

Manage Yearling Bulls to Optimize Performance

How you manage your yearling bulls before, during and after the breeding season is important.

by *Stephanie Veldman*

Many factors in your breeding season will affect the longevity and usefulness of the bulls you use, according to Twig Marston, Kansas State University (K-State) Extension beef specialist. Managing yearling bulls correctly to bring them through adolescence is important because they still have a significant amount of growth and development ahead of them, and they require higher levels of care and management than do more mature bulls.

Marston spoke on proper yearling bull management at the 4-State Beef Conference in Saint Joseph, Mo., on Jan. 15, 2003. He works with the Kansas Bull Test, developing 200-300 bulls each year.

"We have to remember that, just like people and just like cows, bulls go through different stages of their lives," Marston says. "We need to look at those bulls at different stages — how they progress and how they mature. This will define how successful they will be in that next phase in their lifetime production.

"What is the No. 1 complaint we get back from our bull customers? The bulls are falling apart when they come off the test or when they come off their first breeding season," he says. "We've got to look at ways to manage these cattle."

Bull growth

When considering bull development, the logical place to start is with nutrition, Marston says. There are a hundred ways to

feed bulls and not a single way is wrong — "whatever works to find the genetic differences in those bulls, as long as you don't do any bodily harm."

He adds that one of the most common complaints from yearling bull buyers 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," Marston says. "However, minimizing the loss of body condition will extend a bull's usefulness and productivity." To do this, bulls should gain around 2.0 pounds (lb.) per day from the time they come off test to when they are turned out with females for the breeding season.



► Bulls should gain around 2.0 pounds per day from the time they come off test to when they are turned out with females for the breeding season, says Twig Marston, Kansas State University.

A yearling bull should be at about 65% of his mature weight before his first breeding season. During the breeding season he will probably lose between 100 lb. and 300 lb. In addition to having to gain the lost weight back between breeding periods, he needs to develop to about 75% of his mature weight before his second birthday.

"For example, if a bull's potential mature weight is 2,000 pounds, he should weigh at least 1,500 pounds at 2 years. If he weighed 1,250 pounds at turnout time as a yearling and lost 200 pounds during the breeding season, he would have to gain 2.0 pounds per day during the nine months before his second birthday," Marston says.

Table 1 (on page 182) contains potential diet formulations to allow a 1,200-lb. yearling bull to gain approximately 2.2 lb. per day.

Body condition

Marston warns that if your yearling bulls are fat, they will need to tone up before breeding season begins. "We don't want them too fat or too thin; we want to get them fit. That requires exercise and muscle tone," he adds.

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Changing body conditions requires producers to have knowledge of how bulls put on weight. If a producer has a thin bull and his goal is for him to be moderately conditioned, the bull will put on a combination of fat and muscle. If a bull is going from moderate to fat, almost 100% of the additional weight will be fat.

“Because of the difference in body composition, these diets need to be different to get the desired results,” Marston says. “I don’t know why we want any fat bulls, unless you want them to hurt their feet and hurt their testicles.

“To get them in the right kind of shape you need to remember the protein and the muscle building we have to do on those bulls,” he adds.

Scrotal size is important in how well a bull will breed. Adequate size is 30-34 centimeters (cm), which can be illustrated by holding two soft drink cans together. Even though 30 cm is published as a minimum, raising the scale to 32 cm ensures the bulls have a pretty good chance of passing their breeding soundness exam (often called a BSE).

Table 2 can be used as a guide for scrotal circumference measurements.

Breeding soundness exams

Marston considers breeding soundness exams to be critical to any breeding operation. A complete exam includes a scrotal circumference measurement, a physical and structural examination of feet, legs, general health and physical condition, and a semen test.

“You get a bull that is too straight in his shoulder, too straight in his hock, too straight in his posture, given time that bull is really going to hurt himself,” Marston says.

He adds that research has indicated that bulls that score 71 or higher on a breeding soundness exam have much higher rates of conception than bulls scoring 70 points or less.

“This is probably the cheapest insurance policy that you’ve got, to know that you aren’t shooting blanks,” he says. “If we miss in a set of cows — a 1% to 5% conception rate below what we think we should get — it is a cow problem. If we get 50%, 25% or nothing, that is a bull problem almost 100% of the time.”

The Beef Improvement Federation (BIF)

guidelines indicate “Approximately 20% of all beef bulls have some degree of infertility. A thorough breeding soundness examination ... can detect the majority of bulls having obvious fertility problems and should be performed annually on all bulls two to four weeks before the start of mating.”

Marston also encourages producers to give their bulls a breeding soundness exam every year to ensure that all their bulls are fit. Veterinarians or allied professionals who are experienced should be able to conduct the exam.

Age and size

After looking at other factors that can affect a bull’s performance, producers should not forget the age and size of their bulls. The bull should be a minimum of 13 months old and weigh a minimum of 1,100 lb. before he is turned out for the first time, Marston says.

He stresses that age and size of the bull need to be kept in mind. He can’t be managed on the pasture like a mature bull. The length of season makes a big difference, as does the size of the cows he is servicing.

“You leave him out there 45, 60 or 90 days, he will only stop if he is hurt. The length of the season is really important for these bulls. I like to see it limited to 45-60 days at the most,” Marston says. He adds that using artificial insemination (AI) will shorten the breeding period for the yearling bull without giving up days in the breeding season.

The number of females he is expected to service is also important. A mature bull can run with a lot of females. Marston says a good rule-of-thumb for a yearling bull is for him to be turned out with one cow for every month of age that he is.

“A 12-month-old bull can be turned out with about 12 cows,” he says. “Probably 10-15 is enough for him to work on. Remember, it is not just about his getting the cows inseminated, it is about his learning how to be a bull.” Observing the bull regularly

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

	Diet formulations			
	1	2	3	4
INGREDIENTS:				
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
INTAKE:				
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
Phosphorous, %	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. will gain approximately 2.2 lb. per day by adjusting dry-matter intake to approximately 2.2% of body weight.

^cNE_m is the net energy of the diet distributed to maintenance, measured in megacalories per pound.

^dNE_g is the net energy of the diet distributed to gain, measured in megacalories per pound.

Table 2: Guidelines for scrotal circumference measurements, in centimeters (cm)^a

Age:	Large	Adequate	Small
12-14 months	>34	30-34	<30
15-20 months	>36	31-36	<31
21-30 months	>38	32-38	<32
>30 months	>39	34-39	<34

^aInformation from Ron Bolze, Colby, Kan.

throughout the breeding season will help ensure that he is working.

Marston notes that if all the cows in a herd are cycling, odds are, about 5% of a breeding herd will exhibit estrus in a 24-hour period. "If that bull steps on a nail, gets rammed in the shoulder, blows out a hock and is down for two days, how much of the breeding season have you lost? Maybe up to 10% of your cows.

"I think it is very important that when we turn these bulls out we watch them, we make sure they know to go from one cow to the other," Marston says. "If we find a problem, fix it immediately."

Marston says one of the keys to a successful breeding season is planning.

"Have a plan for those yearling bulls. Where are you going to put them? How are you going to develop them? Where are you going to turn them out? How many are you going to turn them out with?" he says. "Most yearling bulls can be used effectively if they are critically selected, properly developed and carefully managed."



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