



PHOTO BY ANGIE STUMP DENTON

Managing Bulls for Optimum Production

by Heather Smith Thomas

A producer's calf crop depends on the bull or bulls he puts with his cows. The care and management given to the bulls during their off-season, when they are not out with the cows, can make all the difference in whether or not they can do their job.

Ron Skinner, DVM and seedstock producer from Drummond, Mont., says the important things to consider in off-season bull care include balanced nutrition, a good health program that includes proper vaccination, exercise and protection from harsh winter weather.

Yearling bulls need TLC

If you're using yearling bulls, they should be brought in after the breeding season for a little extra care to give them a chance to regain body condition. They need extra consideration until they are 2 years old.

"They have lost some weight and need to regain it," Skinner explains. "In one trial, yearling bulls on average lost 170 lb. during their first breeding season. The actual individual losses ranged from 50 to 200-plus lb., depending on how the bulls were conditioned (the weight they were carrying) before they went out."

Yearling bulls are still growing, needing a lot of protein and energy. Their management is no different from dealing with heifers; they need energy for growth and reproduction, and some of them may be shedding baby teeth and gaining their permanent teeth. A bull's first season can be hard on him, just as a first-calf heifer has a lot of stresses when nursing her first calf, growing and trying to rebreed on schedule.

"It's good for those young bulls to get a chance to come back in and have a little extra care," Skinner says. "With our own bulls, in our experience, it seems like it doesn't take them very long to bounce back. Within 60 to 90 days (or 2 years of age), they are back to a body condition score of 6 to 7. After that, they seem to be able to hold their body condition quite well for the rest of their life."

"I usually don't need to worry about them, other than monitoring body condition. If older bulls come out of the cows in good shape, they can get along fine on very average pasture, like a dry cow. Once a bull develops enough body mass and has his mature growth, he's good to go. However, if you leave a young bull out or just throw him out on mountain pasture when you pull him out of the cows without giving him an opportunity to regain the weight, it's tough on him," Skinner adds.

Nutrition

"You need to monitor the condition of all your bulls, just like you would your cows," Skinner says. "Inadequate nutrition is detrimental to the fertility of both. Semen production of an underfed young bull, up to 45 months of age, is only 77% of the production of an adequately fed bull. If a bull has malnutrition and is in a tough situation, his semen production

will drop to that lower figure easily. If you don't give him the proper tools to work with, he cannot perform at his peak."

Skinner says it is interesting that if a young bull is allowed to get too thin, he will still lag behind in his semen production for the rest of his life, even if his nutrition is brought back up to speed. "People often don't realize this, but this was shown in a study that was done many years ago by T.D. Rich at Oklahoma State," he says.

Poor energy levels will delay puberty. "A young bull that is not developed properly nutritionally will be slower maturing, so the purebred breeders who are developing bulls need to have them on a proper energy ration — not too much and not too little," Skinner explains. "If bulls are going out to work as yearlings, they need to be developed at a proper level. A 2.6-lb. average daily gain is an ideal rate of gain. There is some debate over this, however, because most young bulls are being fed to gain 3 to 3.5 or even 4 lb. per day. You want that bull to be bloomy, but you don't want him to be fat."

A young bull that is overly fat may have fertility problems. "He may also have less testicle size," Skinner explains. "There is a tendency to increase testicle size with fat deposition in the scrotum, but the lack of circulation, due to the extra fat, has a tendency to decrease actual testicular tissue (hence less size — less scrotal circumference — after the fat is lost). Therefore you end up with less semen production."

Most breeders realize that fat decreases fertility, but they want their bulls to look good in the spring, since ranchers still tend to want the bulls that are big for their age and have shown how much they can gain. People still get hung up on this, and it's

hard to get by the old idea that fat is pretty. Skinner says that in practicality, however, a daily gain of 2.6 lb. is optimum.

"While at the University of Missouri, Robert Larson, DVM, did some good research on this, following those bulls out for an extended period of time, evaluating semen production and quality later in life," Skinner says.

"Excessive energy levels, getting bulls too fat, will also decrease their libido, especially in older bulls. If you overfeed them and they are too fat in the spring, they will be lazier because they just can't move well until they get some weight off," he says. Bulls need to have some reserves, however, especially a young bull that is out for the first time breeding cows; he needs to have something to draw on when he doesn't have time to eat. You don't want him fat, but you want him in good condition.

"If we don't take care of bulls properly during their growing period or during their off-season, when they are not with the cows (and they are short-changed on nutrition), there is a greater chance of sub-optimal fertility. Then we end up with less cows bred and settled in their first cycle and a strung out calf crop. You'll have a lower average weaning weight due to a higher percentage of late calves. You should have at least 85% of your calves from the cows' first 2 cycles during breeding season, depending on the condition and fertility of the cows, the type of breeding pastures, etc."

