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# Animal Science

Info Series: AS-B-226  
The University of Tennessee  
Agricultural Extension Service

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## Yearling Bull Management

James B. Neel, Professor and Neal Schrick, Associate Professor  
Animal Science, University of Tennessee

The management of yearling bulls has a large impact on both production and profitability of commercial cow-calf operations. Bulls have two important functions in purebred and commercial beef operations: (1) contribute to genetic improvement and (2) maintain high reproductive success. In most cow-calf operations, bringing a new bull into the herd is the primary way of making genetic improvement.

Yearling bulls must be properly managed so genetic potential and reproductive performance will be maximized simultaneously. An increased number of Tennessee commercial producers are purchasing performance tested yearling bulls such as those from the University of Tennessee Central Bull Test Station. Purchasing 2-year old bulls was the common practice 10 to 15 years ago. However, due to cost of raising and maintaining bulls, opportunity for profit is reduced for purebred breeders when bulls are grown to 2 years of age. It costs a purebred breeder approximately \$750 to \$1000 to raise a yearling bull. To carry a bull until it is 2 years of age drives the cost up to between \$1135 and \$1400; thus, leaving little or no profit. Because of this, yearling bulls will become more available than older bulls in the future.

In addition, yearling bulls should offer the opportunity for greater genetic potential than older bulls in that producers have a greater number from which to make the selection. Use of

yearling bulls also decreases generation interval which will speed genetic progress in economically important traits. This will make yearling bulls more attractive to commercial beef producers from a genetic improvement standpoint compared to older bulls.

The yearling bull represents a sizable investment to the commercial producer. Not only a financial investment, but an investment in both reproductive and genetic performance. However, with a great number of producers, the investment ends with the purchase. In reality, the investment should be just beginning. Additional investments in management, feed and care must be made if the bull's full genetic and reproductive potential is to be realized.

Management of yearling bulls can be divided into 3 basic periods. These are:

- |    |                              |            |
|----|------------------------------|------------|
| 1. | Pre-breeding or conditioning | 2 months   |
| 2. | Breeding season              | 2-3 months |
| 3. | Post-breeding season         | 7-8 months |

These periods can vary in length, but the basic management demands will be the same.

Following is a discussion of each period.

### **Pre-Breeding or Conditioning Management**

Yearling bulls should be purchased well in advance of the breeding season. Get the yearling bull on the farm at least 60 days prior to the start of the breeding season. This will provide time for bulls to adjust to their new environment, overcome the stresses of the sale and being moved to a new location. During this time, yearling bulls should receive a complete health program as well as a breeding soundness examination. Check with your local veterinarian in regard to developing a health program to ensure a profitable level of performance.

How bulls were handled up to the time purchased is an important item to consider in the feeding and management program. To do a good job of breeding, most yearling bulls should weigh no less than 1100 lb. at 13 to 16 months of age. If bulls were on a gain test and gained more than 3.50 lb. per day, they may be carrying excess body condition. This is not bad as the objective of the testing program was to evaluate the bull's gain. They do need to "hardened up" during the 30 to 60 days before the start of the breeding season.

Yearling bulls should continue to gain about 2.0 lb. per day during this period. This can be done by providing a ration with approximately 11 to 12 percent crude protein on a dry matter basis. The energy needs can be met with a 70 percent TDN ration-or the equivalent of 6 to 10 lb. of grain and all the medium quality hay or excellent pasture bulls can consume. See examples of rations in Table 1.

Exercise is a critical factor during this period. Bulls need to have lots of stamina, be very athletic and be able to travel many miles each day during the breeding season. As with any athlete, physical fitness does not occur overnight. It is up to the manager to help prepare and condition bulls by providing a good exercise lot of approximately one acre in size. If bulls have the opportunity, they will exercise themselves. Mother nature has provided them with that instinct. Bulls that are physically fit will have a higher degree of sexual drive and will remain sound. A companion animal, such as a steer, would aid in exercise.

### **Breeding Season Management**

Beef cattle producers have three goals in bull management to achieve during the breeding season: (1) get the cows pregnant as early as possible in the breeding season, (2) get the cows bred to bulls having superior genetic potential and (3) reach both of the above with the least costs.

The bull to female ratio is important in attaining these goals. However, this is difficult to accurately define because it is affected by so many other items such as distribution of females in the pasture, individual bull characteristics and management decisions made by the producer. Female distribution over a pasture will depend on the terrain, pasture carrying capacity, pasture size and water availability. Variation in the bull: female ratio would be influenced by age, condition, libido (sex drive), fertility, sperm reserve, social behavior and physical condition of the bull.

