

LivestockLinks

A Statewide Newsletter for Alabamians

Fall 2007

From the Editor

Alabama has experienced severe drought conditions over the last 2 years. In addition, some areas of the state experience moderate levels of drought every year. This issue of LivestockLinks takes a look at some of the ways to cope with drought problems related to your forage and winter feeding endeavors. For this particular issue, we have omitted the producer feature article and will focus on coping with the effects of drought.

Darrell Rankins Jr.

Drought-Related Pasture Management

Don Ball, *Extension Agronomist/Professor*

Situation Assessment

Before taking action it is usually of great importance to be careful to make a correct assessment of the situation. To fail to do this is likely to lead to less-than-optimum decisions and results. The first question a producer in a severely drought-stressed area is likely to ask is, "Are the plants in my pastures dead or merely dormant?" In the long run, the answer to this question will be evident, but unfortunately it can be a difficult question to answer in the short run. In trying to make this determination, it

may be helpful to think about how the pasture had been treated and the condition it was in before the drought occurred.

First, because warm-season species are generally more heat- and drought-tolerant than cool-season species, cool-season forages are much more likely to have died. Usually, drought will not kill warm-season perennial pastures or hayfields more than 1 year old.

Second, on many farms, heat and drought are not the only stresses to which pasture plants may have been exposed, and to a significant extent, stress is cumulative. The point is that pastures that were in particularly good condition before a drought began are much more likely to have survived than those that had already been under some sort of stress or that were exposed to some type of stress in addition to the drought.

Considering the condition of the pasture plants before the drought began and the factors that enhance the likelihood of plant death are helpful in determining the probable status of a pasture, but it is quite something else to actually tell for certain if the plants are dead. For a producer who wants to assess plant viability in a seemingly-dead stand, the first thing to look for is green leaf tissue. If there is even a small amount of green tissue on forage plants, they are still alive.

However, even if cool-season perennials have no green leaf tissue present, it may be that the crowns and roots are still alive and that the plants may simply be in a dormant state. Cool temperatures and a slow, soaking rain may result in a surprising recovery from what appears to be a dead cool-season perennial grass pasture.

Additional insight can be gained by doing a bit of digging, then looking at the crowns and roots of a few plants. If you split the crown of a plant with a pocket knife and observe that the center of the crown still has a creamy (not brown) center, it probably is alive. If the roots are firm and not withered, that is another good sign. Finally, if viable (nonwithered) buds are on the crowns of the plants, they are probably still alive.

Having Some Dead Plants May Not Mean Disaster

There is no avoiding that if stress is severe enough, pasture plants (sometimes the majority of them in a given field) will die. However, a more typical scenario is that drought will cause thinning of pastures and reduced plant vigor. When this happens, pasture productivity is obviously reduced, but not totally or permanently. A thin stand of endophyte-infected fescue plants (for example, together with fescue seed in the soil that can result in volunteer plants) may result in a thick, productive fescue pasture developing again within a few months, assuming soil fertility is good and overgrazing is avoided.

Clover, which is a particularly valuable component of many cool-season pastures, is unfortunately more vulnerable to drought and more likely to have been killed than cool-season perennial grasses such as tall fescue. White clover is more vulnerable to drought than red clover, but drought-killed white clover is more likely than red clover to come back later in the form of volunteer plants arising from seed present in the soil.

Various cool-season perennial grasses differ in their vulnerability to drought as well. Endophyte-infected tall fescue (including novel endophyte tall fescue such as Max Q) is more stress tolerant than either endophyte-free fescue or orchardgrass. Thus, the likelihood of severe thinning of these species is considerably greater than for infected fescue.

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Management Options

Introduce Clover

There is an old saying to the effect, "When life gives you lemons, make lemonade." While this may seem trite and simplistic, it is a concept that often has some value and relevance on many livestock farms after a drought has occurred. In some cases, a little thinning or reduction of vigor of a cool-season perennial grass pasture might be viewed as an opportunity to introduce clovers. Evidence of the truth of this is that "good clover years" usually follow droughts that open up pasture sods and reduce competition. However, it is important to remember that clovers and other legumes can only be expected to establish and grow well in areas in which the soil pH is suitable (usually 6.0 to 6.5 or higher) and where there are good levels of soil phosphorus and potassium available for the legume plants.

Thicken Cool-Season Perennial Grass Stands

Sometimes a drought will thin cool-season perennial grass pastures enough that grass forage production is likely to be severely reduced for quite some time unless stands are thickened. In such cases, simply drilling around 10 pounds of orchardgrass or tall fescue seed per acre at a depth of 1/4 to 1/2 inch will help ensure that there will be a good stand of perennial grass present in the field in future months. However, the value of the concept of introducing clover still applies and thus planting clover along with seeding additional cool-season perennial grass should be given serious consideration.

Auburn University recommendations are to plant cool-season perennial grasses in autumn because this is normally the single best time to dependably obtain a stand. However, in the northern one-third or so of Alabama, there is a reasonably good likelihood of success with drilling in grass seed and/or white clover or red clover in late winter (around early March) as well. Therefore, a failure with no-till seeding in autumn, a failure to drill in seed in autumn because of a misjudgment as to the extent to which a stand has thinned, or omission of autumn planting because of continued severe drought, might be corrected with a late winter planting.

