



Drought Impact in Winter Forage Establishment and Utilization

Volume 8, Issue 10

Rocky Lemus
Extension Forage Specialist

October 2015

Visit us at: <http://mississippiforages.com>

Winter grazing pastures are usually planted in south Mississippi by September 15th to October 1 in the northern part of the state. This might not be the case this fall since Mississippi have been extensively impacted by drought conditions for the last 90 days, causing issues with establishment due to poor germination (Fig. 1). Currently, only 25 to 30% of the estimated acreage for winter grazing has been planted. If this trend continues, it could have serious impact on forage production in the 2015-16 winter grazing season, affecting the availability and price of hay and animal feed (soybean hulls, cotton seed, distiller grain, etc.). According to the drought monitor, several Mississippi's counties are in the extreme to severe drought and are being considered for disaster relief (Fig. 2). There are several points that need to be discussed to help producers in making contingency grazing and marketing plans.

Lack of moisture can impact forage establishment, especially with annual ryegrass and clovers. Due to the lack of rain, using a combination of small grains, annual ryegrass and clovers could help increase the forage potential. Small grains tend to have better drought tolerance during establishment (Fig. 3). It is advised to plant in a prepared seed bed instead of sod seeding to speed up establishment and minimizing delay in grazing opportunities. A preliminary study at Mississippi State has indicated that planting into a summer grass sod (bermudagrass or bahiagrass pasture) can delay grazing by 4 to 6 weeks compared to prepared seed bed. To speed up the establishment of winter grasses, producers will be tempted to apply the fertilizer (especially nitrogen) along with the seed. It is recommended to wait until the seed has germinated and they are about two to three inches before applying nitrogen to increase the opportunity for better use efficiency by the new seedlings. A nitrogen rate of 30 to 40 units of nitrogen (e.g. 65 to 90 lbs of urea or 90 to 120 lbs of urea ammonium sulfate) should be sufficient for the first two grazing cycles and repeat fertilization to increase forage production into the spring.



Figure 1. Drought has impacted forage establishment, grazing potential and water availability and quality.

It is also time for producers to evaluate their hay inventory and make sure that there is plenty of hay available in case the winter grazing capacity of the pastures is limited. Two things are needed: (1) test your hay to ensure that the hay is meeting the nutritional needs of the cow and minimize the cost of developing rations. (2) Develop a hay inventory to ensure that enough hay is available. Let's assume that a cow will consume 3% of its body weight (include storage and feeding waste) and there is a hay need for 120 days of feeding. Then a 1,100 lb-cow is going to consume 3,960 lbs of hay (1.98 tons). If you take into consideration the cost of hay at \$80.00 per ton, this will cost \$158.40 per cow. This is purely based on hay usage and not in quality, which can increase the cost if extensive supplementation is needed when hay is not meeting the nutrient requirements. Keep in mind that the amount and type of by-products needed for developing a ration can be affected by hay quality, cow weight, calving season, reproductive stage and climatic factors. Contact

your animal nutritionist to develop a ration that will best fit the need of your livestock.



As producers start to see their pastures greening up, they might have the tendency to rush grazing them. It is important to wait until those winter forages are eight to ten inches tall before grazing to avoid losing the stand and reducing the long-term grazing capacity.

Winter pastures should be stocked at no more than one cow or two steers (500-600 lbs) per acre. It might be good idea to limit grazing the animals to a few hours during the day and using the strip grazing approach to increase forage utilization and uniformity of the area being grazed. Maintaining proper grazing height will trigger plants to produce more tiller or shoots and consistent forage production. Another strategy that could be implemented is by reducing the amount of forage needed for the winter grazing. This could be achieved by culling animals before the grazing period begins and before the market becomes saturated. One strategy is to reduce the number of replacement heifers if possible since mature cows can survive and reproduce better than animals still in the reproductive stage. Another option is to wean calves earlier than expected since dry cows will consume 35 to 40% less forage than lactating cows.

