Native Warm Season Grass Tour

By: J. B. Daniel

The VFGC Native Warm Season Grass tour held on July 17, 2013, in Augusta County brought out farmers, conservationists, wildlife enthusiasts, and private contractors on a hot summer day in the Valley. It was an interesting mix of about 70 people from all different backgrounds but “grass” was the common thread bringing everyone together.

The tour began at Bellevue Farm where Charlie Drumheller and his son Bobby explained how they have used plantings of switchgrass mixed with big bluestem to complement their grazing operation with the option to hay depending on the season. This year Charlie is using temporary electric fencing and portable water troughs to manage grazing the NWSG mixture with a higher stock density in small strips of forage across the 13 acre field. Forage quality samples collected and analyzed the week prior, showed crude protein (10.5%) and total digestible nutrient (60.5%) levels surpassing the needs of the lactating beef cattle in this field.

The remainder of the program was at Buck Hill Farm, where Dave Horn and his family hosted the participants for lunch and a tour of their NWSG’s. Dave explained how they had identified land many years ago that just did not have the productive capability to support corn or forage crops comparable to most of the farm. This acreage was established to a mixture of big and little bluestem primarily for wildlife purposes about 13 years ago, but it is generally grazed once per growing season and then allowed to regrow for wildlife cover. Over the winter Dave enjoys introducing youth to quail hunting on his native warm season grass acres.

Aaron Tammi, a local Custom Planting Contractor, discussed the importance of proper planning and field preparation prior to seeding NWSG’s. Dr. John Fike, VA Tech Forage Agronomist, as well as herbicide company representatives emphasized the importance of annual grass and weed control at establishment, giving examples of both chemical and mechanical control strategies.

If you are interested in planting NWSG’s on your farm or would just like to know more about how they might fit into your farm system, then contact your local Natural Resource Conservation Service office. They are a great resource for technical assistance and planning for NWSG establishment and there may be some financial assistance available to help you get the grass established.

Special acknowledgment goes to the Chesapeake Bay Foundation and the National Fish and Wildlife Foundation for grant funding supporting this educational meeting.

JB Daniel is with the SDA NRCS and also serves on the VFGC board.

Stocking Tips

Stocking tall fescue can significantly reduce winter feed costs for cow-calf herds in Virginia. The following steps will help to optimize your stocking program:

- Choose a strong tall fescue sod in a field that is well drained
- Clip pastures that will be stocked to 3-4 inches prior to applying nitrogen.
- Apply 60-80 lb of nitrogen per acre in mid to late August. Allow growth to accumulate until mid-December before grazing.
- Graze stockpiled pastures that contain legumes first.
- Strip graze tall fescue to maximize grazing days.
- Frost seed legumes on grazed areas.
Silvopastures are created either by thinning and pruning existing timber stands or by planting trees. Silvopastures can be found at http://www.plantmanagementnetwork.org/pub/fg/review/2004/silvo/

Silvopastures can be created by either thinning and pruning existing timber stands or by planting trees. Silvopastures in the U.S. are most common in the Southeast, where livestock are managed along with pines. Adoption is on the rise in Virginia as potential benefits shown in early research, along with increased extension efforts and addition of silvopastures to the list of accepted NRCS conservation practices, all contribute to greater awareness of these systems. Persons interested in these systems may want to check out the publication: Considerations for Establishing and Managing Silvopastures which can be found at 

So what does all this have to do with Soggy Swamp’s quote? Well, if your definition encompasses a muck hole under a solo tree, or the woodlot degraded by years of turning in the cattle without management...then you have-n’t got a silvopasture. But, if you mean the integration of trees in pastures (or forages under trees) in systems that allow producers to better use land and protect resources, then indeed you’ve got a silvopasture.

John Fike is Associate Professor in the Crop and Environmental Sciences Department of Virginia Tech and educational advisor to the VFGC.

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Silvopastures Page 3

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and eighty degrees opposite of what it should be.

Only one more topic to go, and that is how we look at fencing. Our conventional thought is that we fence to keep our livestock IN. That is, to confine them to a particular spot, such as a field or pasture. Have you ever considered that it is just as valuable to think of fencing as a way to keep the livestock OUT? Cattle have a real destructive effect on a fence. They will select out and eat all of the desirable forage to the point where it gets so weak that it can’t compete with the less desirables. That means lower quality grass, more weeds and more brush (more junk). They will step on it and make it inedible. They will urinate and defecate in one spot causing that area to have concentrated nutrients and grass that the livestock can’t eat. (Do you have the desire to let these cattle spread more evenly across the farm?) They will path ways across the pasture which soon are void of plants, and then erosion starts to take the soil off of the farm. In other words, by fencing cattle IN, the productivity of a pasture drops to half of what it once was, or less, as the quantity and quality of the forage declines.