Overseeding Warm-Season Perennial Pastures

Overseeding summer pastures with winter annual forages can be of great value when hay supplies are low. Annual ryegrass in particular is well suited to be seeded into bermudagrass, bahiagrass, or dallisgrass fields in autumn after the summer grass has ceased vigorous growth. Small grains can also be drilled into warm-season perennial grass pastures, but are less economically feasible to plant into a sod than ryegrass because of greater expense and relatively little time for them to make growth before cold weather. Various annual legumes, especially crimson clover and arrowleaf clover, can also be overseeded on summer sods. Alabama Cooperative Extension System publication ANR-227, which is available from Extension offices and provides detailed information about overseeding.

Interseeding Annuals Into Cool-Season Perennial Pastures

Often when producers who have cool-season perennial grass stands (in most cases, dominated by tall fescue) realize that their stands are thin are tempted to seed winter annuals (especially annual grasses such as small grain and/or annual ryegrass) into them. The idea, of course, is that this will provide some additional forage in late autumn and spring, to help compensate for reduced fescue growth.

However, some problems may be associated with seeding winter annuals into cool-season perennial grass pastures. In most cases, there will be little forage growth from such seedings until late February or March. Winter annuals make more growth during cool weather than perennials like fescue, and when they begin growing vigorously in spring, they create competition for the perennial grass that has already been weakened and thinned by drought. Winter annuals are especially competitive against any perennial grass or legume seedlings that may be present. There may be some situations in which seeding winter annuals into cool-season perennial grasses can be justified, but the negatives associated with using this technique need to be considered carefully because in many situations it is a questionable practice. However, the feasibility of doing this is greater if a substantial portion of a pasture consists mainly of warm-season species such as common bermudagrass, crabgrass or bahiagrass.

Planting Annuals on a Prepared Seedbed

Some livestock producers who feel they don't have enough hay and/or enough cool season perennial pasture to get them through the winter after a drought may think of planting some acreage of winter annuals on a prepared seedbed. The economic feasibility of doing this depends on several factors, but especially the level of nutrition that needs to be provided to livestock and the cost of providing stored feed instead of planting the winter grazing. For many producers, prepared seedbed plantings of winter annuals could be cost effective, especially if the planting is limit grazed or strip grazed to maximize utilization of the forage produced.

Getting Through the Winter With Minimal Hay

Darrell Rankins Jr. *Extension Animal Scientist*

Because of drought, it is likely that many producers have inadequate supplies of hay. This article focuses on providing adequate nutrition with limited amounts of hay. First of all, it is important to remember that cattle are ruminants and thus need some forage (fiber) in their daily diet. In general, the minimal amount required is about 0.5 percent of body weight, which would equate to 5 to 6 pounds for 1,000 to 1,200-pound cows. Because most beef producers use hay in the form of a large round bale, it is difficult to limit hay consumption to 5 to 6 pounds per day. There are only two realistic ways to limit hay consumption with round bales. The hay can be unrolled and offered at a predetermined amount. Another way would be to put an adequate number of rolls in a small area such that the cows can be put into the area for about 2 hours per day to control the amount of hay that they consume. With this program it is important that all cows have access to the hay, approximately one roll for every 10 cows. If small, square bales of hay are available, then it becomes much easier to offer 5 to 6 pounds of hay per day.

Another alternative for providing 5 to 6 pounds of forage per day is by limited access to stock-piled forage. If you are in the fescue region, this would be an excellent choice for stock-piling. We can assume that fescue with 70 to 80 pounds of nitrogen per acre and adequate moisture would accumulate approximately 1,800 to 2,000 pounds of usable forage per acre by Dec. 1. With proper fencing, the animals could be given a fraction of an acre every day or every other day such that you were giving them access to about 5 to 6 pounds of forage dry matter per day. This technique works extremely well with

the use of electric fencing. The same principles could be used with winter annuals in the nonfescue growing areas of the state.

A final option for providing roughage to the cows would be the use of various by-products such as peanut hulls, cottonseed hulls, gin trash, cotton notes or any other by-product roughages that may be available in your area. Peanut hulls as a roughage source should be loose hulls and not pellet or ground hulls. Using ground or pellet peanut hulls can cause rumen compaction problems.

Now that the hay has been conserved by some sort of limit feeding system, what is needed to meet the nutrient needs of the cow? For a 1,000-pound cow that has not yet calved, we would need to provide her with about 12 pounds of a grain mix that contains approximately 12 percent crude protein. One such mix would be to blend 575 pounds of corn with 50 pounds of soybean meal. Another possibility would be to feed soybean hulls or corn gluten feed. Also, check with your local livestock feed dealer and they may have a blend suitable for your needs. Once the cows calve and begin lactating, then their daily nutrient requirements will increase and they will require approximately 18 pounds of the grain mix, soybean hulls or corn gluten feed per day plus their hay allowance. With this system, the cows would be fed 12 to 18 pounds of the concentrate per day (depending on stage of production) and given 5 to 6 pounds of forage per day. For this system, it is important to have adequate bunk space for feeding the cows to make sure that the boss cows do not consume the majority of the feed. In general, if the cows can access both sides of the bunk, then a 10-foot trough will accommodate 10 to 12 mature cows. It is important to note that good feeding management is a must when feeding cows in this manner. It would be easy to founder some cows when feeding this amount of a corn-based supplement per day. Obviously, this system is quite labor intensive and requires a large amount of daily feeding; however, if hay supplies are severely limited, it may be the only alternative available.

