

Grazing Through Summer with Annual Forage Mixtures at Beck-N-Rich Farm

By: J. B. Daniel

The first of 4 regional summer forage field days was well received by 75 attendees on Wednesday, July 9th in the Shenandoah Valley. Richard and Becky Clemmer owners of Beck-N-Rich Farm and partners with Greene Farm LLC, hosted the tour in Raphine, VA. The content focused on using summer annual forages in practical ways to accomplish multiple goals.

Cattle vigorously graze a mixture of pearl millet and forage brassica.



Richard began cultivating this idea last summer while attending the Shenandoah Valley AREC Research Field Tour at Steele’s Tavern. At that event he viewed small plots of forage annuals and listened to the different ways they could be used, even in grazing situations. At that time Richard had a field of millet and soybean that he was about ready to harvest for baleage. After attending the field day and talking with Matt Booher, Extension Agent in Augusta, a “light bulb” went off and Richard decided to graze the mixture. That led to establishing winter annual forage mixtures and now rotating into the summer season again with multiple combinations of warm season annual forages.



Richard Clemmer explains how he got started grazing annuals.

This particular evening the event began with a cookout, then participants were able to look at field size plots of warm season annuals that can be used to supplement a grazing system. These included pearl millet and forage brassica; a 6-way mix of sorghum Sudan, buckwheat, soybean, cowpea, pearl millet, and brassica; two different crabgrass cultivars drilled into a grazed down cool-season sod, ‘Mastergraze’ BMR corn; and Striate lespedeza drilled into fescue sod to boost summer production. Matt Booher explained each of these large plot and supplemented participants with handouts that summarized the dry matter yield and quality of these summer grazing options for each mixture.

While folks were wading through these nutritious forages to get a closer look, Richard Clemmer explained why he was trying these annuals and using this as an opportunity to renovate his degraded perennial sod in the process. J J.B. Daniel, NRCS Conservation Agronomist, highlighted the use of grazing management and how intentionally using select species planted in mixtures can build soil health while meeting the summer grazing needs of your livestock operation. The most diverse annual mix mentioned above dubbed the “Jim Tate Summer Mix” included plants from multiple functional groups including grassesmost diverse annual mix mentioned above dubbed the “Jim Tate Summer Mix” included plants from multiple functional groups including grasses, legumes and forbs to energize the soil with

diversity while also being the highest yielding mixture at the time of this event.

This 6-way summer mixture has high yield and quality (4.3 tons per acre; 21% CP; 79% TDN)



As more farmers are trying to finish livestock on forages, these annuals are just one tool that can be strategically used to provide a more constant supply of high quality forage during periods of the year when our perennial cool-season grass and legume base are not vigorously growing. Many of us have read about using a grazing corn variety to really put the weight on calves the last 45 days to finish. Tracey Neff and Josh Baker were present from King’s Agriseeds, Inc. to show how their ‘Mastergraze’ BMR grazing corn is a high producing, high energy forage option. They emphasized it tillers best when planted at about 40, 000 seed per acre with a corn planter on 15” rows. They also recommend timing to graze it between waist height and tasseling. As with any of the annual forages discussed at this field meeting, it is recommended that the first time you try them, only plant a few acres to learn how they perform and how to graze them effectively.

Tracy Neff explains how plant population affects tillering of his MasterGraze BMR corn.



In addition to hearing the information, participants seemed to enjoy the demonstration plots. The physical demonstration provided the opportunity to pull plants, look at roots and confirm nodulation of the legumes while conversing about these mixes that many folks have never used on their farm. The questions and comments flowed continuously throughout the evening as the event culminated with 4 different flavors of homemade ice cream and fresh baked cookies provided by the Clemmers.

The Virginia Forage and Grassland Council is the prominent, producer run non-profit organization comprised of forage and livestock producers throughout the state. The VFGC is led by a Board of people dedicated to promote and expand the use of forages in support of the livestock industry in the Commonwealth. VFGC acknowledges that events like this and the many other field day and educational opportunities it hosts are not possible without dedicated cooperators like Richard and Becky Clemmer along with partners like VA Tech, Virginia Cooperative Extension, USDA-NRCS, the Chesapeake Bay Foundation and many generous industry sponsors. If you would like to become a member, partner or sponsor of this thriving organization then follow this link to the website <http://vaforages.org/membership-form/> and get involved today!

Provided by J.B. Daniel, USDA-NRCS Conservation Agronomist and also serves on the VFGC Board.

