By: Lindy Tucker and Laura Seigle

While agricultural Extension faculty across Virginia spend a significant portion of their time helping adult learners improve their farm management programs, agents have long held the understanding that teaching youth can set the stage for a lifetime of engagement in research-based farm practices.

Virginia Cooperative Extension’s Youth Cattle Working Contest encourages high school-aged 4-H and FFA students to treat and handle cattle in accordance with the standards of Beef Quality Assurance, an industry-wide program encompassing best management practices which promote carcass quality, animal health and welfare, and handler safety. Youth who practice for the contest learn to give injections and medications correctly, keep detailed records, and restrain animals properly—skills which can enhance future careers on the farm or in the agricultural industry.

On Monday, April 14, thirteen teams consisting of three students each gathered from across the state beside the cattle working facilities at the Southern Piedmont Agricultural Research and Extension Center in Blackstone to begin the Southern Piedmont Regional Youth Cattle Working Contest, one of five regional competitions taking place in Virginia. Students competing represented Bedford, Botetourt, Buckingham, Charlotte, Cumberland, Dinwiddie, Hanover, and Powhatan Counties. Each team faced the same tasks, beginning with calmly catching and restraining three calves in the headgate and then applying a fly tag, implant, pour-on dewormer, and nasal and injectable vaccinations. As any cattleman knows, working cattle is often unpredictable, and in each competition echoes the variety of products, methods, and animal behavior seen across the state from farm to farm. The Southern Piedmont location had a surprise of its own as teams arrived to find Holstein heifers from a local dairy as their clients for the day. These well-mannered calves made for a quiet and fairly smooth handling experience but challenged youth in other ways such as finding space for fly tags amidst farm tags, RFID tags, and ear notches. Judges watched carefully, evaluating the students for technique, efficiency, safety, and correct recordkeeping. This year’s judges included Jennifer Morris, local cattle producer, Mike Henry, manager of the Amelia Area Cattlemen LLC, and Kayleigh Mize, Brunswick County 4-H agent.

Taking first place in the regional competition was J. B. Daniel is the State Grassland Agronomist for Virginia USDA/NRCS and serves as a educational advisor to the VFGC. the first ever perfect score! The growth in these youth over the last few years in their cattle working skills and personal development has been impressive. The results of this year’s competition show that these students are ready to take on the challenge of working cattle on a farm.

The course wrapped up with a one-on-one session of participants with instructors outlining their farm goals and summarizing farm information to develop a plan of action for their personal farm operation. The participants enjoyed meeting each other, interacting with the instructors and learning the core concepts of forage and grazing management in this interactive and personal setting. Congratulations to this class of grazing school graduates and we look forward to seeing you all again at regional summer field days and at the American Forage and Grassland Council Annual Meeting in Roanoke, VA this coming January 23-24, 2017. Mark your calendar and watch for more information on the agenda and registration details this summer.

The VFGC is fortunate to have such a dedicated group of Board members consisting of producers, agency, industry and educational advisors who work together to teach these grazing schools. This VFGC grazing school was a partnership event with VA Tech, Virginia Cooperative Extension, USDA-NRCS and the Chesapeake Bay Foundation and was partially funded by a Conservation Innovation Grant.

Grass Facts

Species: Eastern Gamagrass (Tripsacum dactyloides)
Description: Native perennial bunch grass that has short rhizomes and grows to a height of 3 to 8 ft. Mature plants can have crowns can reach 3 ft in diameter. It is well adapted to wet natured soils and is often found along rivers and in flood plains.
Positives:
- It is extremely palatable and livestock performance is excellent.
- It is hard to establish. Gamagrass possesses a high level of seed dormancy.
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Approximate Yield: 3 to 7 ton per acre.
Establishment: Plant prechilled or chemically treated seed at a rate of 10 lb PLS/A in the spring when soil temperature reaches 60 to 65 F.
Hay and Silage Management: Harvest 2 to 3 times per year at the early head. Do not cut closer than 8 inches.
Grazing Management: start grazing when it reaches 18 to 24 inches and stop at 8 to 10 inches.

Lindy Tucker is the Associate Extension Agent, Agriculture and Natural Resources agent for Lunenburg County and Laura Seigle is the Associate Extension Agent, Agriculture and Natural Resources agent for Amelia County.

To JOIN the Virginia Forage and Grassland Council a membership form can be found on the web at:
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Grazing School from Front Page
food of cattle in summer, and he is now thinking of ways to include this tree as a fodder crop.