Feeding Wheat Straw

Darrell Rankins Jr. *Extension Animal Scientist*

Wheat straw has been used as a low-quality roughage source for ruminant animals for many years. However, there are some points to be aware of when using this roughage source.

Wheat straw is the material that has been left behind following combining of the wheat grain. Wheat straw, as well as oat straw, is very low in nutritional quality. They will typically contain 3.5 to 4.5 percent protein and 40 to 45 percent total digestible nutrients (TDN).

The problem with feeding straight wheat straw is the length of time that it stays in the cow's digestive tract. With most roughages, the cow digests the usable portion and the undigested portion passes on through and ends up as manure in about 48 to 72 hours. Wheat straw will stay in the digestive tract for much longer lengths of time and begins to stop the digestive process. Consequently intake goes down and the cow gets stopped up.

When feeding wheat straw to cows it is important to be sure that they have adequate protein to go with it. As indicated previously the protein content of the straw is approximately 4 percent and this is what limits the ability of the cow to digest the straw. If we supplement the cow with additional protein the bugs in her rumen are able to digest more of the straw and help alleviate the slow passage problem described above. A grown cow would probably benefit from up to 1.5 to 2 pounds of supplemental protein when consuming straw.

The best method for improving the usefulness of wheat straw as a feedstuff is to ammoniate the straw. With the decreased availability and use of anhydrous ammonia, this is not as popular as it once was. Ammoniating wheat straw will increase the protein content to about 8 to 8.5 percent and will increase the TDN content to around 50 percent. This is still low-quality roughage but it is certainly much improved over the original material.

Ammoniating forages is somewhat dangerous, so be careful. The straw should be stacked in such a manner that the entire stack can be covered with a 40 by 100 sheet of plastic. Make sure the plastic will reach to the ground all the way around the stack. When you get to the final corner, insert the hose from the anhydrous tank and slowly release the ammonia into the covered stack at a rate of 3 percent (60 pounds of ammonia/ton of straw dry matter). Once the appropriate amount of ammonia has been added, seal off the corner and leave it for about 2 weeks for the ammonia to incorporate into the straw. Ideal conditions are for the straw to contain about 15 to 18 percent moisture and ambient temperature be 90 degrees. If moisture content or ambient temperature deviates considerably, then the effectiveness of the procedure decreases. In other words, protein and TDN are not appreciably increased.

Fast Facts

- Growing animals consume 2 to 3 percent of body weight in dry feed.
- Finishing animals consume 2 to 2.5 percent of body weight in dry feed.
- Herd bulls in excellent condition will consume 1.5 to 2 percent of body weight; young bulls and thin bulls may consume double this amount.
- Brood cows will consume 2 to 2.5 percent of body weight in dry feed.
- A pound of hay is the same as 2 to 3 pounds of silage when figuring daily consumption (they are not necessarily of equal nutritional value).
- When silage is the major forage, cattle will consume 5 to 6 pounds per 100 pounds body weight.
- Grazing animals will consume 80 to 100 pounds of green forage per 1,000 pounds body weight when forage is lush. Consumption declines rapidly as quality of forage declines.
- A brood cow will get a "body fill" on temporary winter pasture (rye, ryegrass, etc.) in about 2 hours. This amounts to 7 to 8 pounds dry matter and will usually meet a lactating cow's supplemental protein and energy needs.
- Cattle will drink 2 pounds of water for every 1 pound of feed they eat.

Calendar of Events

October	1	Introduction to Grassfed Beef Production, Dr. Allen Williams, Tallgrass Beef, Carrollton, 7 p.m. Contact Sam Wiggins (205) 367-8148
	6	Fayette District Dairy Show, Fayette
	6 to 15	Alabama National Fair, Montgomery
	20	Wiregrass Forage-Based Bull Evaluation Sale, Elba, 12 noon
	25	Genetics and how they fit into a marketing alliance for cow-calf producers, Mike Kasten, Missouri Beef Producer, Carrollton, 7 p.m. Contact Sam Wiggins (205) 367-8148
November	1	Nomination Deadline for the 2008 EPD Bull and Heifer Sale. Contact Michelle Elmore
	2	Nomination Deadline for BCIA Producer of the Year Applications. Contact Michelle Elmore
	9	2007 Fall Round Up Bull and Heifer Sale, Uniontown at 11 a.m. Contact Michelle Elmore
December	8	2007 North Alabama Bull Evaluation and BCIA Heifer Sale, Cullman at 11 a.m. Contacts: Gerry Thompson, Michelle Elmore, Kent Stanford
	13	Alabama Forage Conference, Troy, Pike County Cattleman's Building

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