Grazing school provides opportunity for class and interactive learning

By: John Fike

VFGC held a summer edition of its beginning grazing school at Sam Terry’s farm in Carroll County on July 29 and 30. VFGC board member Terry Slusher manages the farm, which proved a wonderful venue for school. The farm, just a few miles off of the Blue Ridge Parkway, was lush and green; at 2900 feet elevation, it also proved cool and pleasant. The school’s twenty-eight “student” participants were a diverse group, with both novices and long-term forage livestock managers. Although the group largely hailed from southwest Virginia, one participant (with some Virginia roots) came from as far from Arizona. Participants heard speakers discuss multiple topics including: soils, forage options and management, animal nutrition, farm layout, and grazing economics. Course speakers included Danny Boyer (NRCS, ret.) J.B. Daniel (NRCS), John Fike (Crop and Soil Environ. Sci., Va Tech), Gordon Groover (Ag and Applied Econ., Va Tech) Mark McCann (Animal and Poultry Sci., Va Tech), Steve Pottorff (VCE ANR, Carroll County), and Kevin Spurlin (VCE ANR Russell County).

Highlights of the grazing school included forage allocation and farm planning exercises, and Mr. Slusher’s demonstration of portable and permanent fencing systems to manage his farm. Mr. Slusher noted that portable fencing is a valuable tool for good grazing management, but he also commented that moving wires and posts everyday “isn’t as romantic as it sounds” and that these are useful as part of a bigger fencing tool kit. The benefits of improved fencing and watering systems also were demonstrated at Mr. Steve Turner’s farm. During the discussion, Mr. Turner described his early reluctance to fence (and thus “lose”) the land surrounding the wetlands on his farm. However, the consequent improvements in grassland management that these changes afforded have also allowed his land to heal. This has resulted in greater productivity on fewer acres – and he has not missed the headache of losing accident-prone cows and calves in streams and swampy areas. Another highlight was an after-dinner chat by Mike Goldwasser (former board member and long time grazier). Mr. Goldwasser described his approach to running a successful stocker operation and he provided inspiration regarding the great economic opportunities attendant to good grassland management.

Along with these many learning opportunities, the grazing school provides many chances for participants to meet and network with other graziers. We encourage VFGC members to take advantage of this great learning opportunity when grazing schools are held in the future.

John Fike is an Associate Professor in the CSES at Virginia Tech and also serves on the VFGC Board.



Students watch and listen as Mr. Terry Slusher demonstrates the finer points of using reels and polywire.



Students group up in preparation for a forage allocation exercise.



Mr. Steve Turner (far right) describes the improvements in productivity on his farm that occurred after he fenced out wetlands, added waterers, and developed fencing systems.

Grazing school participants consider site resources as part of developing plans for infrastructure and farm management.

By: Peter Callan,

In the first six months of 2014, the prices for feeder and fat cattle and milk have reached record levels. These high prices in conjunction with declining grain prices will likely result in many producers generating significant tax liabilities for 2014. The management and reinvestment of profits generated during times of high prices can impact the long term viability of the business. Based on analysis of the farm’s financial situation, consider paying down short and long term debt as a possible place to spend profits. After addressing the farm’s debt load, plan on accumulating cash reserve equivalent to a minimum of three months’ operating expenses. The next question is where should the profits be spent (e.g., Machinery, retirement accounts, etc.).

Over the years, many producers have invested in new trucks and equipment to generate depreciation on their tax returns as a means to reduce tax liabilities. Before investing in new equipment, however, producers should calculate how this equipment will realistically increase the profitability of their business. What is the anticipated payback for the new equipment and will this purchase reduce costs or improve efficiency that will improve the farm’s bottom line?

In some areas of the Midwest, older farmers are contracting to have their crops planted by custom operators who own planters equipped with the latest GIS technology, which provides the platform for variable fertilizer and seed monitors, etc., as a way to benefit from the latest advances in technology without owning the equipment

Historically, farmers have reinvested in their businesses with little thought of diversifying their investments into nonfarm assets. An Individual Retirement Account (IRA) is a savings plan that provides the taxpayer (farmer) with tax advantages for setting aside money for retirement and diversifies investments. There are two types of IRAs for retirement saving. Traditional IRAs are funded with before tax contributions and the Roth IRAs are funded with after-tax contributions. A taxpayer can open and make a contribution to a traditional IRA and/or a Roth IRA if the taxpayer (or if filing a joint return, their spouse) receives taxable compensation (e.g. earned income – wages, salaries, commissions, self-employment income – net earnings from schedule F or C) during the year. A taxpayer whose age is more than age 70 ½ years by December 31, 2014 cannot make a contribution to a traditional IRA. On the other hand, there are no age constraints for contributions to a Roth IRA. Contributions to traditional and Roth IRAs can be made at any time during the year and up to the due date for filing a tax return for that year, not including extensions. For tax year 2014, contributions must be made by April 15, 2015.

