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"Stocker Cents" article

Cool Season Forage and Supplementation

Richard Watson – MSU Extension Forages Specialist
Blair McKinley and Jane Parish – MSU Extension Beef Specialists

The cool season in Mississippi offers a great opportunity to achieve excellent weight gains in stocker cattle. Not only do cattle tend to grow better without the summer heat, but also most of the cool-season forage species are generally better quality than the warm-season forages. The cool-season forages that are used depend on climate, predominant soil types, and management. Traditionally, annual ryegrass is used extensively in the Southeast to grow stocker cattle. Annual ryegrass does very well on moderate to free-drained soils with nitrogen applications. The fact that South Mississippi can grow ryegrass very well is largely why much of the stocker cattle production is in this region. The length of the growing season and the heavier soils of North Mississippi make annual ryegrass a bit more unreliable for raising stocker cattle. However, the recent arrival of novel endophyte tall fescue on the market could offer new opportunities for stocker cattle production in the north part of the state. There are also some alternative forage crops that can be utilized effectively to attain good growth rates in stocker cattle during the cool season, including small grains (oats, wheat, and rye), and brassicas (turnips and rape).

Forage Growth During the Cool Season

In most cases cool-season annual forage planted on a prepared seedbed can be grazed beginning in late November or early December. Grazing on cool-season forages sod seeded into perennial summer pastures will be delayed until late December in South Mississippi and February in North Mississippi. Grazing established tall fescue could generally begin in mid to late October. Properly managed cool-season forages grazed full season (180 days) should produce 500-600 lbs of gain per acre. Properly managed well-fertilized cool-season forage is capable of carrying 600 lbs of calf per acre at the start of the grazing season. Heavier weight calves have higher levels of intake than lighter weight calves, so plan stocking rates accordingly. It may seem that forage is being wasted, but a forage reserve is necessary for the cold months ahead when forage growth is slowed by cold wet weather. Allow grasses to reach a height of 8-10 inches before grazing. Grazing earlier can reduce stands and cause forage shortages later in the winter. Forages grazed shorter than three inches in the winter will be slow to recover when more ideal growing conditions return in the spring.

Cold wet winters can result in reduced forage availability in January and February. Forage growth may not support the current stocking rate. There are several options producers should consider to maintain cattle and keep them growing. 1) Limit graze animals 2-3 hours per day along with access to good quality free-choice hay. 2) Reduce

the number of grazing animals per acre and dry lot the remaining animals. The animals in dry lot should be fed to gain 1.5-2.0 lbs per day.

Under normal growing conditions the initial stocking rate will not be able to fully utilize the forage in April and May. Producers have several alternatives available to best utilize this high quality forage. 1) Add additional animals. Concentrate stockers on smaller acreages, leaving one or more pastures for use by cows nursing calves. 2) Concentrate animals on small acreages and harvest the ungrazed forage for balage or hay.

Annual Ryegrass Management for Stocker Cattle Production

The most critical aspect of using annual ryegrass for cool-season forage is successful establishment in the fall and accumulation of enough growth to start grazing as early as possible. While weather plays a major role in the rate and success of ryegrass establishment, there are some things that can be done to improve the chances of having forage to graze. Seedbed preparation is vital. Ryegrass seed, like most seed, needs seed-soil contact in order to germinate. The more that can be done to ensure seed is in contact with the soil, the better ryegrass establishment. This is not a problem in a cultivated seedbed, but it can be an issue on the many acres of overseeded summer pastures where there is existing ground cover. Usually, a combination of clipping, light disking, and/or sod suppression with herbicide is required to improve seed-soil contact and reduce competition for ryegrass seedlings.

The next important step in using ryegrass to grow stocker cattle is employing grazing management that will aim for a consistent supply of high quality forage. Overgrazing and/or undergrazing can affect both the yield and quality of ryegrass. Ryegrass stands should be managed so that they are grazed when 6-8” high and rested when they are 3-4” high. This will help avoid overgrazing situations where the growth rate of the ryegrass will be significantly reduced and undergrazing situations where the ryegrass gets too long and there is significant quality loss. Ultimately, both overgrazing and undergrazing lead to poorer weight gains in stocker cattle. Of course, this is easier said then done.

Seasonal growth patterns of annual ryegrass make if difficult to maintain optimum grazing pressure without adding and removing animals. The best way to control grazing pressure during times of seasonal variation is to utilize rotational grazing. Not only does this improve overall forage crop utilization, but it also allows grazing pressure to be managed more effectively. Grazing pressure is controlled by rotation length. Rotation length is the number of days it takes for animals to make one full rotation of the ryegrass pastures. For example, if there is 100 acres of ryegrass divided into five 20-acre paddocks, and cattle are allowed to graze in each paddock for a week (7 days), the rotation length would be 35 days (7 days per paddock x 5 paddocks).

The key to setting a rotation length is to determine the optimum length that will ensure good intakes of quality forage and not waste nor overgraze pastures. During times of slow growth, rotation lengths need to be longer so that all the forage is not used up at once and has time to grow back. Typically, rotation lengths during the coldest time of

the year should be around 80-100 days, depending on stocking rate. During a slow rotation, some supplementation is generally required to maintain feed intakes. For example, if there are 200 steers grazing a 100-acre ryegrass area during the winter, each requiring 15 lbs of forage dry matter per head per day, and a slow (100-day) rotation may be desired to keep from running out of grass. In order to achieve a 100-day rotation, the calves would need 14 acres of grass every 2 weeks.

