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Nutrition for Beef Bull Development – Part 2

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Efficient and Effective Bull Development

Bull development is an investment that can carry considerable, but necessary, cash outlays to meet the nutritional needs of growing bulls. Design bull development programs to keep costs to acceptable levels while still meeting production goals. A successful development program produces bulls that are healthy, well-grown and ready to serve as active and effective herd sires.

Bull development targets can often be achieved through limit feeding grain-based supplements or on forage-based programs for significant costs savings versus full feeding programs. An average daily feeding rate for a post-weaning bull development program through yearling age may be 15 to 20 pounds per head per day. If these same bulls were allowed all they could eat, they might consume 25 or more pounds of grain-based feed per day and yet not sell for premiums to justify the additional feed expense. The risk of overconditioning bulls is also greatly reduced by developing bulls on excellent quality forage systems or limit-fed grain-based supplement systems compared with grain-based full feed programs.

Rations for growing bulls, fed to achieve a high rate of gain, are often fed as a complete ration (includes both grains and roughage). Maintain at least 15 to 20 percent roughage as an effective fiber source (examples include coarsely chopped hay or cottonseed hulls) in rations to keep bulls ruminating to moderate rumen pH, prevent acidosis, and keep the rumen healthy. If the roughage is not mixed with the grain portion of the diet but instead fed in a self feeder, limit grain intake so bulls will consume at least 0.5 percent of body weight as roughage. Keep hay or grazing available at all times in these situations. Add liquid molasses at 5 percent of the ration to help stimulate intake and reduce feed dustiness.

At the end of a development program on a high-grain diet, gradually adjust bulls back to a forage-based diet prior to market or turning out to pasture. Work bulls off a high-grain diet and back to a predominately forage-based ration. One of the biggest complaints from bull buyers is that grain-fed bulls often lose body condition and weight rapidly after being placed on average or low quality pasture. Buyers typically do not want to see bulls lose condition rapidly after being turned out to pasture. Decrease the grain-based ration intake by 15 to 20 percent each week over several weeks until on forage alone or forage plus a supplement. Move bulls to a larger lot and increase the distance between feed and water resources to increase exercise and help prepare bulls for the physical demands of pasture breeding.

Nutritional programs must provide adequate levels of protein and energy to allow for expression of genetic differences in growth among bulls. Qualified nutritionists can help formulate proper bull development rations. Consider feed ingredient availability, price, nutrient content, handling characteristics, and feeding risk factors in determining which feedstuffs and feeding levels to use. Also consider including an ionophore in bull diets to improve feed efficiency and growth rates.

For a feed-based test, use rations with 70 to 80 percent TDN on a dry matter basis at a rate of 2.2 to 2.5 percent of body weight. Free-choice grain feeding is feasible but not as cost-effective as limit feeding. Allow free-choice access to hay or pasture if not using a total mixed ration including an effective fiber source in a grain-based development program.

If a concentrate ration with 70 to 80 percent TDN (on a dry matter basis) is provided as part of the forage-based test, limit feed it at a rate of 1.0 to 1.5 percent of body weight. Consider negative associative effects of high-starch supplements (such as corn) on forage fiber digestion when selecting supplements for forage-based tests. Corn fed at levels higher than 0.25 percent of the body weight has been shown to depress forage intake and digestibility. Soybean hull pellets are a good energy supplement for forage-based diets because they are high in both fiber and TDN.

Utilization of co-product feeds such as soybean hulls and corn gluten feed can help reduce bull development feed cost. These feeds also contain a higher percentage of fiber and less starch than corn, which helps maintain a rumen environment more adapted to forage digestion. Note expected rates of gain for diets containing co-product feeds in assessing the value of these feedstuffs. Ultimately, consider feed cost of gain in evaluating the economics of developing bulls. Exercise care when feeding some of these co-products to keep the fat level of the total ration from becoming too high. Do not feed fat levels higher than 5 percent of the total diet to avoid problems with rumen microbe function and associated scours and lower digestibility of forage.

Maintain a back-up feed supply in case forage availability declines to inadequate levels. Limit grazing time and start feeding the back-up feed before forage available for grazing runs out. When forage supply is inadequate and bulls are constantly hungry, they may spend more time fighting with each other. Risk of injury to bulls increases when they fight or mount one another. This can be a problem during forage tests because of the advancing age of bulls. Minimize fighting amongst bulls by providing a backup forage supply or offering supplemental feed during periods when forage supply limits intake. Change from grazing to feed gradually over a period of 2 to 3 weeks to maintain digestive health.

Observe bulls closely during the breeding season. Identify bulls that do not display adequate libido or become injured during the breeding season. Also recognize when bulls become too thin. If bulls are not performing as expected and environmental conditions have not been extreme, evaluate feed bunk and water trough management.

Keep feed bunks clean and free of stale or moldy feed. Feed intake is highly correlated with water intake and can be reduced if water sources are not kept clean. During the breeding season, hand feeding may be necessary to ensure that bulls maintain adequate condition for active breeding.

Bull development programs involve carefully planned nutritional management. In doing so, maintain an acceptable balance between program quality and cost-effectiveness. For more information on stocker cattle production, contact an office of the Mississippi State University Extension Service.