The amount contributed to an IRA is based on the amount of taxable income received by the taxpayer during the year. In 2014, the maximum contribution for a traditional IRA and Roth IRA is the lesser of \$5,500 or 100 percent earned income (\$6,500 age 50 or older). For example, a farmer with \$4,000 in earned income (net schedule F after depreciation) would be limited to a maximum contribution of \$4,000 to an IRA. The maximum contribution to a spousal traditional or Roth IRA (for a spouse with little or no earned income in 2014) is the lesser of \$5,500 or 100 percent of combined earned income (\$6,500 age 50 or older). A taxpayer may contribute 100 percent of earned income to a traditional IRA, a Roth IRA, or split between both types of IRAs up to the annual contribution limit.

The benefit of a traditional IRA is that the contributions are

tax-deductible in the year that the taxpayer makes the contribution. For example, the taxable income for a couple is \$95,000 in 2014 and each spouse contributes \$5,500 in a traditional IRA. They will be able to deduct the contributions from their income taxes. Thus they will pay tax on \$84,000 in income to the IRS. Assuming that the couple is in the 25 percent marginal tax bracket (Federal) and their IRA contributions are \$11,000, they will save \$2,750 in Federal income taxes in 2014. The earnings generated by a traditional IRA are tax-deferred. The tax deductible contributions and earnings are taxable as ordinary income when they are withdrawn from the account after age 59 ½. The IRS will assess a 10 percent early withdrawal penalty for distributions made before the farmer reaches age 59 ½ from the IRA.

Another strategy to reduce taxable income is for the sole proprietor farm owner to pay children who work on the farm wages at rates equivalent to those paid to other employees performing the same tasks.

Internal Revenue Service (IRS) states “Payments for the services of your child under age 18 who works for you in your trade or business (including a farm) are not subject to social security and Medicare taxes.” This ruling applies only to farms operated as sole proprietorships.

The tax law is different for business entities. IRS Publication 225 states:

“Payments for the services of your child or spouse are subject to federal income tax withholding as well as social security, Medicare, and FUTA (Federal Unemployment) taxes if he or she works for any of the following entities.

- A corporation, even if it is controlled by you.
- A partnership, even if you are a partner. This does not apply to wages paid to your child if each partner is a parent of the child.
- An estate or trust, even if it is the estate of a deceased parent.

In these situations, the child or spouse is considered to work for the corporation, partnership, or estate, not you.”

By paying children wages at rates that are comparable to rates paid to non family members for similar tasks and responsibilities, the farm owner can shift income to their children who will be in lower tax brackets. Thus, over several years the children will be able to accumulate “significant” nest eggs that can be used to pay for college expenses.

Taxes Page 9



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Upcoming Events

2015 AFGC Annual Conference
January 11-13, 2015
Hilton Frontenac in St. Louis, Missouri

2015 Winter Forage Conferences
January 20, Weyers Cave Community Center, Weyers Cave
January 21, Wytheville Meeting Center, Wytheville
January 22, Dominion Agricultural Complex, Chatham
January 23, Gordonsville Volunteer Fire Company Hall, Gordonsville
www.vaforages.org

North Carolina Forage & Grassland Conferences
January 27, Kenansville, NC
January 28, Statesville, NC
January 29, Canton, NC
www.nccattle.com

Virginia Biological Farming Conference
January 30-31
Richmond, VA
vabf.org/conference



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Soil Quality Indicators: Organic Matter

What is soil organic matter?
Soil organic matter is that fraction of the soil composed of anything that once lived. It includes plant and animal remains in various stages of decomposition, cells and tissues of soil organisms, and substances from plant roots and soil microbes. Well-decomposed organic matter forms humus, a dark brown, porous, spongy material that has a pleasant, earthy smell. In most soils, the organic matter accounts for less than about 5% of the volume.



- What does organic matter do?
- Organic matter is an essential component of soils because it:
- Provides a carbon and energy source for soil microbes
 - Stabilizes and holds soil particles together, thus reducing the hazard of erosion
 - Aids the growth of crops by improving the soil’s ability to store and transmit air and water
 - Stores and supplies such nutrients as nitrogen, phosphorus, and sulfur, which are needed for the growth of plants and soil organisms
 - Retains nutrients by providing cation-exchange and anion-exchange capacities
 - Maintains soil in an uncompacted condition with lower bulk density
 - Makes soil more friable, less sticky, and easier to work
 - Retains carbon from the atmosphere and other sources
 - Reduces the negative environmental effects of pesticides heavy metals, and many other pollutants.

