

Winter Feeding of Bulls

Winter is the time to properly condition bulls for the coming spring and summer breeding season. Proper conditioning of bulls is important because bull fertility has a major impact in determining whether a cow will conceive and calve early or late in the calving season and thus influence calf weaning weight and uniformity. In addition, because of the high (1:25 to 1:50) bull:cow ratio used for natural service, the fertility of the herd bull is much more important than in any individual cow. Indeed, for the beef breeder, fertility of the bull is 5 and 10 times more important than growth performance and product quality, respectively.

Nutrition is the main factor, which influences "proper conditioning" of bulls and thus their fertility. How can we manage bulls so that they do not have impaired sex drive (libido) due to being either too fat or too thin? The target of the feeding program in winter is to allow the bulls to reach a moderate body condition score of 3 to 3.5 at breeding time (see [Table 1](#)).

Once the bull has passed the breeding evaluation, the feeding program to attain a body condition score of 3 to 3.5 involves knowing the rate of gain the bulls should achieve in order to achieve the desired mature weight. [Table 2](#) details target weights and daily gains necessary for growing bulls to achieve their full breeding potential.

Diet recommendations for 500 to 1200 pound growing bulls and not finishing are designed to result in a growth rate of 3.0 to 3.5 lbs per day. The following are targets to aim for when balancing rations for growing bulls:

- ❖ Dry matter (DM) intake – 2.7% of bodyweight at 500 lbs; 2.5 % of body weight at 1200 lb.
- ❖ Energy – % Total Digestible Nutrients (TDN) – 67.5% to 68.5% (DM basis).
- ❖ Crude Protein – 13.5 % to 14 % (DM basis).
- ❖ Calcium – 0.55% (DM basis)
- ❖ Phosphorous – 0.40% (DM basis).
- ❖ Calcium to Phosphorous ratio – within the range of 2:1 and 7:1
- ❖ Ensure that all trace minerals are adequate and vitamins A D & E are adequate.

Use a good quality alfalfa-grass hay or cereal silage and coarse ground or rolled barley or whole oats for feeding growing bulls. A protein supplement may be required or 2 to 3 lbs of feed peas, or lentils may be used to supplement protein. Feed an ionophore such as Rumensin® in order to improve feed efficiency and to reduce the potential of bloat occurring. Feeding the grain/supplement mixture in two equal portions each day is another practice that producers can use to reduce the risk of bloat. The above growing ration recommendations should provide an excellent opportunity for development of the frame and muscle of growing bulls without fattening them.

Adequate nutrition is equally important for young bulls after the breeding season for continued growth development and lifetime breeding potential. After the breeding season the growth rate should be about 2 lbs per day depending on the condition of the bull. Winter feeding of bulls that are 2 or more years old at breeding should be geared to reach the optimum breeding condition when they are put with the cows. If you calve in January-February, supplementary winter feeding of thin bulls (score of 2 or less) for gains as in Table 2 may be necessary. On the other hand, if breeding to calve in April-May, it may be possible to winter feed the same bulls at nearer a

maintenance level and depend on spring grass to bring up the condition by breeding time. Judgement on the exact level of winter feeding needed depends on the condition of the bull as he goes into the winter. Thus, if he is in moderate condition (score of 3 or more), you should feed for lower winter gains aimed to hold his condition so that he will not become too fat by breeding time.

There is no advantage to shoot for high rates of gain in growing bulls by feeding large amounts of grain. Do not coerce growing bulls to attain their maximum mature weight by overfeeding. Indeed, bulls that attain a moderate body condition score at the target weight for age for their breed have fewer breeding problems than bulls that have been over-fed and thus are too fat for their weight.

Table 1. The Condition Scoring System

Score 1:	The individual short ribs are fairly sharp to the touch and there is no fat around the tail head. The hip bones, tail head and ribs are visually prominent.
Score 2:	The short ribs can be identified individually when touched but feel rounded rather than sharp. There is some tissue cover around the tail head and over the hip bones and the flank. Individual ribs are no longer obvious.
Score 3:	The short ribs can only be felt with firm pressure. The areas on either side of the tail head now have a degree of fat cover, which can be easily felt.
Score 4:	Fat cover around the tail head is evident as slight "rounds" that are soft to the touch. The short ribs cannot be felt even with firm pressure, and folds of fat are beginning to develop over the ribs and thighs of the animal.
Score 5:	The bone structure is no longer noticeable and the animal has a "blocky" appearance. The tail head and hip bones are almost completely buried in fat and folds of fat are apparent over the ribs and thighs. The short ribs are completely covered by fat and the animal's mobility is impaired by the large amounts of fat.

Table 2. Target Weights and Daily Gains for Growing Bulls

Mature bull Weight in moderate Condition (lb)	Target weights (lb)			Minimum daily gain (lb)	
	Weaning at 200 days of Age ¹	14 mos. For Breeding ²	At 24 mos. Of Age ³	Weaning To Breeding	Yearling To 24 Month
1760	595	1100	1650	3.0	1.8
1980	615	1166	1760	3.0	2.0
2200	640	1232	1892	3.0-3.5	2.2
2420	630	1298	2024	3.5	2.4
2640	685	1364	2156	3.5	2.6

*1 Estimated as 26 to 34% of mature bull weight

*2 Estimated as 52 to 62% of mature bull weight

*3 Estimated as 82 to 94% of mature bull weight

References : Animal Production in Canada, 1993.
 Alberta Agriculture Beef Herd Reference Binder and Study Guide – 317, 1987
 CowBytes© Ration Balancing program Help Notes on Feeding growing bulls by B. Doig , copyrighted 1999.