

Managing the Yearling

Kansas State University beef specialist offers tips for managing yearling bulls before, during and after the breeding season.

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Yearling bulls represent a large commitment to beef operations. Besides their purchase prices, they are the future genetic material of the herd and can influence several generations of stock. Because yearlings still have a significant amount of growth and development ahead of them, they require a higher level of care and management than their older counterparts. This is especially true today, as yearling bulls can possess considerably more genetic potential for growth than their ancestors.

Management prior to breeding season

Nutrition management. One of the most common complaints of yearling bull purchasers is the run-down condition these bulls can exhibit after their first breeding season. Most yearling bulls are going to lose weight during their first

breeding season. However, minimizing the loss of body condition will extend a bull's usefulness and productivity.

Whether the bulls were developed on the ranch, in a commercial facility or at a centralized bull test, they were probably fed to gain from 2.5 to 4.0 pounds (lb.) per day from weaning to a year of age. After coming off of the test, and until they are turned out with females, they should continue to gain around 2.0 lb. per day.

Table 1 was created to show example diets formulated to grow yearling bulls. Intake is very important. Remember, bulls will generally consume 10%-15% more than a steer of comparable weight. Dry matter intake (DMI), energy and protein requirements, as well as diet formulation, are provided as a management aid.

Bulls grazing grass or cereal grain pastures may need a supplement. The correct supplement will depend



Yearling bulls are the future genetic material of the herd and can influence several generations of stock. (PHOTOS BY SHAUNA ROSE HERMEL)

on the quality and the quantity of forage that is available. Some will argue that bulls should not be pampered with grain supplements, but to ensure a long reproductive life, their basic nutrient requirements must be met.

Quality of forage is extremely important to formulating proper bull diets. Many diet formulations can easily satisfy yearling bull maintenance and growth requirements. For example, some producers will allow bulls to graze cereal grain pastures with minimal supplementation, while others will have to feed a complete diet in a drylot situation.

Fat vs. thin bulls. If yearling bulls are fat, they will need to tone

up before the breeding season. This may mean that energy intake will be set below levels indicated in Table 1. However, fat bulls should not be let down too quickly. Rapid weight loss may affect libido or fertility.

Conversely, thin bulls may need to be fed harder than indicated by Table 1. Ideally, yearling bulls should be purchased several months prior to their first breeding season so there is adequate time to prepare them for the rigors of the breeding season.

At turnout time, ideally, a yearling bull should exhibit a body condition score (BCS) of 6 (the upper end of Moderate on a scale from 1 to 9).

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Table 1: Diets formulated for 1,200-lb. yearling bulls to gain approximately 2.2 lb. per day^{a,b}

Ingredient:	Diet formulations			
	1	2	3	4
Prairie hay, lb./day	15.7	—	16.3	8.9
Alfalfa hay, lb./day	—	4.2	—	5.9
Corn silage, lb./day	—	52.5	—	—
Corn, lb./day	9.4	—	7.5	—
Grain Sorghum, lb./day	—	—	—	12.3
Soybean meal, lb./day	2.5	—	1.7	—
Corn gluten feed, lb./day	—	—	2.9	—
Limestone, lb./day	0.3	—	0.2	0.1
As-fed intake, lb./day	27.9	56.7	28.6	27.4
Dry-matter intake, lb./day	25.1	22.2	25.8	24.7
Nutrient composition:				
NE _m , Mcal/lb. ^c	0.65	0.71	0.63	0.65
NE _g , Mcal/lb. ^d	0.37	0.43	0.36	0.38
Crude protein, %	11.12	11.15	11.14	11.16
Calcium, %	0.6	0.6	0.6	0.6
Phosphorus, %	0.25	0.26	0.30	0.25

^aIngredient cost and availability will allow for a wide array of correct diet formulations to be used.

^bBulls weighing more or less than 1,200 lb. can be fed to gain approximately 2.2 lb. per day by adjusting dry-matter intake to approximately 2.2% of body weight.

^cNet energy for maintenance in megacalories per pound.