Soil organic matter also improves tilth in the surface horizons, reduces crusting, increases the rate of water infiltration, reduces runoff, and facilitates penetration of plant roots.

Where does it come from?
Plants produce organic compounds by using the energy of sunlight to combine carbon dioxide from the atmosphere with water from the soil. Soil organic matter is created by the cycling of these organic compounds in plants, animals, and microorganisms into the soil.

What happens to soil organic matter?
Soil organic matter can be lost through erosion. This process selectively detaches and transports particles on the soil surface that have the highest content of organic matter.

Soil organic matter is also utilized by soil microorganisms as energy and nutrients to support their own life processes. Some of the material is incorporated into the microbes, but most is released as carbon dioxide and water. Some nitrogen is released

in gaseous form, but some is retained, along with most of the phosphorus and sulfur.

When soils are tilled, organic matter is decomposed faster because of changes in water, aeration, and temperature conditions. The amount of organic matter lost after clearing a wooded area or tilling native grassland varies according to the kind of soil, but most organic matter is lost within the first 10 years.

Rates of decomposition are very low at temperature below 38 °F (4 °C) but rise steadily with increasing temperature to at least 102 °F (40 °C) and with water content until air becomes limiting. Losses are higher with aerobic decomposition (with oxygen) than with anaerobic decomposition (in excessively wet soils). Available nitrogen also promotes organic matter decomposition.



- What controls the amount?
- The amount of soil organic matter is controlled by a balance between additions of plant and animal materials and losses by decomposition. Both additions and losses are very strongly controlled by management activities.
- The amount of water available for plant growth is the primary factor controlling the production of plant materials. Other major controls are air temperature and soil fertility. Salinity and chemical toxicities can also limit the production of plant biomass. Other controls are the intensity of sunlight, the content of carbon dioxide in the atmosphere, and relative humidity.
- The proportion of the total plant biomass that reaches the soil as a source of organic matter depends largely on the amounts consumed by mammals and insects, destroyed by fire, or produced and harvested for human use.

Practices decreasing soil organic matter include those that:

1. Decrease the production of plant materials by:
 - Replacing perennial vegetation with short-season vegetation
 - Replacing mixed vegetation with monoculture crops
 - Introducing more aggressive but less productive species
 - Using cultivars with high harvest indices
 - Increasing the use of bare fallow
2. Decrease the supply of organic materials by:
 - Burning forest, range, or crop residue
 - Grazing
 - Removing plant products
3. Increase decomposition by:
 - Tillage
 - Drainage
 - Fertilization (especially with excess nitrogen)

Finally, retirement plans for farm employees provide another means to reduce a farm’s taxable income. Based on my previous work experience, few farms provide retirement programs for their employees. Today, there is intense competition to hire and retain key employees who are in management positions on farms. Providing retirement plans for employees is a tax deductible fringe benefit to help retain employees. It is a way for the farm owner to pay for longevity and share the profits in a business. There are a number of different types of retirement programs that can be implemented by a farm owner. It is recommended that farm owners talk with an investment advisor on setting up a retirement plan that best meets their needs.

The strategic investment of profits generated from recent record cattle and milk prices will lay the foundation for the long term viability of cattle and dairy producers. By working together with their lenders, accountants, and, investment advisors, producers can develop a plan to prioritize the investment of profits into the farm’s infrastructure that will maximize returns to their land, labor and capital in the cyclical beef and dairy industries, as well as preserve and grow hard earned profits for their retirement years.

Peter Callan, Extension Agent, Farm Business Management, Northern District

Organic Matter from Page 4

- Practices increasing soil organic matter include those that:
1. Increase the production of plant materials by
 - Irrigation
 - Fertilization to increase plant biomass production
 - Use of cover crops
 - Improved vegetative stands
 - Introduction of plants that produce more biomass
 - Reforestation
 - Restoration of grasslands
 2. Increase supply of organic materials by
 - Protecting from fire
 - Using forage by grazing rather than by harvesting
 - Controlling insects and rodents
 - Applying animal manure or other carbon-rich wastes
 - Applying plant materials from other areas
 3. Decrease decomposition by
 - Reducing or eliminating tillage
 - Keeping the soil saturated with water (although this may cause problems)
 - Keeping the soil cool with vegetative cover