The amount of additional hay, silage, or feed supplementation in this example depends on the amount of ryegrass present. A 10” ryegrass pasture will have about 2500-3000 lbs of dry matter per acre. If forage is grazed down to 3-4”, then about 2000 lbs of forage per acre is available to the animals. Total forage availability for the 14-day period would be 14 acres x 2000 lbs per acre = 28,000 lbs dry matter. The total forage requirement for the 2-week period would be 200 steers x 15 lbs per day intake x 14 days = 42,000 lbs. Therefore, to maintain intake levels at 15 lbs per day another 14,000 lbs of forage or supplement dry matter is needed. This means that an additional 5 lbs (14,000 lbs / 14 days / 200 animals) of dry matter/head/day is needed to maintain intake levels. Obviously, if pastures are shorter than 10”, more supplementation will be required to meet animal demand.

On the other hand, when pasture growth rates are very high, the rotation needs to be sped up to keep on top of excess forage growth. Rotation lengths during this time can vary between 20 and 50 days, and there will generally be no need for additional supplementation. In spring, annual ryegrass growth rate can be in excess of 100 lbs dry matter/acre/day. This level of growth along could produce enough feed for 5-6 stocker calves. Therefore, even with very high stocking rates, it is generally not possible to keep on top of rapid ryegrass growth. The major concern during these times is quality rather than having enough grass.

Using the example above (200 stockers with 100 acres of ryegrass), a spring growth rate of 100 lbs dry matter/acre/day would require something close to or less than a 20-day rotation. This would mean that the 200 stockers are grazing about a third of the area (33 acres) in a week. Animal intakes would still be around 15 lbs per day (this will increase as the animals grow larger), which means that the total animal demand for a week would be 200 stockers x 15 lbs x 7 days = 21,000 lbs of pasture dry matter. A 100 lbs per day growth rate on the 33 acres would produce 100 lbs x 33 acres x 7 days = 23,100 lbs of pasture dry matter, which is 2,100 lbs more then the animals are eating. Therefore, pastures will get longer and lose quality even with this fast rotation in place. In this instance, it is generally necessary to remove some area from the rotation and accumulate it for hay and/or balage production. For example, if 25 acres were removed from the 100 acres of ryegrass and the same 20-day rotation was maintained on the remaining 75 acres, the cattle would get only 25 acres in a week. Forage demand would still be 21,000 lbs a week, but forage growth would only be 100 lbs x 25 acre x 7 days = 17,500 lbs. This would allow the stockers to reduce pasture height and maintain forage quality on these 75 acres. The remaining 25 acres could then be harvested for stored feed and included back in the rotation when pasture growth rates slow down.

The use of rotation length to control intake and forage quality is a valuable tool with any forage type. The optimum length of the rotation will depend on a lot of variables, including animal numbers, intake, land area, and pasture growth rates. The examples above are rules of thumb, and individual situations may vary from these. Once a rotational grazing system is put in place, it is generally very simple to operate and fine-tune. Rotational grazing can significantly improve the efficiency and profitability of the stocker cattle operation.

Tall Fescue in Stocker Cattle Operations

The problems of toxicity in old Kentucky-31 tall fescue pastures and the lack of persistence in endophyte-free varieties, have prevented this otherwise excellent forage crop from being utilized extensively in stocker cattle operations. However, the advent of novel-endophyte technology has opened up new potential for this forage in the northern half of the state. The major advantage of tall fescue over annual ryegrass is the fact that it is a perennial and does not require seeding each year, which means forage is available to graze much earlier in the fall. The other major advantage of tall fescue is the longer growing season. Not only is there more fall forage production, tall fescue will also continue to grow into the early summer and beyond if moisture is not limiting. It should be noted that it is not advisable to graze tall fescue pasture into summer as this can increase the risk of stand loss. The management for tall fescue pastures for stocker cattle should be similar to annual ryegrass with optimization of quality and growth being achieved through rotational grazing.

Recent advances in forage technology, such as new varieties and species, have significantly improved the options for stocker cattle producers. These high-quality products allow better weight gains to be achieved and can provide a more consistent supply of forage throughout the year. However, it cannot be stressed enough that there is no substitute for good grazing management. Mississippi has fantastic potential to grow forages, and it is up to the individual stocker operator to determine how effectively this valuable resource is used.

Supplementation Needs

Profitable beef stockering depends upon adequate calf growth rates. Calves must achieve high average daily gains to be profitable, so providing sufficient nutrients, whether from forage or feed, is critical. In most cases, stocker calves should gain 1.5-2.0 lbs per day. Most successful stocker operators stock to maintain high average daily gains rather than to achieve high gains per acre. Gains on stockers will be limited by the quality and quantity of forage available. With high quality pasture available, little or no supplementation is needed. During periods of short grazing in mid-winter, feeding of good quality hay can be an adequate supplement to existing grazing. If forage alone cannot achieve adequate weight gains, additional supplementation becomes necessary. Free-choice good quality grass hay and 4 lbs. of whole cottonseed works well as a daily stocker supplement. By-product commodity feed options will also fit in stocker diets when forages alone do not get the job done. Feeds should be evaluated according to

price, availability, handling and mixing requirements, nutrient composition, and feeding limitations.

Supplementation is often viewed as something to feed when the grass runs out, which is true to a certain extent. However, the real value in including a limited amount of supplementation in a pasture program is that it makes it possible to slow pasture rotation and ration forage resources better, which ultimately makes grass last longer. With more grass in the diet, supplemental feed needs and associated costs can be reduced.

With the production of high-quality cool-season forage, stocker cattle will have the opportunity to gain rapidly and generate profits. If calves are provided with adequate nutrition and are not gaining well, then the herd health program should be re-evaluated. Sick calves will not gain well regardless of forage quality and adequate supplementation. In January, “Stocker Cents” will expand on this by addressing necropsy and health records. For more information on stocker cattle management, contact your local Extension office.