Now if you think back a couple hundred years ago, there were not as many folks with fences. Most cattlemen grazed all summer and fed hay in the winter. Keep the livestock OUT of your neighbors’ farms. So if your only concept of fencing is just to keep animals out, I think you have it backwards because there’s a whole lot more to be gained by keeping them OUT! Why? The hayfield is really the point of the grass, because if you love your grass you will have the best time for most of us to spray pastures is in the fall. But I generally think that it is just as valuable to think of fencing as a way to keep the livestock OUT? Cattle have a real destructive effect on a fence. They will select out and eat all of the desirable forage to the point where it gets so weak that it can’t compete with the less desirables. That means lower quality grass, more weeds and more brush (more junk). They will step on it and make it inedible. They will urinate and defecate in one spot causing that area to have concentrated nutrients and grass that the livestock can’t eat. (Do you have the desire to let these cattle spread more evenly across the farm?) They will path ways across the pasture which soon are void of plants, and then erosion starts to take the soil off of the farm. In other words, by fencing cattle IN, the productivity of a pasture drops to half of what it once was, or less, as the quantity and quality of the forage declines.

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Stockpiling Reduces Winter Feed Costs

By: Peter Callan

Virginia Tech 2011 livestock budgets show that winter feed costs comprise 60 percent of expenses for fall calving/calf producers who feed hay during the winter months. One way to lower feed costs is stockpiling forages for winter grazing.

Stockpiling is the practice of saving hay fields and pastures for late fall and winter grazing after the growing season has stopped. In Virginia, many cow/calf producers schedule the last hay cutting before November 1st in order to allow these fields sufficient time for regrowth. Fescue is a grass that is found on many farms throughout the state and is stockpiled for winter grazing. Stockpiled tall fescue maintains forage quality better than other commonly used cool-season grasses. It also produces higher yields of stockpiled forage of superior quality compared to most other cool season grasses.

A 3-year Virginia study showed that stockpiled tall fescue contained 23% more energy and 36% more crude protein compared to average grass hay in Virginia. For example, stockpiled fescue fields that received 40 pounds of nitrogen per acre averaged 13% crude protein and 68.1% total digestible nutrients. Although there was a slight increase of .7% crude protein when the nitrogen rate was increased from 0 - 120 pounds per acre, the range was small and likely biologically insignificant. The nutritive value range observed for stockpiled tall fescue in this study is similar to observations made on a commercial farm in south central Nebraska for over a 5 year period. Furthermore, the stockpiled fescue in the 3-year study would meet the nutritional requirements of all classes of beef cattle. The yield of stockpiled fields is dependent upon rainfall and nitrogen application rate.

The 3-year Virginia study compared nitrogen rates and source effect on the yield of stockpiled fescue. Stockpiled fields that did not receive nitrogen produced ~2,500 pounds of dry matter per acre. Yields increased linearly for each source of nitrogen, however, rates of yield increase varied between nitrogen sources. Ammonium sulfate, broiler litter and urea are the most common nitrogen (N) sources used to fertilize pastures in Virginia. The 3-year Virginia study determined the increase in yield of pounds of dry matter (DM) for each pound of nitrogen applied from the following products: ammonium sulfate (11.08), broiler litter (9.29), and urea (7.10). Many producers apply ~40 pounds of nitrogen per acre to stockpile fescue for winter grazing. Table 1 shows the response rate in pounds of dry matter and grass per acre using an application rate of 50 pounds nitrogen per acre and assuming a pound of grass is 80% water and 20% dry matter. Clearly rainfall is one of the most important factors influencing pasture yields. It is recommended that nitrogen be applied when there is a high probability of rainfall in the weather forecast to maximize yields.

June 2013 nitrogen prices are listed in Table 2. The broiler litter prices are based on a minimum of 45 pounds of nitrogen per ton. Due to the volatility of fertilizer prices in recent years, producers should check fertilizer prices in order to determine the most inexpensive source of nitrogen. However, there are several factors besides nitrogen price that producers should consider when selecting the “best” type of nitrogen fertilizer for stockpiling. Additional nutrients may be included in the nitrogen sources which will increase yields. For example, broiler litter contains phosphorus and potash and ammonium sulfate contains sulfur. Urea is most susceptible to volatilization and produced the lowest yields. It is recommended that producers use soil tests to determine the nitrogen source that will maximize yield.