Prepared by the National Soil Survey Center in cooperation with the Soil Quality Institute, NRCS, USDA, and the National Soil Tilth Laboratory, Agricultural Research Service, USDA). Animal waste photo courtesy University of Nebraska-Lincoln, Institute of Agriculture and Natural Resources

Johnny Rogers of Rogers Cattle Company, Roxboro, NC will discuss his experience in managing soil, forages, and animals on the farm he manages with his wife Sharon. His presentation is titled: *A Systems Approach to Building Soil Health and Producing a Profitable Livestock Product.*

The VFGC and VCE will feature local livestock producers involved in the Regional Conservation Innovation Grant in cooperation with VFGC, VCE and NRCS. Conference participants will hear and see narrated discussion of cooperators experiences with the project under the title, *Using grazing strategies to improve soil health on my farm.*

The daylong conference will be repeated at four locations:
Tuesday, January 20, 2015, Weyers Cave Community Center, Weyers Cave
Wednesday, January 21, 2015, Wytheville Meeting Center, Wytheville
Thursday, January 22, 2015, Dominion Agricultural Complex, Chatham
Friday, January 23, 2015, Gordonsville Volunteer Fire Company Hall, Gordonsville

The conferences will run from 8:30 am to 4:00 pm.
For more information or to register for the conference, contact Margaret Kenny (makenny@vt.edu) at (434) 292-5331. The \$35 early registration fee must be postmarked by Jan. 3, 2015. After the New Year, the registration fee is \$50 per person. This Soil Health Conference is funded in part by a USDA Conservation Innovation Grant from the NRCS in VA.

Please visit the VFGC web site (<http://vaforages.org>) for additional details and registration information.

8:30 am	Registration
9:00 – 10:00	Beef: The REAL Health Food, Dr. Peter Ballerstedt
10:00 – 10:30	Break- Visit Sponsors
10:30 – 11:30	Policy Does Not Equal Science: Development of the U.S. Dietary Guidelines, Adele Hite, RD, MPH
11:30 – 11:45	VFGC Grazing Demonstration Overview – Regional CIG producer or mentor
11:45 – 12:00	VFGC Business Meeting – Patty Johnson VFGC President
12:00- 1:00 pm	Lunch- Visit Sponsors and Network
1:00 – 1:30	Virginia Cattlemen’s Association – Update from Jason Carter, Executive Director of the Virginia Cattlemen’s Association and presentation by Anne Jones, Director of Industry Communications, Virginia Beef Industry Council
1:30 – 2:30	A Systems Approach to Building Soil Health and Producing a Profitable Livestock Product, Johnny Rogers, Rogers Cattle Company
2:30 – 3:30	Red Meat is Green, Dr. Peter Ballerstedt
3:30 – 4:00	Speaker Panel Discussion
4:00 pm	Adjourn

Safety: Farmers "heart smart"

By: Jenna Hurtly

It’s a well-known fact that spring and fall are the busiest times of the year for farmers. Many work long days, starting before sunup and finishing after sundown. These long hours can be hard on your health. Consequently, it is highly important to pay attention to what your body is telling you.

It could mean the difference between a quick five-minute water break and a trip to the hospital or worse.

It is important to watch for these problems: cardiac arrest, heart attack, stroke, diabetic emergencies and heat stress.

Cardiac arrest. Cardiac arrest is when the heart stops due to an electrical malfunction. Heart attacks are not the only cause of cardiac arrest. Almost any heart condition increases someone’s chances, regardless of age. Someone experiencing cardiac arrest will be nonresponsive and won’t take a normal breath when the head is tilted up. Should you come across someone experiencing this type of emergency, call 911 immediately, then start CPR. Time is key here. It only takes minutes for the brain to suffer damage or death from loss of oxygen.

Heart attack. A heart attack happens when blood flow to the heart is either cut off or severely reduced, depriving the heart of oxygen. Symptoms may include extreme fatigue, palpitations, labored breathing, chest or jaw pain, dizziness, cold sweat, nausea or light-headedness. Call 911 immediately should you or someone you know shows signs of a heart attack.

Stroke. A stroke is when a blood vessel is either blocked by a clot or rupture, depriving the brain of much needed oxygen and nutrients. This clot or rupture occurs within the arteries in the brain or leading to it. For identifying a stroke simply think FAST, which stands for face drooping, arm weakness, speech difficulty and time to call 911.

Diabetic emergencies. Because of the long strenuous work hours, diabetics need to be even more mindful of their insulin/glucose balance. If you are or someone you work with is a diabetic, watch for changes in behavior as this could be a sign of a diabetic reaction. Should this occur, you may need to dial 911 or seek medical help.