Installing the silvopasture also has had unanticipated benefits for management. Because Holsinger uses semi-permanent fencing with polywire to protect the trees, it's his rotational grazing management by creating mini-paddocks which has reduced his time in the field. Even his young children can handle the animal movements now. He also sees anecdotal evidence of a better microclimate for his forages. Holsinger feels confident about what he has learned with his first 19 acre planting and he is putting in an additional 20 acres this year. He'll use what he's learned to tweak the layout and management of the new silvopastures, including using herbicide for site prep. He sees little downside risk, thinking it's much cheaper to plant trees that can appreciate in value and improve the aesthetics of the operation than to build a barn that will do the opposite.

In the process of learning, Holsinger has become an advocate of rotational grazing and silvopastures. He has been a willing speaker to ag students at Virginia Tech and his site will be used for field days and agent trainings. The silvopastures also provide entry to conversation with customers, neighbors, other farmers. The customers get it, he says, and are happy to see a more integrated, “two-story” agriculture that offers improved animal welfare and habitat.

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## A Current Update on Baleage Technology

By: Gonzalo Ferreira

Last March, Dr. Wayne Coblentz, a forage scientist from the USDA-Dairy Forage Research Center (Marshville, WI), updated us about baleage technology during our last Area Dairy Conference. Following are some of the main take-home massages from Dr. Coblentz:

- Well-made baled silage will often exhibit better forage quality characteristics than corresponding hays.
- Hay usually loses more leaves and requires more wilting time, which increases cell respiration and exposure risk to rain damage.
- Baleage has little or no spontaneous heating and less storage loses related to weathering (outdoor storage).
- The goal of baleage is to obtain a good anaerobic fermentation with a quick decrease of pH to ensure conservation of nutrients.
- The quality of the fermentation is related to the type of forage, as there are differences on sugar concentrations (corn and sorghum > small grain crops > legumes) and buffer capacities (legumes > small grain crops > corn and sorghum).
- Promote conditions that promote growth of desired bacteria (lactic acid producing bacteria, LAB) and reduce the promote conditions the growth of undesired bacteria (Chlostridium sp.).
- The best fermentation occurs when the forage has high concentrations of moisture. However, ensiling too wet forages (>70% moisture) can lead to chlorothal idial fermentations, which target for a moisture concentration range between 45 and 55%.
- Too wet baleage will result in very heavy bales, which can be less safe to handle or can overload equipment (e.g., loaders).
- Increasing the bulk density also enhances the anaerobic fermentation. For this, reduce the ground speed and decrease the windrow thickness*, which will increase the revolutions per bale.
- Consider the operative capacity of your baling equipment when moving your pastures. Exceeding the baling capacity will increase wilting time (due to waiting), therefore increasing losses and limiting fermentation.
- The fermentation for chopped haylage is typically better than for non-chopped baleage (there is greater exposure of sugars in chopped haylage, which enhances the fermentation). Because of this, using inoculants is even more important for baleage as it is already for chopped haylage.

An adequate wrapping is critical to obtain good quality haylage. Wrap as quickly as possible (within 2 hours since baling) and use at least 4 layers of 25-micron film. In southern states (higher temperatures) or for long-term storage increase wrapping to 6-layers.

Gonzalo Ferreira, PhD, PAS is a Dairy Management Extension Specialist in the Department of Dairy Science at Virginia Tech.

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## Weed Control for Horse Pastures

By: Bridgett McIntosh

Weeds in horse pastures are usually the result of poor pasture management and overgrazing. Pastures should be grazed when grasses are at least 6 inches tall, and rested when grasses are grazed down to 3 inches. If over 50% of the leaf area is removed by grazing, the plant’s ability to capture and store energy is reduced and root mass is diminished, ultimately killing off the grass. Overgrazed and bare areas provide the opportunity for weeds to move in. Weeds reduce the nutritional value of pastures and some common pasture weeds, such as buttercup, are toxic to horses. Properly managed pastures will have fewer weeds and provide optimal nutrition for horses.