Management also has a big impact on the bull to female ratio. Management sets the length of the breeding season and influences health of the bull, both reproductive and structural soundness and care during the breeding season. However, the “rule-of-thumb” for the proper bull to female ratio is one cow per month of age of the bull up to 3 years of age. For example, a 15-month old bull could be run with 15 females and 36 cows could be exposed to a 3-year old bull (36 months of age), thirty six cows is the maximum number that should be allotted to a mature bull.

Because young bulls are still growing, they will need to be provided some extra feed during the breeding season. Continue to feed the 6 to 8 lb. of the ration fed during the pre-breeding period. The amount of feed fed during the breeding season can be increased as needed to maintain the bull’s condition. Continue to monitor the bull’s condition. Keep bulls in good condition, but do not allow them to become fat more than likely, becoming fat will not be a problem during the breeding season. A feeding stall would be of value to insure bulls would get their ration during the breeding season.

Keep a watchful eye on both bulls and females during the breeding season. Check the herd for “heat periods” or signs of estrus early in the breeding season. Estrus is the period when cows became reactive to mounting activity by bulls and other females. See if any females are returning to heat. Early detection of an injury or other problems and taking corrective actions are critical to getting cows bred early. Check on the herd at least once each day. It would be best to observe the cows twice daily for signs of estrus and also catch any problem that may have occurred since the last time the herd was checked..

### **Post-Breeding Management**

The care provided yearling bulls after the breeding season is critical if they are going to continue to have a long and productive breeding life. However, the sad commentary is that bulls do not receive the proper care on most commercial beef operations..

The manager should be concerned with the following items during the “off breeding season”.

1. Evaluate the bulls’ condition and, if needed, feed and manage them in such a way that they will be in moderate condition, a body condition score (BCS) of 6 at the beginning of the next breeding season.
2. Feed and manage yearling bulls so they achieve 65 to 75 percent of their mature size by the beginning of the next breeding season.
3. Prevent injury. Do not place young bulls in the same pens with older bulls that will physically dominate them. Additionally, keep the lot free of materials that could possibly cause injury such as wire, farm equipment and boards with nails. Again, you might want to consider a companion during this period.

After yearling bulls are removed from the cow herd, check their over-all general condition. During the breeding season, yearling bulls can lose a lot of weight and condition. In severe situations, bulls not only lose condition but lose muscle mass as well. Weight gain during the off-breeding season will vary and will depend on condition and length of time to achieve the weight gain. See Table 1 for suggested rations.

Yearling bulls should be managed so they will be in a body condition score of 6 when turned out at the start of the next breeding season as a 2-year old. This will help to insure that bulls will be strong, aggressive and active. Bulls should have enough extra condition to be able to call on their tissue reserves to maintain a high rate of activity and quality semen during the breeding season.

Rations for an 1100 lb. yearling bull to gain at various rates are outlined in Table 1. Excellent quality pasture can substitute for silage and hay. Furthermore all bulls, especially yearlings, should have free access to a high quality mineral mix that is readily available at most commercial feed outlets. Provide a health and parasite control program as outlined by a local veterinarian. Internal and external parasites should be controlled to provide yearling bulls every opportunity to recover from the rigors of the breeding season.

### **SUMMARY**

Purchasing and utilizing yearling bulls will become an even more common practice by cow-calf producers. This will be brought about by the reduced number of 2-year old bulls offered for sale due to the high cost of growing and developing, and the faster genetic progress that can be made through the use of yearling bulls. Proper care and management must be provided to these young bulls if both genetic improvement and reproductive performance are to be maximized.

**TABLE I**  
**POST-BREEDING SEASON RATIOS FOR YEARLING BULLS**

Feedstuff <sup>1</sup>	Average Daily Gain						
	3.0	3.0	2.5	2.5	2.0	2.0	1.0
	Pounds						
Shelled Corn	19	14	15	6	11	0	4
Corn silage	--	24	--	42	--	54	--
Alfalfa Hay	7	--	10	--	14	--	21
Protein Suppl. (32%)	--	.5	--	.3	--	.3	--

<sup>1</sup>Bulls should also have free-choice mineral mix. <sup>2</sup>Excellent quality pasture can substitute for silage and hay.

Reviewed by:

Dr. Fred Hopkins  
Professor of Animal Science and Large Animal Clinical Sciences  
University of Tennessee

Dr. Clyde D. Lane, Jr.  
Professor of Animal Science  
University of Tennessee

Dr. Ken Stalder  
Associate Professor of Animal Science  
University of Tennessee

*R12-4415-00-001-03*

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The University of Tennessee Institute of Agriculture, U.S. Department of Agriculture,  
and county governments cooperating in furtherance of Acts of May 8 and June 30, 1914.

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Charles L. Norman, Dean