A good mineral program is an important part of your nutrition management. You need a balanced program with the appropriate levels of trace minerals

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to complement your feeds. "You have a substantial investment in good bulls if you are trying to improve your calf crop and your cow herd, so you need to take care of that investment."

Disease protection

Bulls should be on a good health care program, just like your cow herd. "There are four things that can play a role in cattle health, and the fertility of a bull — nutrition, genetics, disease and stress that recrudesces disease. Reproduction in a bull is no better than the weakest link in that chain," Skinner says.

If any of these factors creates a problem, fertility will be compromised. The bull may be infertile or may have sub-optimal fertility.

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PHOTO BY SHARON WYMAN

Skinner says it is important to pay attention to bulls in adverse cold weather, especially if there's wind. "If weather is severe, use bedding if necessary, to protect the bulls' testicles."

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A low pregnancy rate in the first half of the breeding season — in the cows being bred by a certain bull — may be the result of sub-optimal fertility due to any one of those factors. “If you have a bull in a single sire group that is not getting as many cows settled as he should, it could be that he’s still fertile but not as

fertile as he should be due to a weak link in that chain,” he explains.

“The bull may not have optimal fertility because he is exhausting his semen supply and is not producing semen as well as he should,” Skinner says. “If a bull is being used very heavily, usually a seven-day rest will bring him back

to full speed, regarding semen count or production.

“Rotating bulls in and out of the cow herd (in for a week, out for a week) is not a bad strategy, but if a bull is healthy, heavy use is not damaging to his reproductive abilities — unless he injures himself.” He may deplete his semen supply under heavy use but should be able to come right back with a short rest, even just an overnight rest, if he only bred two to three cows that day, since there are always more sperm developing. If a bull is trying to breed numerous cows each day and is dragged down nutritionally, however, this is the bull that needs to be out for a week, not just overnight.

Bulls need to be vaccinated before breeding season. Often they are neglected or left behind in all the cattle processing. Then it comes time to turn the bulls out, and they haven’t been vaccinated.

“Bulls should be vaccinated well ahead of the breeding season,” Skinner advises. It’s not wise to vaccinate bulls the day you turn them out. Depending on age of the bull and what you vaccinate for, the time it takes for immunity to develop after vaccination can vary. A booster shot does not take as long as a first time shot. If the bull has stresses, or reactions from vaccination, these problems may compromise his abilities for a while during the start of breeding, depending on the vaccine.

“IBR (infectious bovine rhinotracheitis) vaccine, for instance, should be given long enough ahead of time that the animal, if stressed, can get past any recrudescence of the IBR virus and any shedding of the virus,” Skinner explains. “This may take two weeks, but if you give the vaccine 30 days ahead of time, the bull should no longer be shedding by the time you turn him out.

“Some people will tell you it’s better to vaccinate at least 60 days ahead so that if the bull

Other fertility factors

Age can make a difference in fertility. A bull’s highest fertility is at 2 to 4 years of age, on average. “After 4 years there may be some decline in fertility, but this is not very noticeable until a bull gets to be 5 or 6 years of age,” says Ron Skinner, DVM and seedstock producer from Drummond, Mont.

“At 7 years, on average, you start to see a more rapid decline. This will depend on the individual bull. There are some bulls that will have good fertility at that age and others that will fall apart on you by then, according to trials that were done in Oklahoma by T.D. Rich,” Skinner says. “The 5- and 6-year-old bulls may not have declined significantly from their peak fertility at age 4, but it will depend on their genetics.”

Weather is also a factor. “In 100 degree weather, a bull loses some breeding capability and fertility, and this is something we have no control over. Heat is detrimental to sperm production. Thus a bull that’s been through a high fever will also be infertile for a while. His semen may be OK for a few days after the fever (because the sperm that were already mature will be fine), but he will be in trouble later. It takes 60 to 63 days for sperm cells to develop,” Skinner says.

Closely monitor your bulls year round. If a bull gets sick and ends up with a fever, you should definitely have him checked before he breeds cows — especially if you are using single-sire breeding groups. You need to be watching your bulls during the last two months of their off-season, before you put them out with cows, to know that they are fully functional.

Semen evaluation should be done on all bulls before turnout, unless you will have several bulls out there. Everyone tries to figure out ways to cut expenses, but the expense of a breeding soundness exam usually pays off. The problem you can get into if you don’t check your bulls is that if you have four bulls out with 100 cows and the dominant bull is infertile or sub-fertile, his problem may negatively affect your calf crop even though the other bulls are fertile.

“The dominant bull usually sires 60-plus percent of the calves. If he’s infertile, this really cripples you, as he may keep the other bulls from breeding, even though he’s not settling the cows,” explains Skinner. So having even one bad bull in a multiple sire group can be a significant problem.