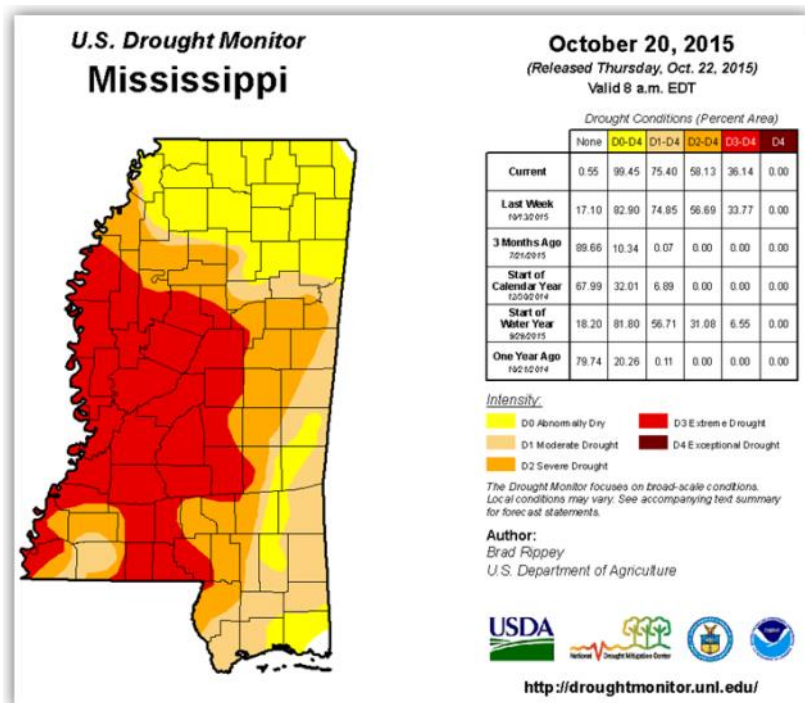


Figure 2. Current drought conditions in Mississippi

4). Although the poisonous plants might not increase in density, they have tendency to maintain productivity and be selected by the livestock due to higher sugar levels and quality than dead or dormant grass. One reason for increased toxicity problems is that there is less (if any) residual carry-over forage to buffer the toxins. It is important to scout your pastures and shaded areas for poisonous plants that can have favorable environmental conditions to allow them to grow and reproduce.



Figure 3. Selecting crops that can have strong seed vigor during drought conditions are important to ensure better establishment and recovery. Annual ryegrass (left) and cereal rye (right) three weeks after planting in Smithdale, MS. Plots planted on September 1, 2015.

Some producers have been looking at grazing other forage alternatives such as Johnsongrass, sorghum, sudangrass, corn regrowth and peanut hay (Fig. 4). It is important to make sure that they are aware of several animal health risks associated with these forage crops during a drought situation after frost. Johnsongrass, corn, sorghum and sudangrass can accumulate toxic nitrate levels under drought conditions. When grazing or making hay from these forages, it is important to test your hay for nitrate levels and adjust feeding recommendations as appropriate. These forages can also accumulate prussic acid after frost stress. Grazing should be avoided at least 7 to 10 days after a severe frost. It is important to note that while prussic acid can dissipate from the tissues, nitrate will remain in the tissue. A reason why a test must be performed before feeding under these adverse conditions. For more information about forage related livestock disorders visit <http://msucares.com/crops/forages/newsletters/09/11.pdf>. Other producers have been contemplating

the use of annual peanut hay as a feed alternative. Peanut hay contains a lot of junk, pesticide residues, and is of low quality. Forage quality is affected due to the loss of leaves, leaving vines that are high in fiber and lignin content. The protein content of peanut hay could range from fair to good, but the energy content is very low. An important point is that certain chemicals (herbicides and pesticides) are not labeled for the feeding of crop residue to livestock. Asked what herbicides were used and read the label to determine their limitation to feeding livestock.



Figure 4. Forage that can impact animal health due to toxins, prussic acid accumulation or low quality and high ash content: (a) perilla mint, (b) Johnsongrass, (c) sorghum/sudangrass, (d) corn regrowth, and (e) annual peanut residue.

Forage producers in several Mississippi Counties may qualify for the Livestock Forage Program due to extreme drought conditions, which is based on the U.S. Drought Monitor. The counties include Hinds, Humphreys, Issaquena, Sharkey, Warren, Rankin, Madison, Yazoo, Leake, Simpson, Rankin, Scott, and Smith. These counties met a D3 (extreme drought) intensity in any area of the county at any time during the normal grazing period is eligible to receive assistance in an amount equal to three monthly payments. This program is intended for livestock producers that own or lease grazing

land. Eligible producers are encouraged to visit their local Farm Service Agency (FSA) for additional information.

Mississippi is now included in the **Rainfall Index Pasture, Rangeland, Forage pilot program (PRF)** beginning crop year 2016. PRF is an area-based plan of insurance that uses (precipitation) rainfall index to determine losses and trigger indemnities within each pre-established 17 x 17-mile grid (area). Each farm is located within 0.25 degree latitude and longitude gridded area, which was established by National Oceanic and Atmospheric Administration Climate Prediction Center (NOAA CPC). Each area is assigned a grid identification number. The grids do not follow state, county, or other geopolitical boundaries. The gridded precipitation data is obtained for eleven 2-month time periods, referred to as index intervals, during each year for each grid ID. Historical gridded data is obtained for each index interval and grid ID. It is important to note that loss for this program is not based on individual rain gauges on producers' farm or data from a single weather station, but loss determined by information provided by NOAA CPC gridded, daily, interpolate, precipitation data. **Producers have until November 15, 2015, to purchase coverage with a FCI agent. Producers are eligible to purchase a NAP policy and PRF; however, producers who are eligible to receive NAP and PRF assistance must choose whether to receive assistance under the pilot program or NAP, but will not be able to receive benefits under both programs for the same disaster.** If you are interested in learning more about the program, please visit <http://www.rma.usda.gov/policies/pasturangerforage/> or visit your closes USDA county office. This website has qualified insurance agents to contact for more information.

For upcoming forage related events visit:
<http://forages.pss.msstate.edu/events.html>

October 27, 2015 – Southwest Mississippi Fall Forage Field Day, Meadville, MS
 November 6, 2015 – Mississippi Forage & Grassland Conference, Newton, MS

Cooperative Extension Service • Mississippi State University

We are an equal opportunity employer, and all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, national origin, disability status, protected veteran status, or any other characteristic protected by law.