PURCHASING AND MANAGING YOUNG BULLS

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Purchasing young bull calves has become an economic reality in the beef industry. Older bulls require a larger investment for the breeder of seedstock because of the extended time involved in the feed and care of two-year-old bulls. Since fewer performance test are available for young calves, less is known about the genetics of growth rate than older bulls and the buyer is more at risk when purchasing younger bulls. In many cases, two-year-old bulls are those that did not sell the previous year and as a group are lower performing animals. A breeder will have more young bulls available than two-year-olds, which gives more opportunities to select the better performance bulls. The exception may be herds where only older bulls are sold. Most breeders prefer selling young bulls to avoid the added costs from another year of feed and management.

Younger bulls usually cost less and have less invested in their development. Young bulls are also the best management decision available to control trichomoniasis. Older bulls are often carriers of the organism and the replacement with younger bulls removes these from spreading to disease.

The breeding ability of bulls usually is at its highest between 18 months and 2½ years of age and declines after 5 or 6 years of age. Older bulls then are not used until the end of their peak breeding effectiveness. Often an extra calf crop can be sired from each bull by using them as yearlings. It is, however, the obligation of the new owner to grow out young bulls in a satisfactory manner. The need for proper growth and development still exists and continues after the breeding season.

Selection of young herd bulls

The implications of this purchasing practice are two-fold in that (1) the purchaser must assure adequate development of the young bulls and (2) selection of superior genetics should be better in young bulls because the high performance two-year-olds will have been sold the previous year. However, the performance records of younger bulls may not be as complete as those on older bulls. With young calves it is a good idea to select more bulls than needed to avoid the risk of individual(s) that do not develop as expected.

Prior to selecting an individual, bull a buyer should first determine which breed or breeds will influence their cow herd. The choice of breeds should be based on a long-range plan developed by matching breed strengths to production goals. Individual bull comparison should be done within breed. This avoids confusion due to differences between individual performance and breed characteristics.

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The next decision is which herds will provide the genetics via bulls and should be based on both the herd genetic background and the breeders' reputation. Finally, the buyer must make selections among available calves.

The best tool available to evaluate the breeding value of a bull is Expected Progeny Differences (EPD's). Most breeders can obtain this information through the appropriate breed association. In order for EPD's to be useful, buyers must first determine their production goals. For example, increasing weaning or yearling weights, increase maternal milk, or increase calving ease. The selection then should emphasize those traits most related to the breeding goals of the rancher.

Buyers choose bulls based on their expected ability to improve a particular area of production. One bull cannot have the same impact on all cows within a herd. It is therefore the buyer's responsibility to match the bull calves they select to their cow breeding objectives.

Breeders should have the opportunity to collect growth data on yearling bulls through a test station, on ranch test, or other programs. However, weaned bulls will not have this data available. Consequently, the accuracy of EPD's on young bulls are relatively low and indicates that the value of the EPD might change as other records are added in the calculation. Conversely, younger bulls have progeny a year earlier and the producer can evaluate performance much sooner.

Although EPD's on young bulls should be evaluated with caution, a buyer can use EPD's to group potential sires and then select an individual(s) from the group of bulls on visual evaluation. EPD's are used to compare bulls within the breed and are not intended to compare bulls between breeds.

Buyers select herd sires partially on the basis of individual performance. This information is helpful when selecting bull calves when it is available. Most breeders will have actual weaning weights adjusted to 205 days of age and/or yearling weights. Adjusted weights give a useful comparative value for ranking calves within a similar age group. Younger calves may have a higher adjustment yet can still be rather small. It is an advantage for the bull calf to have been born early in the calving season and to have the desired size for his age. Bull calves of the British breeds (such a Hereford and Angus) should weigh over 550 lbs (noncreep fed) at 205 days and calves of the larger Continental breeds (such as Simmental and Charolais) usually weigh more than 600 lbs.

A calf at weaning time is mainly a reflection of the mothering ability of its dam. Milking ability of the dam is responsible for about 60 percent of the variation in weaning weight of the calf. The other 40 percent is determined by the genetics of both sire and dam for growth.

When buying bull calves, it may be a good idea to select a few more than are going to be needed because some may not develop as anticipated. Even young calves can be selected for structural soundness. Look for calves that stand correct on their feet and legs. Calves should be neither too straight legged nor have too much set (angle) to their hock. An extreme either way could shorten the productive life of a bull. Calves should also have a muscle structure that allows them to move freely and easily. Check eyes to make sure calves can see clearly as this can affect the amount of traveling that bulls do to breed cows. Most bull calves have two normal testicles, but it is a wise practice to check each calf. Most physical abnormalities are readily visible. A thorough breeding soundness examine on each potential purchase is recommended.

Handle as a test group

Bulls purchased as yearlings are usually ranked within the herd or test group according to average daily gain or weight per day of age. Likewise, genetic differences in growth potential can most easily be evaluated if weaner bulls are handled in contemporary groups. Bulls challenged with high energy rations, over a suitable period of time (120 days or more) will develop body composition differences. Thus, additional information on genetic potential can be evaluated if weaner bulls are handled as a group in their new location. A suitable growing ration should be fed and all bulls given equal opportunity to eat. They can then be weighed as yearlings and ranked according to performance.

Final weight, to determine adjusted 365-day weight, should not be taken before bulls are 330 days of age, or beyond 450 days. Weigh bulls with a normal fill, neither too full nor too empty.

Nutritional consideration

Probably the most common mistake made in purchasing young bulls is the failure to provide an adequate diet to continue growth and development. Often bulls are delivered, turned out with other bulls, and left to "rough it" until breeding time. Thus, bull development is delayed and sexual maturity is not achieved and the resulting calf crop is decreased.