^dNet energy for growth in megacalories per pound.



Bulls grazing grass or cereal grain may need a supplement, depending on the quality and the quantity of available forage.

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Successful bull management gets cows bred early in the breeding season, optimizes weaning weights and increases profits.



Protein requirement. After achieving their first birthday, bulls' protein requirements settle to about 11% of their total diet, depending on their DMI. Usually, this requirement can be met by adding 1 lb. of protein supplement per day to the grain portion of the diet. If high-quality forage (pasture or hay) is fed, the additional protein supplement may not be needed.

Forage testing and balancing the diet will pinpoint supplemental needs.

Mineral requirements. Calcium (Ca) and phosphorus (P) are major minerals. Diets that contain approximately 0.60% calcium and 0.30% phosphorus are sufficient to meet dietary goals. The ratio between calcium and phosphorus should be maintained at 2:1 or greater (a minimum of 1.5:1). In addition, trace mineral requirements should be met.

Research has shown that feeding zinc (Zn) at 60 parts per million (ppm) of the diet is beneficial to male reproduction. Other trace minerals like copper (Cu), manganese (Mn) and selenium (Se) should be monitored. Many commercial sources of trace minerals are available. If desired, a mixture of 40% dicalcium phosphate (DCP), 20% limestone, 30% trace mineral salt and 10% selenium 90 premix can be used.

Vitamin requirement. Any diet that includes high-quality, green forages should provide enough vitamin A to meet a yearling bull's requirement. Vitamin A is inexpensive to feed, and, therefore, diet fortification around 30,000 international units (IU) per day would be cost-effective. If forages are weathered and/or of low quality, vitamin A becomes a real concern. An intramuscular injection of 3 million IU of vitamin A is advisable to avoid any deficiency. Injectable vitamin A will maintain adequate liver stores for about 100 days.

Breeding soundness exam. All yearling bulls should have a complete breeding soundness exam (sometimes referred to as a BSE) prior to herd turnout. A complete exam includes a scrotal circumference (SC) measurement, a semen exam and a physical exam. Research has reported that bulls with scores greater than 71 have a dramatically higher conception rate than those scoring 70 or fewer points in a breeding soundness exam.

When compared to the cost of using a sterile or substandard bull, the money invested in a breeding soundness exam is well-spent.

Table 2 can be used as a guide for minimum SC measurements. Research

Table 2: Guidelines for minimum scrotal circumference measurements^a

<u>Age of bull</u>	<u>Minimum SC, cm</u>
15 mo. or younger	30
15 to 18 mo.	31
18 to 21 mo.	32
21 to 24 mo.	33
Older than 24 mo.	34

^aGuidelines for Uniform Beef Improvement Programs, Beef Improvement Federation, 8th Ed., 2002.

indicates that bulls with larger scrotal circumferences are more fertile and tend to be more sexually mature than their lesser-endowed contemporaries.

Generally, bulls should have a SC of 32 centimeters (cm) or more by their first birthday for breeding considerations.

Foot care. A structurally sound, yearling bull should not require any foot care. Occasionally, however, foot rot, toe ulcers and abscesses develop and require immediate attention.

Excessive hoof growth may call for a foot trimming. If trimming is needed, it should be done well in advance of the breeding season (three to six weeks) so the bull can recover from any soreness the trimming may cause.

Housing. Exercise is important for good health and fitness. Many times yearling bulls need to be hardened up prior to the breeding season, and the best accommodations are outside lots, fields or pastures.

Bulls should be protected from severe cold and heat prior to turnout. Providing bedding during winter and spring storms will protect testicles from frostbite. Likewise, extreme heat can be detrimental to sperm production.

Immunizations. The newly purchased bull should be vaccinated against infectious bovine rhinotracheitis (IBR), bovine viral diarrhea (BVD), parainfluenza-3 virus (PI₃), leptospirosis and vibriosis. It is also a good idea to immunize him with a seven-way clostridial bacterin.

The total costs of these vaccines are minor when compared to the cost of the diseases. Knowing the vaccination history will greatly influence your vaccination decisions.