Table 2

<table>
<thead>
<tr>
<th>Nitrogen Source</th>
<th>$/lb. N</th>
<th>lb. N/acre</th>
<th>$/acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonium Sulfate</td>
<td>.77</td>
<td>50</td>
<td>$38.50</td>
</tr>
<tr>
<td>Broiler Litter</td>
<td>.77</td>
<td>50</td>
<td>$38.50</td>
</tr>
<tr>
<td>Urea</td>
<td>.67</td>
<td>60</td>
<td>$33.50</td>
</tr>
</tbody>
</table>

The following example illustrates carrying capacity for one acre of stockpiled forage that received 50 units of nitrogen from ammonium sulfate:

DM yield = 2,500 lb. (0.6 N applied) + (50 lb. N X 11.08 lb. DM)
3,054 lb. DM = 2500 lb. + 554 lb.
Assuming that a 1,000 lb. cow consumes 2.5 lb. DM / 100 lb. DM per day
3,054 lb. DM / 25 lb. DM per day = 122 days
Thus one acre of stockpiled forage fertilizer will provide ~120 days of winter grazing for one cow. As previously mentioned, rainfall has a major impact on the amount of forage stockpiled for winter grazing. Therefore many producers will stockpile 1.5 - 2.0 acres / animal in order to have sufficient forage to graze throughout the winter months. In contrast, producers may elect to feed hay during the winter months.

The following example shows the cost of feeding hay to a 1,000 lb. cow that eats 25 lb. of hay for each 120 day period. A ton of tall fescue removes the following nutrients from the soil: 39 lb. Nitrogen, 19 lb. Phosphorous, and 53 lb. Potash. Using June 2013 fertilizer prices, a budget shows that a ton of tall fescue removes ~$65 of nutrients from the soil:

2,000 lb. hay (15% moisture) = 1,700 lb. DM or .85 ton DM
Drought matter requirements for one cow for 120 days: 25 lb. DM/day X 120 days = 3,000 lb. DM or 1.5 tons DM
1.5 tons DM / .85 ton DM from one ton hay = 1.76 tons of hay
Assuming that ~15% of the hay is wasted during feeding, each cow requires ~2 tons of hay for a 120 feeding period.
In June 2013 Virginia Tech crop budgets showed that it costs ~$150 to produce a ton of fescue hay which includes ~$65 in fertilizer costs. Since not all of the hay that is exported from farms is stockpiled, the nutrient field is exporting from that field, the nutrients must be replaced to maintain fertility. Otherwise, nutrient levels will be depleted.

Table 1

<table>
<thead>
<tr>
<th>Nitrogen Source</th>
<th>lb. N/ acre</th>
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<th>lb. Grass/ acre</th>
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<tbody>
<tr>
<td>Ammonium Sulfate</td>
<td>11.08</td>
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<td>554</td>
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<tr>
<td>Broiler Litter</td>
<td>9.29</td>
<td>50</td>
<td>465</td>
</tr>
<tr>
<td>Urea</td>
<td>7.10</td>
<td>50</td>
<td>355</td>
</tr>
</tbody>
</table>

If by Silvopasture...

By: John Fike, Adam Downing, Greg Frey, and Patti Nylander

In the 1950s, Judge Noah S. "Soggy" Sweat made an oft-quoted equivocation about the merits of legalizing whiskey sales in Mississippi. In the speech, the judge noted: “When you say whiskey you mean the Devil’s brew, the poison scourg, the bloody monster that defiles innocence…then certainly I am against it. But, when you use the term ‘key’, you mean the oil of conversation, the philosophic wine…that drink the sale of which pours into our treasuries untold millions…then I am for it.” Of course, Judge Sweat was taking no position whatsoever! So what does this jumble about whiskey sales have to do with silvopastures? Maybe nothing, but it makes a nice lead in to the three points we want to make.

First, we need solid terms when describing or defining something so we know what we’re talking about. The term silvopasture is constructed from “silvo” (derived from the Latin “sylvan” which means “of the forest”), and of course “pasture”, one of our favorite topics. So as a basic working definition, silvopasture represents a merger of tree and pasture production systems.

Second: True silvopasture systems involve the purposeful, managed integration of trees, forages, and livestock. With appropriate management, these systems increase the overall output of the land base by improving the use of available resources. Appropriate levels of shade can benefit forage production by reducing heat load on and moisture losses from the forage canopy; and, it reduces animal heat stress.

Third: Silvopasture is NOT the casual use of one tree in a pasture; nor is it providing livestock access to the back woodlot for shade without any management. Such unsupervised, free ranging often creates degraded soils, increased erosion, and stress, and results in forests void of desirable regeneration - often with poor timber quality.

