
Calving	High	Too much energy in diet.	Little danger to first calf heifer unless body score approaches 5.
	Low	Lack energy in diet.	Increase energy as grain and/or feed quality forage. Heifers should gain 1 condition score from breeding to calving.

¹Figures are from *Body Condition Scoring of Dairy Cattle*. R. Parker. Ontario Ministry of Agriculture and Food. Ontario, Canada, January 1989.

²Tables II and III have been adapted from *Body Condition Scoring — A Management Tool*. R.A. Patton, H.F. Bucholtz, M.K. Schmidt and F.M. Hall. Department of Animal Science, Michigan State University, East Lansing Michigan, September 1988.

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