



BEEF CATTLE TIME

Vol. 26, No. 4

Fall 2008

Should You Aerate Your Pastures?

*Dr. Gary Bates, Extension Forage Specialist
Department of Plant Sciences*

Recently, there has been increased interest in using aerators in pastures and hayfields thanks to the rise in fertilizer prices and limited summer rainfall. We have also heard concerns that cattle and machinery traffic in pastures and hayfields may cause soil compaction. Compaction, in turn, could limit water infiltration and thereby reduce forage yield.

Spike-tooth aerators have been promoted as a tool to decrease soil compaction. These aerators penetrate the soil, which supposedly decreases compaction in the upper soil surface. Holes created by the aerator should allow water to infiltrate the soil, rather than run off without being absorbed. This improved water infiltration should improve forage yield.

Research with aerators has shown no improvements. Aeration did not increase the yields of bermudagrass, bahiagrass or alfalfa in university trials in the Southeast. Work in Mississippi showed that the spike-tooth aerators actually increased compaction around the penetration area.

Yield of tall fescue as affected by aeration treatments. Crossville, TN

Treatment	2000	2001	Avg
	----- lb DM/acre -----		
No aeration	7205	4767	5986
Spring aeration	6407	4581	5494
Fall aeration	6837	4518	5678
Spring and fall	6738	4831	5784
Subsoil	6436	4580	5508

We conducted trials using aerators in Knoxville, Crossville and Spring Hill a few years ago. We aerated at different times of year, using several types of aerators, and differing the levels of soil disturbance. This article is too short to show all of the data, but there was a consistent result seen in all studies: Aeration did not improve the forage yield of tall fescue.

Why was there no improvement?

Aerators promoted for forage use are not the same as those used in the golf industry. Golf courses use aerators that pull a core of dirt out of the soil; pasture aerators punch a hole in the ground. The spikes are usually only about 8 inches long. With this information, it becomes easier to understand why aeration does not increase forage yield. First, compaction is usually not a major limiting factor in forage growth. Compaction in the top 8 inches of the soil is usually broken by plant root growth (even from weeds) and freezing/thawing during the winter. Second, since these aerators generally punch a hole in the ground instead of removing soil, they may actually increase compaction. Compaction below 8 inches will not be affected by an aerator.

UT Extension does not recommend the use of spike-tooth aerators to decrease compaction in pastures and hayfields. Instead, focus on fertility issues, weed control and summer forage species to improve production.

Available Feed - Questionable Quality

*Clyde Lane Jr., Professor
Department of Animal Science*

The feed situation this year is much different from 2007— there appears to be adequate hay available to

winter the cow herd. The big question this year is in regard to quality of the hay.

With adequate to more than adequate rainfall during the spring, there was good growth of forages for hay. However, it was difficult to get hay harvested at the proper stage and without it being rained on, leading to the problem of how to properly supplement existing hay. A forage test is needed to determine quality of the forage. For \$10 UT can perform a forage test to determine protein and energy content. Local UT Extension agents can assist with hay sampling.

The bigger question is how to supplement if additional protein or energy is required. Supplemental feeds are expensive and the old standbys – corn and cottonseed or soybean meal – may not be the best choices. Find out what feeds are available in the area. Compare cost per ton of feed and the actual cost per pound of the nutrient needed (i.e., protein or energy). Add the cost of transportation, storage and potential wastage during storage to the total costs.

A cost often not considered is the expense of specific mineral mixes, which are required when certain supplements are fed. Corn gluten and distiller grains have a high sulfur content. Also the high phosphorus content of these feeds may allow for the use of a mineral with a lower phosphorus level. Work with your local feed dealer to determine specific mineral mixes needed and cost.

In summary, beef producers should plan ahead for feeding the beef herd this winter. Forage test each cutting of hay. Find the most economical source of supplemental feed. Remember that inadequate nutrition can lower calf crop percent and also reduce weaning weights.