### Weed Prevention

- Maintain appropriate stocking rate of at least 2 acres per horse
- Do not graze pastures below 3 inches
- Do not graze newly planted pastures until grass is at least 6 inches
- Soil test every three years to maintain soil fertility and pH
- Apply lime and fertilizer according to soil tests
- Clip or mow pastures regularly to keep grasses productive
- Pastures with dense stands of grass will choke out weeds

### Weed Control with Herbicides

- Herbicides can be used on grass pastures to control broadleaf weeds
- Type of herbicide and timing of application depend on type of weeds
- Follow label instructions and recommendations
- Apply herbicides after at least three days of air temperatures above 60°F
- Do not apply herbicides on windy days
- Do not apply herbicides if there is a chance of rain within 24 hours

Herbicides are only effective after weeds have emerged, but before they flower (ie., once you see the yellow buttercup flower it’s too late). Removal of horses from pasture is not required for most broadleaf weed herbicides, but always check labels. If toxic weeds are present, horses should be removed from pastures 7 days following herbicide application (because toxic weeds can become more palatable following herbicide use).

For more information please contact Dr. Bridgett McIntosh at bmcintosh@vt.edu or 540.687.3521.

Bridgett McIntosh is the Equine Specialist at the Middleburg Agricultural Research and Extension Office.
By Jim Tate

Now for the good news from the conference.

There is a new bovine genetic test for tolerance to fescue toxicity. As I have previously stated elsewhere I am going to test all of the females in my small herd...the cost of testing is supposed to be in the area of $30.00 per animal. I have contacted the two places from which I obtain semen to breed my cattle. One is a closed herd and they are testing for the other is a commercial bull stud and they are not yet testing. They are waiting for reliability and repeatability numbers to confirm the strategy. One must remember that the entire cattle market is not in the fescue belt. So for a big part of the country this is not an issue. For me, I will most likely adopt a strategy of using the best quality bull I can find that tests well for fescue tolerance. There is some thought that the cow may have a greater role than the bull in progeny adaptation, but this is unproven as yet. So to hedge my bets I am going to begin to use bulls that test well for fescue tolerance.

The logic is that there is little value in testing and improving my females if I then breed them to a bull that has less genetic tolerance. The calves would then be more affected by the fescue than the cows. I have just learned today that I can send a straw of semen to the testing lab and they can test and tell me the status of the bulls I have in the semen tank. I am going to look at my inventory this afternoon.

Secondly there is now a test to determine how badly your fescue pastures are infected. Matt Booher and John Benner have been doing testing at 14 sites in the Valley of Virginia and have had startling results. The sampling done by these extension agents is being tested at a commercial lab. I think they were operating under a grant to do the testing. I have no idea of the relative cost of the testing. But the process is a bit complicated. The data they have generated has been tremendous at revealing in terms of the magnitude, extent and timing of when fescue toxicosis is at its worst. Long story made short is that you can now determine if you have a problem and how bad it is. It will probably take some assistance from your extension agent.

And last but not least...I am modifying my position on pasture renovation to eliminate infected fescue. One factor has been seed cost. Until lately there has only been Max Q Endophyte Friendly. The seed cost was north of $5.00 per lb. Now there are six named cultivars of Endophyte friendly fescue and competition should bring price down. Also given all the costs of renovation seed cost alone is less of a factor.

In the past I have discussed this with quite a few producers. Now I think that I may have given some of them bad advice. My biggest fear is that the pasture would end up repopulated by infected fescue over time. Since I am unable to look at a fescue plant and tell if it is infected fescue or novel endophyte fescue, I could not tell when and if reinfection took place.

The evidence I heard from the researchers at the conference is that reinfection would be more likely to occur thru management issues than from natural occurrence. Infection requires the introduction of infected seed to the soil. There are four basic ways this will occur.

1. Planting infected seed. I can think of no valid reason other than fescue hay or at the very least feed second cutting hay that should have limited seed heads.

2. Dirty equipment. For example bush hogging an infected field and then bush hogging a novel field without washing off the bush hog. You are reseeding with the infected plant seed. Or similarly carrying seed from field to field with a mower or baler.

3. Feeding infected hay on a clean field. This will not only introduce the infected seed but the livestock will work it into the soil and fertilize it for you. Alternatives would be to not feed hay on a novel endophyte field, or feed only uninfected hay, or feed something other than fescue hay or at the very least feed second cutting hay that should have limited seed heads.

4. Cows moving seed from field to field. The experts said that digestive processes would reduce the number of viable seed going thru the animal. But some seed would go thru. A simple management strategy would be to have somewhere uninfected for cows to go for three or four days before going to the novel endophyte field and the danger of then having livestock broadcasting infected seed would be greatly reduced. This is another case where having a few days of grazing on small grain or multi species cover crops could serve as a buffer to seed transmission.

