

Prescribed Burning of Pastures and Hay Fields in Georgia Georgia Cattleman, February 2002

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Prescribed burns of pastures and hay fields can be an effective part of the long-term management of bermudagrass. There are benefits and risks involved using fire. Before the early spring is here, a discussion on the use of prescribed burning and most importantly, the procedures necessary to most likely ensure a safe burning of a pasture is timely.

What are the benefits?

Burning a pasture has been shown to reduce spittlebug damage on bermudagrass. A properly timed and well managed prescribed burn of a pasture will result in the reduction or elimination of a heavy thatch layer that builds up over several years of production. Thatch buildup can have several negative effects on bermudagrass production. A heavy thatch layer can reduce light penetration of the grass canopy which inhibits young stolon growth. It can keep the soil temperature lower in the spring thereby delaying green up of the field by as much as two weeks. The soil in a freshly burned pasture will absorb more heat energy and green up faster. A thatch layer ties up nutrients which will become available to the pasture once it is burned. A thatch layer may also decrease water infiltration into the soil by absorbing water and causing increased runoff under certain circumstances. A final consideration is that burning the thatch layer will result in a cleaner first cutting of hay. Another major benefit is weed control. Burning the thatch in a pasture will destroy many annual seeds and reduce the weed pressure on the pasture. Woody stemmed perennials such as briars can be destroyed, reducing the contamination in hay. Burning is less effective against weedy perennial grasses due to underground rhizomes or roots.

What are the problems?

Obviously, when dealing with fire, safety is the most important concern. Each year, many acres are unintentionally burned causing damage to the land, wildlife, homes, and unfortunately, even loss of life. Preplanning and management is critical to ensure a prescribed burn works according to plan. Safety measures cannot be overstated. From the perspective of the pasture, several problems may occur. Timing of the burn is critical to maximizing the benefits. Burning too early may allow weeds to regrow more rapidly during the time between burning and green up than if the pasture was not burned. Early burning will also cause the bermudagrass to be more susceptible to late freezes. Burning too late may damage bermudagrass that has begun to green up thereby reducing the stand. A fire too hot, such as a back fire with excessive dead grass and high winds, may kill the bermudagrass stolons on the surface of the soil. One last problem associated with burned pastures is erosion. Heavy rains between the time of burning and green up of the bermudagrass may allow the beneficial ash and soil to wash out of the field.

Managing the prescribed burn.

Planning and preparation are the most important activities to ensure safety. First, develop a fire plan for the field(s) to be burned. A plan should consist of the location of fire breaks, details of how the fire will be set (backfires, headfire line, etc.), location of personnel, and safety equipment. The field should be inspected to ensure there is enough, but not too much, fuel to carry the fire. A four to six inch layer of grass is recommended to carry the fire. Check also for areas containing brush or other fuel that might burn hotter or for longer periods of time. These areas should be noted and special care taken to ensure flying embers will not cross the fire breaks and the areas will be extinguished after the burn.

Firebreaks are extremely important to the safety of a prescribed burn. Not only do firebreaks contain the fire but also protect fences, buildings, and equipment. Several types of firebreaks may be established, but the most effective and recommended one is a plowed strip ten feet wide around the field. It is recommended that the firebreak be plowed two times to ensure that the grass or other types of fuel do not allow the fire to bridge the break and escape the field. A wet break using a green strip of growing small grains may serve as a firebreak. When using a wet break, care must be taken so that the underlying dead grass does not allow the fire to burn through the break and escape. A wooded area adjacent to a firebreak is especially susceptible to flying burning material and special care should be taken. A backfire along the firebreak near the wooded area is recommended to extend the firebreak into the field and reduce the chance of the fire bridging the break and setting the wooded area on fire. A paved road serves as an excellent firebreak. Burning a pasture near a public road poses the hazard of smoke covering the road which may present a driving hazard to motorist using the road. Contact local or county public safety offices before burning near roads. These agencies may provide assistance for traffic management.

Plan for equipment that may be needed at the time of the burn. A portable water tank may be necessary to contain fires that bridge the firebreaks. Local fire authorities may want to place a fire truck near the field as a safety precaution, so contact your local fire chief prior to burning. Move all equipment upwind of the burning area including pickup trucks used by the personnel on hand.

The Georgia Forest Fire Protection Act states that burning pastures does not require a written permit but does require that the county forest ranger be contacted prior to burning and given notice of the location and time of the prescribed burn. During drought periods, the Georgia Forestry Commission may impose burning restrictions that will not allow pastures to be burned.

As mentioned above, setting the time of the prescribed burn is important. The recommended time for burning pastures is approximately one week prior to green up of the bermudagrass. However, green up is difficult to predict in any

given year. Historic dates for the last freeze in the spring is approximately March 13 for south Georgia, March 30 for central Georgia, and April 14 in north Georgia. Watching the weather is the only way to determine the time of burning. Wind conditions determine the day for burning. Winds speed should be less than 10-12 mph which is usually in the morning but heavy dews may prevent burning at this time. Wind direction should be constant to drive the fire in the desired direction. Monitor the weather forecast carefully to avoid shifts in wind direction or speed.

Setting the fire. On the day of the prescribed burn, make sure all personnel know the fire plan and have an escape route from their position. Contact all appropriate officials and give them notice that the burn is going to proceed. Most importantly, follow the fire plan so that no one is caught off guard or possibly injured. The first fires to be set should be the backfires along firebreaks, around buildings, or other areas that require additional firebreak space. Set the headfire in a front or line and monitor the progress carefully. Constantly inspect firebreaks as the fire progresses to make sure the fire does not bridge the break and spread outside the field. Watch carefully for flying material that may escape the field. After the burn is complete, monitor the field closely for hot spots that continue to burn. Some areas may have escaped the burn and may need to be set afire again.

Properly planned and carried out, a prescribed burn can be a very effective management tool for pastures or hay fields. The benefits are many and the cost is relatively cheap. But never forget the dangers and costs of poor planning or an accidental escape of fire. Get help before you burn. Contact your local forest ranger and your county extension agent for more information on planning and executing a prescribed burn of a pasture or hay field.