Reducing Costs of Maintaining the Beef Herd

*Clyde Lane Jr., Professor
Department of Animal Science*

The cost of doing business is a major concern of beef producers. Is there anything that producers can do to reduce costs? The answer is yes.

The biggest cost saver is reducing hay wastage. Research shows that more than a third of the hay may be wasted if not fed in rings. The new cone type hay feeders have been shown to save the most hay. Also, make animals consume all of the acceptable quality hay in the feeder before moving it to further reduce wastage and the number of times the tractor must be started to feed.

Another way to save is by feeding cattle closer to your residence; a greater distance to transport hay increases fuel costs. If cattle are on two farms, move animals from the farm the greatest distance from the homestead to the home place. This method requires fewer trips and less fuel used during feeding. Place cows near calving closer to the house so that a vehicle or tractor does not have to be started to check cows. It is also easier to observe the cows at calving, resulting in more calves being saved.

Do not forget efficiency when controlling costs. One of the most costly things a beef producer can do is feed an open cow. Pregnancy check cows before winter feeding starts and cull cows with marginal production. Also, cull replacement heifers that are questionable.

In short, take a close look at your beef herd management. Just because something has always been done a certain way does not mean it is the most efficient or economical. Be open to changes, but be sure that the changes can be justified. Stopping vaccinations to save money is not the thing to do. However, re-evaluating the vaccination program to ensure that unnecessary vaccines are not being given is wise.

FEEDING COWS DURING COLD WEATHER

*James B. Neel, Professor, Animal Science and
Extension Beef Cattle Specialist*

Many cow/calf producers are not aware that cold weather brings added nutritional needs for cattle. Or, if they recognize that their cattle are stressed, they aren't sure how – or what – they should do to offset it.

Cold stress occurs when animals are exposed to weather conditions which put them below their lower critical temperature. For cattle with a dry winter coat, the lower critical temperature is 32 F. If the coat is extra heavy, that number drops to 18 F. If the normal coat is wet, however, the lower critical temperature may become 60 F.

When the environment results in an effective temperature below the animal's lower critical temperature, the animal must increase heat production to maintain a constant body temperature. To produce more heat, the animal either must receive an increase in energy from the ration or draw on body stores.

To compensate for the energy deficit created by the cold stress, follow this rule of thumb: Increase the amount of feed 1 percent for each degree of cold

stress. If a wind chill is present, use that temperature.

Keeping hay in front of cattle will not take care of the problem. If the hay is good (cut before it matured and baled before it was rained on), cattle will probably make it through cold weather in good condition. If hay quality is poor, the cattle may be in trouble. A 1,200 pound cow, in good body condition, needs a ration that has a minimum total digestible nutrient (TDN) value of 50 percent and crude protein (CP) value of 8 percent under neutral environmental conditions. The TDN value is often used to indicate the energy level of a feed. Concentrates have higher TDN values than forages, but do not generate as much heat. In comparison, shelled corn has a TDN of 90 percent and soybean hulls, 80 percent. If hay falls below the 50 percent TDN minimum, producers should consider supplementing with an energy-dense feed.

If protein levels are too low, rumen microbes cannot efficiently digest fiber. In that case, adding supplemental protein can increase hay consumption and digestion. High-protein feedstuffs include soybean meal (49 percent CP), cottonseed meal (41 percent CP) and corn gluten feed (19 percent CP). If both energy and protein are low, the supplement should contain a balance of both.

Provide some type of shelter such as woods, hills or buildings to protect cattle from winds. Reduce mud in and around feeding areas. Cold mud on cattle draws on their energy stores and body temperature, especially in young calves. Monitor weather reports and make adjustments in feeding 2 to 3 days before the weather front hits the area.

COOL: It's finally here! Now What?