Heat stress illnesses. Heat stress is a general term for different heat-related afflictions. Not all are life threatening, but some can be without proper treatment. The more concerning ones include heat cramps, heat syncope, heat exhaustion and heat stroke. Heat cramps, heat syncope and heat exhaustion aren’t medical emergencies. However, they should be treated immediately to prevent the condition from worsening. With each of these, have the person rest in a cool, shaded area and drink water, clear juice or a sports drink.

Heat cramps are muscle pains or spasms in the abdomen, arms or legs due to low body salt and water levels. If the person has heart problems, is on a low-sodium diet or the cramps last for more than an hour, medical attention may be required.

Symptoms of heat syncope include light-headedness, dizziness or fainting caused by dehydration or lack of acclimatization. The person may notice this after standing for a while or when they get up too quickly from a sitting or lying position.

Heat exhaustion is caused by severe dehydration. Symptoms include heavy sweating; extreme fatigue; dizziness; nausea; clammy, moist skin; pale or flushed complexion; muscle cramps; slightly elevated body temperature; and fast, shallow breathing. If possible, have them take a cool shower, bath or sponge bath in addition to resting and rehydrating.

Heat stroke is a life-threatening, medical emergency. When this occurs, the body is no longer able to cool itself. Within minutes the body temperature may shoot up. Symptoms include hot, dry skin or profuse sweating, hallucinations, chills, throbbing headache, high body temperature, confusion or dizziness and slurred speech. Call 911 immediately then attempt to cool the person by moving them to a cool, shaded area and wetting them and their clothes with water and fanning them.

Prevention

When working outside for long periods of time, especially in a hot environment, take precautions.

Stay hydrated and don’t skip meals. Drink water or other beverages such as juice or a sports drink frequently enough that you never feel thirsty. Do not drink excessively caffeinated beverages, such as energy drinks, as these will cause further dehydration.

Food is also highly important. If you don’t have time for a full meal, then bring several healthy snacks with you and eat frequent, small meals.

Try to schedule the hardest work in the morning or evening when it’s cooler.

Be attentive to what your own body is telling you as well as the conditions of others.

If you’re working with someone who has a medical condition, be mindful of it.

If you have a medical condition, make sure at least one person you’re working with is aware of it.

Be prepared

The reality is things happen sometimes, no matter how careful you are. Make sure everyone working has access to a phone and knows what address to give emergency personnel. If you’re working alone, tell someone where you are, and have him check up on you. Many farms are in rural areas where it may take medical personnel some time to arrive. Take a CPR class or watch the American Heart Association’s hands-only CPR video. Get an automated external defibrillator if you or someone you work with is at risk for cardiac arrest. They will walk you through each step should you ever need to use it. In an emergency, these precautions could mean the difference between life and death for someone you love.

See the American Heart Association and the Centers for Disease Control and Prevention for more information.

Progressive Forage Grower, written by intern Jenna Hurtly



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Forage Benefits Page from 2

Estimates of fertilizer N credit vary depending on the forage species, the quality of the stand (Figure 2), and the amount of regrowth. For example, the University of Wisconsin recommends an additional first-year N credit of 40 lb/ac when 8” or more regrowth is incorporated. In addition, first-year corn grown after alfalfa may have 10-15% higher yield potential due to factors other than N supply (“rotation effect” in Figure 1), including improved soil tilth and fewer pest problems. Because of lower insect pressure, additional savings can be had in seed or insecticide with corn rotated after a perennial forage.

Figure 1. Yield response to fertilizer N for continuous corn and corn following alfalfa (first and second year). Note maximum return to N arrows at the bottom of figure and rotation effect at upper right. Mallarino & Pecinovsky, 2006.

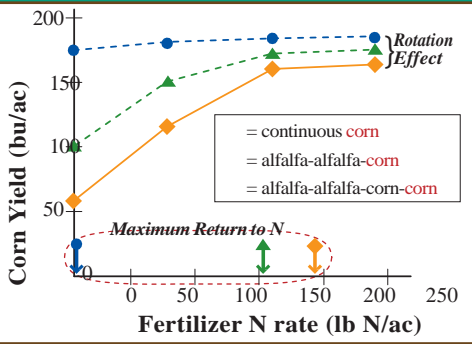


Figure 2. Value of fertilizer N credits when alfalfa is grown the previous year.

Stand Density	N Credits (lb/ac)	Value* of N Credits \$/ac
Good	130	\$104
Fair	100	\$80
Poor	70	\$56

*With nitrogen at \$0.80/lb.

silage, but not as much as with a perennial crop.