The first step in providing adequate nutrition is determining the desired level of performance. Typically, young bulls have 160 days to grow from weaning to yearling age. Because of the growth potential of our current beef population, yearling bulls are heavier than 1000 lbs. Therefore, daily gains of 2.5 to 3.0 lbs. are needed in young bulls. High energy diets (those with grain) are needed to attain these performance levels.

Rations should include concentrates fed at about 1% of body weight for the bulls. That is, 600-pound calves can easily consume about 6 lbs of grain fed with hay or silage fed free choice. This will help promote rapid growth without excessive fattening.

As the bulls increase in size, the amount of grain will increase to reflect the 1% of body weight unless it is obvious that they need more high-energy feed.

Bulls should also follow similar nutritional diets for the approximate 120 days from yearling time until breeding time. All bulls should be gaining weight and some condition during this time. A young bull will use body stores of energy and loose over 100 pounds during the breeding season. It is best if these come from energy stored as fat (condition) rather than muscle tissue since the bull is still growing. Conversely, excess condition lowers the bull's fertility and libido and should be avoided.

Here are two examples of bull calf rations that are self-fed.

Ration 1. (self-fed) Alfalfa or Grass Fed Free Choice

Ingredient	Pounds
Coarse ground or rolled oats	50
Molasses dried beet pulp	20
Wheat bran	15
Coarse ground or rolled barley	5
Coarse ground or rolled corn	5
Soybean oil meal	2.5
Linseed oil meal	2.5
	100

Ration 2. (complete ration)

Ingredient	Pounds
Ground ear corn	35
Ground or rolled oats	15
Cottonseed meal	10
Wheat bran	5
Molasses	5
Cottonseed hulls	20
Chopped alfalfa hay	10
	100

Rapidly growing young bulls need about 13 to 14 percent crude protein in their diet. Also, the ration should be from 65 to 70 percent total digestible nutrients. As the bulls approach 10 to 12 months of age, the protein can be reduced to 10 percent.

The manager needs to provide salt and a mineral mix. A mixture that has given good results is equal parts ground limestone, dicalcium phosphate, and trace-mineralized salt.

Yearling bulls should be well-grown, but not too fat. The energy content of a ration should be reduced if bulls are getting too fat. Fat bulls may fatigue rapidly, contributing to fewer cows conceiving.

For a yearling bull to be used successfully, he should have reached puberty 3 to 4 months before breeding time. The age of a bull at puberty depends on several interrelated factors, but size or weight is probably the controlling factor.

The production of semen by a young bull largely depends on his overall growth as well as the development of his testicles and other reproductive organs. There is a positive correlation between size of testicles and volume of semen produced.

Facilities

When bulls are mixed with others, the resulting fighting can be detrimental. Buying and raising young bulls as a group verses buying older bulls from various breeders can reduce fighting and associated injuries. While it would be best to separate young bulls into separate breeding pastures from older bulls, we recognize that most producers have limited breeding pastures. When developing breeding plans that include different breeding pastures for different groups, separate the bulls based on age to insure good breeding response. If older bulls are going to run common with younger bulls, pen them together prior to the season to allow time for social interaction which always occurs.

Commercial producers buying bull calves or yearlings need equipment and suitable facilities for growing them out. A large well-drained lot that gives opportunity for some exercise is desirable. Exercise over rough or rocky ground will help the animals avoid the foot problems that sometimes occur when bulls have been fed heavily to get into sale condition. Locating feed areas away from water sources will facilitate movement of bulls and encourage exercise. Raising bull calves on the same type of terrain that force travel will help condition them for breeding cows.

Some type of shelter or housing is advisable where bull calves are confined and the winters are severe or exceedingly wet. An open-sided pole-type shed is desirable, and a partially surfaced lot is helpful if mud is a problem. A loafing shed should provide about 25 to 30 square feet per calf. A completely surfaced lot should provide about 50 square feet per animal, and a partially surfaced lot should allow about 150 square feet per head.

Feeder space should be 24 to 30 inches of bunk space per head if all animals eat at the same time. Horned bulls require more bunk space than polled bulls. If self-feeders are used, it is helpful to place the feeder near the fence line so it can be filled without entering the lot.

Young bulls need access to a plentiful supply of water. Freeze-proof watering facilities are a help. If the water system should freeze up, haul water if necessary. Too little water can cause slow growth and may result in formation of urinary calculi (stones) or other health problems.

If more than 30 bull calves are to be fed, it is helpful to divide them into two groups. It is also a good idea to separate polled calves from horned calves.

The health program

Bulls bought as weaners or yearlings have time to adjust to any environmental problems particular to the new ranch. Buying bulls at a young age gives the new owner the opportunity of including the new animals in the overall herd-health program. The breeder or seller should indicate what vaccinations have already been given. Most bull calves will have had calfhood shots for blackleg and malignant edema. Booster shots for these diseases are necessary and usually are given in a pre-conditioning program before weaning. Most pre-weaning health programs include protection against clostridial and other diseases associated with feedlots. In addition, there should be a program for the control of both internal and external parasites. If there are questions, ask your local veterinarian about recommended health practices for your area.

Summary

To summarize, buying bull calves can be a sound practice if they are properly selected utilizing EPD's, performance data, and visual appraisal. After the selection is made, proper management and development are necessary, including herd health, nutrition, and environment to insure a successful program.

Proper development of young bulls after purchase can have a positive impact on herd fertility. Low fertility in the bull battery can mean few calves, thus, a producer needs to insure proper nutrition and care for young bulls after they are home as well as in transit.

(**Key Words:** Bull Selection, Young Bulls, Managing Bulls)