*Tammy L. McKinley, Extension Assistant
Emmit L. Rawls, Professor*

Country of Origin Labeling (COOL), which became law in the 2002 Farm Bill, is finally here. As of September 30, retailers must provide labeling on all covered commodities. Covered commodities include muscle cuts and ground meat from beef, lamb, chicken, goat and pork; wild and farm-raised fish and shellfish; fresh and frozen fruits and vegetables; raw peanuts; pecans and macadamia nuts; and ginseng. These items are exempt from COOL when sold through food service establishments such as hospitals, restaurants, etc.

Retailers should label products with the country of origin. They, in turn, pass requirements down the

supply chain of packers, feeders, stocker operators, and finally, cow/calf producers, to provide records to prove the country of origin.

You can prove the origin of your cattle through documents used "in the normal course of business" – herd and calving records, vaccinations and vaccine purchases, and feed purchases. Document the size and composition of your herd as of July 15, 2008, because you may be selling brood animals grandfathered in on this date for several years to come. Also, request affidavits on purchased animals entering your operation.

When cattle are marketed through an auction market, the market must have records (affidavits signed by the sellers) attesting to the country of origin for all cattle sold. The affidavit must be signed by the individual with firsthand "knowledge of the origin of the livestock" being sold. **It can not be signed by truckers or transporters.** Many auction markets use a Continuous Country of Origin Affidavit, which covers all cattle sold by that individual until further notice. The market will then provide buyers with an Origin Declaration for livestock purchased, based on the affidavits provided by the sellers to the market.

If you sell cattle direct from your operation, provide a signed affidavit attesting to the origin of the cattle. If you buy cattle direct from farms, have affidavits for your suppliers to sign on each load of cattle you purchase, because you will need to provide that information to your buyer.

If you are a backgrounding/stocker operator, keep a record of the seller and/or sale date and location by requesting affidavits documenting such information. Provide affidavits on animals sold. Keep a record of the buyer and/or sale date and location of animals sold. Commingled groups of animals with the same country of origin do not need to be individually tracked as long as your records prove a balance between total purchases and sales for the group. If you have animals from multiple countries of origin, segregate the animals by origin and have supporting records unless the animals are individually identified.

The affidavits that have been mentioned have not been provided by USDA. Instead, representatives from industry and related organizations developed the documents to provide the origin claims along the supply chain. The affidavits/declarations they developed are online at www.lmaweb.com.

The USDA considers the first six months after September 30, 2008, a period of education rather than enforcement. Products produced before September

30, 2008, are exempted, and animals in the United States on July 15, 2008, are considered US origin. Also, individual identification of animals through a National Animal Identification System or other official identification system, such as the systems of Canada and Mexico, can be used to prove country of origin.

Calendar of Events

2008

Oct. 28 – Open House at Central Bull Test Station, Middle Tennessee Education and Research Center, Spring Hill

Dec. 10 – Breeders Performance Tested Bull Sale, Tennessee Livestock Center, Murfreesboro

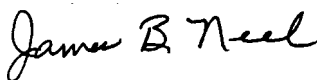
2009

Jan. 22 – Tennessee Cattlemen’s Association’s Convention, Music Road Inn, Pigeon Forge

Jan. 22-24 – Senior Central Bull Test Station, Middle Tennessee Education & Research Center, Spring Hill

Feb. 24-25 – Mid-South Stocker Conference, Lake Barkley State Resort Park, Cadiz, Ky.

March 5 – Tennessee Nutrition Conference, James Ward Agricultural Center, Lebanon



James B. Neel, Professor
Animal Science

Beef Cattle Time

From:

Leader/Agent

Visit the UT Extension Web site at
<http://www.utextension.utk.edu/>

THE UNIVERSITY of TENNESSEE 
INSTITUTE of AGRICULTURE

21M E12-4415-00-003-09 09-0082

Programs in agriculture and natural resources, 4-H youth development, family and consumer sciences, and resource development.
University of Tennessee Institute of Agriculture, U.S. Department of Agriculture and county governments cooperating.
UT Extension provides equal opportunities in programs and employment.