Decreasing soil erosion helps protect surface water from sediment, one of the most frequently cited impairments of water quality. In addition, most phosphorus (P) lost in surface runoff from row crop systems is associated with eroded sediment. Both sediment and P impair habitat for high-value fish species, and excessive P can increase algae growth, leading to water quality degradation and fish kills. Producers should be aware, however, that significant soil erosion and associated P loss can occur during establishment of perennial forages, and that dissolved P can be present in runoff from freeze-damaged forage. Quick tips: reduce erosion during establishment by including a companion small grain or forage grass. Reduce runoff of dissolved P by removing regrowth in late fall.

Bill Jokela USDA-ARS-Marshfield and Michael Russelle, USDA-ARS-St. Paul.

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In my native Midwestern row-crop country, there were exactly two on-farm jobs - "farmer" and "farmer's wife". It wasn't American Gothic by any means, more like Baxter Black's essay She Does the Books. Both jobs were equally important and equally essential to the economic viability of the farm. The terms reflected a division of labor, not the value of that labor.

Marketing was fairly simple, too. Crops were raised. Crops were sold.

Nowadays truck-patches are farms, and everyone is a farmer. There are 4Her's, who used to call themselves exhibitors, who are now known farmers. (I'm not sure where that leaves FFA). Farmer's wife somehow has become a derisive term, at least in some minds.

And if you're not a farmer, at least you should be in possession of one as in "my farmer" or "your farmer." It's become a term more related to marketing than to agriculture. It's value as a marketing term sometimes overshadows the fact that farming is a vocation.

We're entering dangerous territory. It's in no longer clear what constitutes a farm, and what constitutes a farmer. Generally speaking, American consumers like farms and farmers, but they don't like agriculture. They like us, but they don't like what we do. To rectify that dissonance, they often view us as mere

victims of multinational corporations, controlling our lives and our land. That is, unless we're corporate farmers, those among us who somehow abuse animals for profit and get paid not to raise any crops.

More and more, consumers are relying on media personalities when forming opinions about farms, or farming, or food. Lifestyle bloggers, celebrity doctors and political operatives are the loudest and most persistent voices they hear.

Notably absent are farmers.

As producers, the last thing most of us are interested in getting involved in this. Most of us feel that it is nobody's business what we do on our own farms, anymore than we have the right to just go visit any random suburban home. We certainly have a right to privacy.

But the bio-security measures we may use to protect our animals sometimes make it seem as if we have something to hide. And when we hear someone misrepresenting our craft we have a tendency to get angry. Or we consider the source, and deem it unworthy of our attention.

But in reality, as the misconceptions about farming increase, the opinions and insights of farmers become more valuable. The voices that shape consumer opinion are, by extension, influencing policy in Richmond and in Washington, and perhaps even more alarmingly shaping opinion in the classrooms. We can no longer just do our jobs and mind our own business.

On the most basic level, we need to recognize the difference between a lie and a misconception. It's a subtle but important difference. If your think someone has a the wrong idea about how their food is produced, think about where they got that idea. You might just be the right person to correct it. Be polite. Be respectful. Know your stuff. You have pride in your craft, show it.

Gone are the days when we just raised the food. Now we need to help our customers make informed decisions about their food. We need to be able to tell them how it was raised. That it's safe and healthful. That we care for our animals. And the land that they're raised on.

And if we don't someone else will.

Best Regards,
Patty Jonson
President, VFGC

Perennial Forages Benefit Soils, Other Crops, & Water Quality

By Bill Jokela,

Alfalfa is the most widely grown perennial forage species in the U.S., with the greatest acreage in the upper Midwest and West. But alfalfa acreage has been declining steadily for the past 50 years, while the acreage of soybeans and, more recently, corn has been increasing.

There are costs associated with the displacement of perennial forage acreage. Entering a period with heightened public scrutiny of agriculture’s environmental ‘footprint’ (water and air quality, greenhouse gas production, and energy use), farmers need to consider the total value of adding perennial forages to their crop rotations. This article covers: a) the direct benefits of perennial forages used in rotation or as a cover crop; and b) the more far-reaching benefits of perennial forages in terms of improved soil and water quality.

One of the reasons for the increase in corn acreage, and decrease in alfalfa acreage, is that the amount of corn

silage fed to U.S. dairy herds has increased significantly in the past 20 years for a variety of reasons, according to Randy Shaver, University of Wisconsin dairy scientist. These include: higher yield and energy per acre from corn silage, improvement of corn silage hybrids, problems with winterkill of alfalfa, high rumen degradability of alfalfa protein, and better opportunities for manure management.