I foresee an opportunity for progressive stockmen to take advantage of a couple of new innovations and reduce the vulnerability of infected test of the pasture.

I have already mentioned the benefits of using multi species cover crops in a grazing operation. Our Graziers who used them actually were among the most vigorous supporters of our project. They all saw immediate benefits.

The standard recommendation for renovating an infected field is to spray – Smother – Spray and re-plant. That is to say the infected fescue in late May or early June with herbicide to kill it. Then plant a smother crop such as millet or sudangrass or sorghum or MSCP...graze or hay this crop...then in the fall spray herbicide again and plant the novel endophyte. For those that wish to resist the use of herbicides, your best course is to stick with mitigation as Fescue and Bermuda grass once established are not going to be terminated through...
Soil Health Page 10

Jim Tate talking about grazing infrastructure at the Spring Forage Day at Swallow Hill Farm.

Overall this event was a great highlight to this demonstration farm project which will continue to be highlighted on the VFGC website under the demonstrations page. VFGC appreciates the terrific support from the forage industry sponsors at this event and acknowledges this program was partially funded by a USDA-NRCRS Conservation Innovation Grant.

J. B. Daniel is the State Grassland Agronomist with Virginia USDA-NRCS and serves as an educational advisor to the VFGC.

Old Idea Page 3

The first advice is to do any conversion over time…not all at once. Pick the field that needs improving the most and start there. Maybe 10 percent and no more than 25 percent of the available acreage.

My thought would be to use the spray – smother – spray with an extended smother phase. What I mean by that is to run two or three sequential cover crops in the smother phase. This would offer several benefits. We have already discussed how the annual cover crops can augment productivity in a grazing program. They can reduce the exposure to the toxins as they are not host to the endophyte. They can serve to smother the fescue. But I think it is asking a lot of a single cover crop to smother out fescue in a single iteration. Also by using sequential cover crops you are not as locked in to a particular season to start the transition. You could spray in the fall and then plant a cool season cover crop (preferably a Multi Species Cover). Using MSCC that includes deep rooted species and some legumes, you get the opportunity to build the soil health during the transition period. Graze or hay that crop as needed. Then come spring there is an opportunity to spot spray for Fescue that is still there. Then Plant a Summer Cover (preferably a MSCC) and again graze or hay as needed. Then in the fall you have yet again another opportunity to check for and if needed treat any lingering infected fescue and then plant your new crop.

To start in the summer go Summer MSCC. Then Fall Cool Season MSCC. Then Summer MSCC. Then fall plant Novel Endophyte.

Using this system you could start a new block every year with no loss of productivity. By integrating annual diverse cover crops you can actually increase forage production while making the transition to a higher quality novel endophyte with all the benefits of fescue with none of the drawbacks of fescue toxicity.

I hope at least some of this makes a little sense. I have tried to compress a full days worth of presentations by industry leaders and researchers and teachers and temper it with my own interpretations. I confess to being a bit excited over some of these new revelations. I am hopeful that this genetic testing for tolerance will be a quantum leap forward. I see a natural role for a project I have invested the last few years into to aid in improving total forage management. A test for levels of endophyte infection is a major step forward.

To those who might not have planted the Novel endophyte fescues after talking with me… I offer my apologies, as I may have been wrong.

We owe it to the livestock under our care to provide the best environment we can. The animals health and well being contribute toward a more positive bottom line and it is incumbent upon stockmen to provide the healthiest environment possible to the livestock in our care.

Jim Tate, Conservationist with the Hannover-Caroline Soil and Water Conservation District. Editor’s note, the following is an excerpt from Jim’s blog. Look for additional excerpts in future issues of the Forager.

Spring is upon us; however, if it weren’t for the calendar, it would be hard to tell. This growing season is certainly bringing about many Challenges as we begin to look forward to a successful year. The Challenges before us are certainly multi-faceted.

To start, we have seen calf prices continue to drop from a year ago. The Challenges this brings is trying to maintain profit margins as we are beginning to realize the escalation of input costs such as fuel, fertilizer, and seed to simply mention a few.

Secondly, the Challenges of weather have certainly slowed the growth of forages used for both harvested feed and grazing. The lack of rain in the spring, and the extended colder than normal temperatures compounding with multiple late frosts, have certainly slowed forage regeneration. These issues have begun to limit yields at a time when forage growth is normally very strong. This has forced many to continue feeding way beyond our normal late winter and early spring periods.