“Some of the bulls with sub-optimal fertility may not be detected with a typical semen test and breeding soundness exam, however. A bull may have plenty of semen on that day, since he hasn’t been breeding cows,” says Skinner. As soon as he goes out to breed cows, however, he tends to run out of sperm because his production may be poor. If you keep him out of the cows for 48 hours, he may be OK again, but this kind of bull won’t settle as many cows as a more fertile individual.

“Libido is also something that can’t be evaluated during that exam. You have to watch the bulls after they are out with the cows. This is especially important in single sire breeding groups. You have to make sure that young bulls figure it out,” he says.

Feet and soundness are also important. A bull may be fertile, but if he can’t get around or is in pain or uncomfortable from feet/leg issues or becomes unsound, he won’t breed very many cows. Always check feet and legs before bull turnout. **HW**

has a fever, he'll have a new batch of sperm cells by breeding time. But the bull will be going through a stress period as soon as he goes out with the cows, that first 30 days, and he needs some immunity. We find that IBR recrudesces in a cow during the stress of estrus, and if you are going into a herd with a bull that is not properly vaccinated, he is apt to be challenged from that cow herd."

You want a bull to have peak immunity to protect him during that first 30 days, as well as no temporary impairments from his own vaccination that might hinder his fertility or ability to breed cows at this crucial time, so vaccinate him several weeks ahead of turnout.

In many cases you will be vaccinating semi-annually (fall and spring), depending on your area and your veterinarian's advice. So plan ahead and have a good vaccination program for the bulls, just as you would your cows.

Exercise

Bulls need exercise during their off-season, so they will be fit and athletic before they go out with the cows. "They are athletes, and you will decrease the incidence of injuries if the bulls are physically fit at turnout," Skinner says. "Just like a football player, a horse or any other athlete, there will be less injuries if bulls are fit."

An athletic bull can cover the territory and spend more time chasing and breeding cows without tiring than a soft, out-of-shape bull.

"If you lock bulls up in a small pen with no exercise and feed them heavily, this is detrimental to optimal breeding conditions," Skinner says. "Bulls need to be in a large area, where they can self-exercise during winter, but you still need to manage and take care of them and not just forget them. Some people turn their bulls out on a mountain pasture, thinking

they'll be fine because there's water up there and a lot of old feed. They may do fine in that situation, but if the grass is dry, they will need supplementation and monitored for body condition score. Our herd bulls stay up in the mountains but we do try to monitor them."

Protection from weather

Skinner says it is important to pay attention to bulls in adverse cold weather, especially if there's wind.

"It's critical that they can get out of the wind," Skinner says. "If weather is severe, use bedding if necessary, to protect the bulls' testicles. It is very important — to have windbreaks and bedding."

One thing that can compound a cold weather problem is compromised blood circulation due to ergot or endophyte fungi. "I've seen this become a problem in normal bull management," Skinner says. "There can be ergot in brome grasses and quack grasses, etc. This can be devastating to bull testicles during cold weather, since it decreases circulation to the extremities."

In some cases cattle will lose ears and tails, or even feet, due to ergot toxicity. Bulls can suffer testicular damage with just a low level of ergot toxicity.

"I've seen bulls freeze their testicles in weather that was actually not very severe just because of the circulatory problem due to ergot in some of the grasses. It's not just a grain problem," he says.

Cottonseed caution

Whole cottonseed is a feed that should be avoided for bulls, especially young bulls. "The glossypol in cottonseed can cause trouble," Skinner explains. "If you feed any cottonseed-type supplement, such as for a protein source, make sure it doesn't contain any glossypol because it can certainly be damaging to testicles."



PHOTO BY MARY ANN SCHREMMER

Bulls' condition should be monitored just like cows. Malnutrition as well as over-feeding can lead to decreased semen production.

Glossypol fed to young growing bulls (6 to 12 months of age) results in a decrease in sperm production and an increase in sperm abnormalities. "If there's a low level of glossypol, it will adversely affect the mid-piece of the tail (of the sperm cell), and if there's a high level, it will make the bull completely infertile," explains Skinner. It can also adversely affect sexual behavior in bulls.

A recent study showed that in order to avoid problems, the use of whole cottonseed should be limited to 10% or less of the total diet for young bulls, even though it may be an acceptable feed for mature bulls during part of the year.

One recommendation is that bulls should be taken off whole cottonseed for at least 90 days prior to the start of the breeding season to ensure that there will be new sperm present that were not negatively affected by glossypol. Skinner encourages producers not to supplement the cow herd with whole cottonseed during the breeding season, or bulls may be exposed to its negative effects on sperm. **HW**