Silvopasture page 8

To JOIN the Virginia Forage and Grassland Council’s membership form can be found on the web at http://vaforages.org - Contact Margaret Kenny at makenny@vt.edu or call 434-292-5331

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Winfield Solutions
and profitability. Virginia Tech soil test laboratory. Page 11 recommendations are based on research conducted for Virginia soils and climate. The design of grazing system imple-mented on a farm has major implications regarding pasture fertility.

Missouri researchers estimated that grazing animals recycle 75-85% of forage nutrients consumed. An even distribution of manure throughout a paddock is required for productive plant and animal growth. Intensity of graz-ing rotations affects the manure coverage in paddocks. In a rotational grazing system there is an even distribution of manure because the animals are forced to consume forage in the paddock before being moved to another paddock. The Missouri researchers calculated that under continuous grazing practices, 27 years would be needed to obtain one manure pile per every square yard within a pasture. Con-ver-sely, the pasture was divided into paddocks and a two day rotation was used; then two years would be needed to achieve an even distribution of manure within the pad-dock. 10

In times of surplus forage in a pasture, the hay can be baled and stored for future use. Kentucky researchers have estimated that a ton of grass hay (fescue, orchard grass) removes the following nutrients from the soil: 12 lbs. of phosphate and 50 lbs. of potash. 11 If these nutri-ents are not replaced, soil reserves will be depleted over time. Consequently, there will be a reduction in crop yields. Soil testing determines the amount of fertilizer that needs to be applied to maintain hay yields.

Cooperative extension agents can assist producers in the design of grazing systems for their farms. Numerous grazers have stated that the greatest challenge in imple-menting a grazing program on their farm is taking the first step which is splitting a pasture in half using temporary fence. Once they see how easy it is to move the cattle from one paddock to another, they never look back. How many times on a dairy farm do the dairy cattle harvest their forage and distribute their manure for free? In an era of high grain, fuel and fertilizer prices, grazing heifers pro-vides producers the opportunity to reduce their operating costs and in a simple user friendly management system.

Dairy Heifers Page 2

Due to a lack of rainfall in the summer months, many pastures may not grow enough forage to meet the ani-mals’ dry matter intake levels. Based on forage quality and quantity and dessertory of gain, many producers supplement the grazing heifers with silages, bypass pro-tein, vitamins and minerals, etc. The goal is to achieve 1.75 pounds rate of gain that is needed for dairy heifers to fatten on 30 days. So supplements are used to manage their forage and distribute their manure for free. 12 In an era of high grain, fuel and fertilizer prices, grazing heifers pro-vides producers the opportunity to reduce their operating costs and in a simple user friendly management system.


Due to the dramatic rise in grain prices over the past six months, dairymen are wondering how they can get the most bang for their buck when they have limited funds for feed. In an era of high grain, fuel and fertilizer prices, grazing heifers provides producers the opportunity to reduce their operating costs and in a simple user friendly management system.

Grazing Dairy Heifers Increases Profits

By: Peter Callan

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Jim Gerrish, nationally renowned grazing specialist, conducted three one-day advanced grazing schools at Upperperville, Steeles Tavern and Blackstone, Virginia July 22-25. Approximately 35 of Virginia’s top graziers attended the sessions.

Gerrish took the attendees to the next level of grazing by focusing on specific strategies that examined grazing height, water management, grazing times and their impact on forage productivity. According to Gerrish, Virginia graziers can easily increase their productivity two-fold by going from continuous grazing to well managed rotationally stocked pastures where livestock is moved every 3-5 days. Even higher productivity may be achieved if pastures are grazed and rotated on a daily basis.

At each location the attendees participated in a pasture walk with Gerrish. Activities included pasture analysis that focused on optimum grazing heights and determining amount of forage in the pasture system. Practical applications helped determine animal grazing days per acre and how many acres needed to be allocated to the herd to develop an effective grazing system.

Gerrish also taught management concepts of taking pasture inventories and developing a grazing wedge. According to Gerrish, producers need to take pasture inventories on a regular basis. This will allow producers to better manage their forage by matching forage supply to animal needs. Pasture availability and problems associated by drought can be better managed if we can better predict available forage on-hand.

This workshop is another great example of services provided by the Virginia Forage and Grassland Council to better meet the wide and varied needs of Virginia’s forage and livestock producers. To learn more about upcoming educational opportunities visit the VFGC’s webpage found at www.vaforages.org. To view pictures from the advanced grazing school visit Virginia Tech’s Southern Piedmont AREC’s Facebook found at https://www.facebook.com/pages/Virginia-Tech-Southern-Piedmont-Agricultural-Research-and-Extension-Center/170129166429643 and click on “Photos” then “Albums” and then “Advanced Grazing School-2013”.

Jim Gerrish talks about the importance of pasture inventories for planned grazing.