Thirdly, and certainly not the last is maintaining nutritional needs for livestock. This time of year not only puts forth Challenges of our management, but also the livestock we keep. It is important that we recognize what we are asking livestock to do. We want them to give birth, feed their offspring, rebreed back for the next production cycle and continue to grow. Without proper management and nutrition these Challenges are hard to overcome for both producers and their livestock.

Just as with this new agricultural production cycle, The Virginia Forage and Grassland Council continues to move forward with the Challenges of our mission to provide meaningful educational programming to our membership. VFGC is meeting these Challenges head on. We have already begun with several outstanding events this spring. We are also working on other educational events for both summer and early fall. You can continue to learn about these opportunities via this and future newsletters, our Web Page and Facebook Page. VFGC will continue forward meeting our Challenges and not rest on our past successes.

As producers of forages and livestock you are all aware that Challenges are what make your job and efforts not only difficult, but also at many times fulfilling when specific Challenges are conquered. Continue to charge forward for success in 2016 as will VFGC.

Until next time,
Jon Repai President, VFGC

Kelly Mercier and Gabriel Pent receive Dr. Harlan E. White Memorial Scholarships

Kelly Mercier and Gabriel Pent receive Dr. Harlan E. White Memorial Scholarships

By: Gordon Groover
It is an honor for Virginia Forage and Grassland Council to reward two graduate students in the Department of Crop and Soil Environmental Sciences (CSES) for their involvement and dedication to the forage industry. Both Ms. Mercier and Mr. Pent are pursuing PhD’s with a focus on forage-livestock systems.

Ms. Mercier grew up on a dairy farm in Wisconsin and graduated from University of Wisconsin-Stevens Point with a focus on forestry and soil and land management. She had extensive experience with conservation, soils, and livestock while in college and summer jobs. All of these formal and informal experience lead to her interest in “grasslands and grad school, so I could further my education and be able to pursue a job in a field that would allow me to work with farmers who are using sustainable agricultural systems.” Her current research work involves silvopasture systems at the Farm and ACRE. She says, “silvopastures called to me because they incorporate all of my favorite things, trees, soils, plants, and animals into one sustainable system that can be more productive than either a forest or a pasture alone.” After graduation from VA Tech, Ms. Mercier plans to work for Extension and conducting applied research to support knowledge of forage-livestock systems by farmers and their advisors.

Mr. Pent, a native of central Florida but with strong ties to the Shenandoah Valley of Virginia where he spent summers with relatives on the family’s home place in the Valley. In the sandhills of central Florida where he grew up was his first laboratory, where he conducted experiments on preferences for different shrub species by the goat herd. His interests in ecology lead to an undergraduate degree in Biology from the University of Central Florida.

Dr. Chris Teutsch discussing perennial forage options at the Spring Forage Day at Swallow Hill Farm.

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Jim Tate, Conservationist with the Hannover-Caroline Soil and Water Conservation District. Editor’s note, the following is an excerpt from Jim’s blog. Look for additional excerpts in future issues of the Forager.
By: J. B. Daniel

The VFGC 2016 Grazing School held on May 2-3, 2016, was a tremendous success. This 2-day intensive learning experience was hosted at the Shenandoah Valley Agricultural Research and Extension center in Steele’s Tavern, VA. Thirty-five farmers attended this session from different regions of VA as well as participants from NC, WV, and even one from New York City.

All participants were welcomed to fields of green grass and beautiful scenery with the backdrop of the Blue Ridge Mountains. The course included classroom style presentations on soils, fertility, stocking rates, forage supply, forage quality and grazing economics. These were balanced with outdoor small group sessions learning plant identification, pasture condition scoring, estimating standing biomass and a pasture walk with David Fiske comparing different stock densities and varying levels of grazing management demonstrated in some of the ongoing research at the farm.

Everyone also had the opportunity to see and discuss

VFGC Spring Forage and Soil Health Field Day

By: J. B. Daniel

The field day hosted by Tim and Susan Tobin at Swallow Hill Farm was a terrific success. A total of 141 participants attended this regional field day learning how Tim is using different forages and intensive grazing management to build soil health while meeting his forage production and quality goals. The participants heard from the host farmer and what his background was, how he got started in the livestock business and how he has networked with local Extension, SWCD and NRCS agencies to improve his farm operation. He explained the vision for the future of his farm and how his involvement with VFGC and its partners are helping him learn as he goes by participating in the Conservation Innovation Grant (CIG) demonstration project.

For more information on this conference and to view the program, please visit www.afgc.org.