Beef News
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Alleghany Cattle Meeting

Thursday, April 20th

The Alleghany Cattle Association meetings have been growing in numbers with each meeting. There were 22 people at the March meeting. Thanks to everyone for attending!

You’re invited to attend our next meeting which will be held on:

Thursday, April 20, 2006
7:00 p.m.
Blue Ridge Electric Conference Room

Mr. Bundy Plyler, Executive Director of the State Cattlemen’s Association will be our guest speaker. Mr. Plyler will be talking with us about becoming affiliated with the State Association.

At our March meeting the following Officers and Board of Directors were elected for the Alleghany Cattle Association. Congratulations to all of you and thanks for agreeing to serve our Association.

- President ~ Mike Phillips
- Vice President ~ David Richardson
- Secretary-Treasurer ~ A.M. Phipps
- Director ~ 1 year term ~ Bobby Irwin
- Director ~ 2 year term ~ Everett Elliott
- Director ~ 3 year term ~ Sammy Evans

Mark your calendar for April 20th and invite your friend or neighbor to come along with you!
Does Aeration of Pastures and Hayfields Pay?
(The article below was reprinted from “The Georgia Cattleman”)

A common question often asked by cattlemen is, “Does soil aeration pay?” This is a good question as soil aerator machines require a substantial expenditure and many claims are being made about substantial yield increases after aeration of pastures or hayfields. Aerator machines are tractor-drawn with varying designs such as coulters making a narrow slit in the soil, a roller with many spikes making indentations in the soil, or prongs which function like a mini-subsoiler.

### Purpose of Aeration

The main problem that might justify aeration is soil compaction, caused by cattle hooves or farm equipment driven over the field. This type compaction is primarily at the soil surface, affecting the top two or three inches. Compaction in this area would be expected to reduce water infiltration and increase runoff, thus decreasing forage yield. Alleviation of this type compaction by breaking up the compacted crust on the surface should allow more water infiltration and improve forage growth.

### Research Results on Aeration

A few replicated field experiments have been conducted with aerators or chisels on pastures or hayfields. Coastal Bermuda grass on an eroded soil with a clay pan on the surface was chiseled to a depth of six inches which doubled or tripled forage yields in Texas. In Wales, a perennial ryegrass pasture on clay loam soil grazed with cattle for 26 was aerated with rotating long triangles that penetrated to a depth of 5 inches, doubling forage yield. Demonstrations with aerated and non-aerated strips of tall fescue on four farms in south central Tennessee showed a forage yield advantage of only 214 pounds of dry forage per acre. The cost of aeration was estimated at approximately $10 per acre. It was concluded that aeration did not pay the expenses. In north Alabama, two types of soil aerators increased tall fescue yields but the cost of aeration exceeded the value of extra forage produced.

### Conclusions on Aerators

Most of the research done on the value of aerators for pasture and hay is not encouraging. This does not mean that aeration will always be ineffective. It is possible that there are sites where severe compaction problems exist from cattle trampling or heavy equipment traffic on certain soils where aerator equipment may improve water infiltration and increase forage yields. Careful evaluation of potential aeration sites should be done before using a soil aerator. From research results so far, it is unlikely that most areas will give much economic benefit from this practice. Soil disturbance by an aerator can also be expected to increase weed problems in a pasture. The reason for this is that soil disturbance will scarify hard coats of weed seed lying in the soil so they germinate.

### How Grass Grows

In cool season, grasses like fescue and orchard grass the stem area directly above the growing point is where the bulk of the plant's food reserves are stored. If these reserves are removed by grazing too closely, the plant will recover slowly.

While the roots are important in that they are responsible for drawing water and nutrients from the soil, it is the leaves that transform those nutrients into growth. Therefore, it is important that there be some green leaves left after grazing to manufacture the essentials of regrowth. These basic principles are central to grazing management. We must not graze so closely that we repeatedly remove food reserves or all of the leaves. If we do the rate of regrowth [and consequently the total yield] will be reduced no matter how much we fertilize. In other words, filling the tank with gas will do little good if we've drained the battery or removed the spark plugs.
Distance Cattle Travel to Water Affects Pasture Utilization Rate

Location of watering sites has a profound effect on livestock grazing distribution. Cattle tend to congregate near water and overuse those areas. This overuse may result in lower production from these areas, reduction in plant community, and leave the land open to soil erosion and weed invasion.

A study was done to determine at what distance from water grazing distribution changes. Cattle grazing in a ten acre pasture that was nearly square with a maximum travel distance to water of about 800 feet grazed very uniformly over the entire pasture. In a rectangular 10 acre pasture with a maximum travel distance to water of about 1400 feet, the cattle grazed fairly uniformly on only the front 600 to 800’ of pasture. Beyond that distance, utilization rate dropped off rapidly. In practical terms this means that pasture systems should be designed to supply water at various locations such that grazing animals do not have to travel farther than 600 to 800 feet to access water.

While individual animal performance may not be affected if they travel farther to water, land use efficiency will increase when travel distances are kept below these limits. Improved land use efficiency translates to higher carrying capacity on the farm and more animal product per acre. More animal product per acre lowers overhead costs per unit of product and can lead to increased profitability.

Importance of Lime

Many farmers believe lime is like fertilizer, that the plant needs the calcium in order to grow. In fact most soils, even strongly acid ones, contain more than enough calcium to sustain acceptable yields. The reason we lime lays in an entirely different direction.

Picture a glass of tea that you want to sweeten. If the tea is warm the sugar will dissolve quickly and completely. If you put the ice in the glass first you will spend a lot more time stirring. The pH of a soil is like the temperature of that tea. The more acid [sour] the soil is the more soluble certain elements are. There are other elements that are more soluble in basic [sweet] soils. This is important because plant roots can not strip nutrients from the surface of the soil particles. The nutrients must instead be first dissolved in the soil solution, and then absorbed by the roots. Certain elements such as nitrogen, phosphorus and potassium are required for plant growth. Others such as manganese, aluminum, iron, zinc and copper, can reach toxic levels if they become too soluble. The best plant growth will occur when the pH of the soil is such that the required elements are dissolved and readily available and the toxic elements are poorly dissolved or tightly bound to the soil particles and are less available.

These optimal conditions occur when the pH of the soil is maintained between 6.0 and 7.0. Also in this range other organisms, such as the bacteria responsible for fixing nitrogen for clovers are better able to thrive. This, then is why we lime, to make the good elements available and to bind the toxic ones out of the way. The narrowness of this range also explains why a soil test is so important. Lime is too vital to do without and too expensive to waste.

Grazing Tips

- You should be always be thinking a year ahead when grazing.
- White clover flourishes with frequent harvest because of better access to light.
- Pastures that are correctly managed increases output with age.
- Harrowing probably does less aeration than earthworms.
- If the grass gets too short, there will not be enough leaf area to collect sun, and growth will be slow. Also, if plants get too big, the growth will become slow, stemmy, and you lose protein.
- The method of management, not the amount and species of seed sown, determines the composition of the pasture 3 years and onward.
- For quick re-growth and a healthy stand, forage should not be grazed shorter than about 3 inches. This saves enough leaf area for photosynthesis and reduces the need for the plant to draw too heavily on root reserves.
If I can be of service to you, please feel free to give me a call, 372-5597.

Sincerely,

George W. Stancil
County Extension Director

GWS/krm