Bulls should also be treated for internal and external parasites.

Management during breeding season

Age and size. Assuming all other factors are in good order (breeding soundness exam, body condition score, feet and legs, health, etc.) the bull should be at least 13 months old and weigh a minimum of 1,100 lb. before being turned out for the first time. The older and larger he is, the better his chances

are of coming through his first breeding season without problems.

Number of females. Setting absolute guidelines for cow-to-bull ratio is difficult because there are several variables that have an impact on this number. Examples are a bull's age, size, condition and sex drive. Environmental factors like size of the breeding pastures, type of terrain,

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Table 3: Guidelines for scrotal circumference measurements^a

<u>Age</u>	<u>Large</u>	<u>Adequate</u>	<u>Small</u>
12-14 mos.	>34 cm	30-34 cm	<30
15-20 mos.	>36 cm	31-36 cm	<31
21-30 mos.	>38 cm	32-38 cm	<32
Over 30 mos.	>39 cm	34-39 cm	<34

^aInformation from Ron Bolze, former director of genetic programs for Certified Angus Beef LLC (CAB).



Bulls should be protected from severe cold and heat prior to turnout. Providing bedding during winter will protect testicles from frostbite. [PHOTO BY CORINNE PATTERSON]

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climate and length of the breeding season can also affect the correct cow-to-bull ratio.

A yearling bull will not be able to service as many cows as an older counterpart. As a rough guideline, however, the working range is approximately 10-25 females per yearling

bull during a 45- to 60-day breeding season.

Length of breeding season. A maximum of 45-60 days is an ideal length of breeding season for yearling bulls. Ninety days is an absolute maximum.

One method of saving wear and tear on a yearling is to turn him out after an older bull has been with the herd for the first one or two heat cycles. Rotating bulls

through the breeding pastures assures that a lazy or injured bull's tribe is covered by his mates.

Regardless of management style, it is usually not advantageous to run yearling bulls with cows for long periods of time. They will waste a considerable amount of energy chasing cows, losing body condition instead of building up reserves for the next breeding season.

Observation. Try to observe the yearling bull closely to make certain he is detecting heat and breeding cows. Also, keep an eye on his condition. If he is getting too thin and rundown, he needs a rest. Thin bulls are more apt to hurt themselves, become less fertile and have increased nutritional needs after the breeding season.

Yearling bulls should not be pasture-mated to cows that are extremely large. Physically, this height mismatch may cause injury and failure to mate properly.

Running multiple-bull breeding batteries. Research shows that when bulls are run together in a breeding pasture, they should be as close to the same size and age as possible. Larger, stronger, older bulls tend to dominate smaller, younger bulls and may prevent them from performing satisfactorily.

Care after the breeding season

Feeding. Yearling bulls will probably lose 100-300 lb. during their first breeding season. In addition to gaining back this weight during their first rest, they must also gain enough body mass to achieve 75% of their mature weight by their second birthday.

For example, if a bull's potential mature weight is 2,000 lb., he should weigh at least 1,500 lb. at 2 years of age. If he weighed 1,250 lb. at turnout time as a yearling and lost 200 lb. during the breeding season, he would need to gain about 2.0 lb. per day during the nine months until his second birthday. In order to gain 2.0 lb. per day, coming 2-year-old bulls may need to be fed 13 lb. of grain, protein supplement and a full feeding of hay.

High-quality forages could be utilized to reduce the grain and supplement portions of the diet. A word of caution: Do not try to bring a bull back too fast with too much grain, or you risk foundering him.

Health management. In the fall, after the first breeding season, treat the bull for internal and external parasites. The following spring, when he is a 2-year-old, deworm him again and give him annual booster vaccinations against the diseases listed earlier.

Summary

Yearling bulls are some of the most valuable animals on a ranch. Proper care and management can have a positive influence on herd fertility. Successful bull management gets cows bred early in the breeding season, optimizes weaning weights and increases profits.

Most yearling bulls can be used effectively, if they are critically selected, properly developed and carefully managed.