There are, however, a number of economic and environmental benefits from the production of alfalfa and other perennial forages that are sometimes overlooked when comparing them to corn silage. One of the most important economic reasons to incorporate perennial forages into a rotation is the nitrogen (N) credit for the crop following the forage. Nitrogen released from decomposing alfalfa tissue and from newly accumulated soil organic matter can supply most or all of the N requirement of a following corn crop (Figure 1).

Forage Benefits Page 3

Learning Something New

By: Carl C. Stafford

I observed a farmer who in his 9th decade was learning something new. It was clear from his performance and since I know about his usual methods, that this was a new experience for him. What he was learning is less important than the fact that he was curious enough to try. To me this behavior is evidence of a successful personality, something needed to make it in farming and other businesses.

His example is one I am reminded of often as there are regular inquiries from his direction asking about new varieties, new equipment and new methods. Remember, this gentleman was raised during an era when livestock were driven to town on foot, be they a flock of turkeys or a herd of cattle, the critters transported themselves to market under their own power. Today we know a different route, but that was the way when he was a boy.

The modern gooseneck trailer has taken over as the preferred means of transporting livestock, be they a cow, emu or llama. Trailers are the way to go and this farmer was learning how to operate one. Granted he waited long enough to adopt this new technology but his faithful old straight truck was working fine to move livestock across modern roads even at long distance. So seeing this new experience unfolding is observance of positive behavior and a willingness to learn, to try new things and to adopt new methods, at least once the old ones wear out or are replaced by more efficient means.

Sticking to what you know may be a common trait in agriculture, but not among the most progressive. They will try and fail first with new ideas and new methods. And, when they find one that works, the leaders will show the rest of us the way forward. Most of us have few original good ideas but are adept at recognizing good ones when we see them. For the bulk of the population this is how it works. Leaders are like the first born child. We watch them go out and fail and choose not to repeat their mistakes. We learn from these and capitalize upon them for our own successes.

Today’s farmers are a combination of old smarts knowing what to do based upon experience and new smarts learning what to do, trying new things, utilizing technology, making progress but not always in a straight line. To find the individual who has both skill sets is unique. A connection to this is the role reversal with the young helping the old with technology. A child raised around technology is comfortable programming a yield monitor or setting up the electronics of a grain dryer or talking to the tractor computer. Usually the answer to a technical question will come from the youngest.

The Virginia Forage and Grassland Council offers chances to learn and to lead during their educational programs in spring, summer and winter, including university research facts, industry leaders personal experiences and mathematics hard to dispute. Find your new experience and give it a try.

Carl Stafford is a senior agent Virginia Cooperative Extension in Culpeper County and also serves on the VFGC Board.



Toxic tall fescue can be managed to reduce animal health problems, but it is not easy. Alternative forages are available to replace toxic tall fescue, but pasture renovation is very expensive and often unsuccessful. Some recent research studies point to some new ways to deal with tall fescue. It has long been known that some legumes contain chemicals called condensed tannins. Probably the most familiar legumes here in Virginia are birdsfoot trefoil, sericea lespedeza and crown vetch. When consumed by animals, condensed tannins in legumes can bind to proteins like the alkaloids that make tall fescue toxic. In fact, recent evidence suggests that condensed tannins may help detoxify alkaloid toxins, make forage more palatable and help reduce heat stress in cattle. In addition to possible fescue detoxification, tannin-containing legumes also are well known to help prevent bloat and reduce parasite loads in animals. Condensed tannins may even help boost animal immune responses.

So if tannin- containing legumes have all these great benefits, why don’t we see them everywhere? Well, there are several reasons. For one thing, legumes like birdsfoot trefoil and serciea are not easy to manage. Establishing these legumes in pasture is difficult, and managing them once established can be tricky. It is also good to remember that while condensed tannins can be beneficial in modest concentrations, if levels get too high, they can be toxic to animals as well. Complicating matters even more is that fact that condensed tannins are quite variable in their chemical structure. The specific forms, or polymers, of condensed tannins that produce beneficial effects in animals is still not well understood. Nevertheless, if these legumes can help offset the negative effects of the alkaloids in tall fescue, livestock producers could have a ‘natural’ and cost effective avenue for coping with fescue toxicosis. More work needs to be done though, and my research group is beginning work at the Shenandoah Valley AREC at Steeles Tavern to explore questions about tannin containing legumes in pasture situations. In the next few years, we hope to shed some light on these interesting legumes and the potential for dealing with fescue toxicity.

Ben Tracy is an Associate Professor with CSES at Virginia Tech and also serves on the VFGC Board.

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Red Meat, Forages, and Human Health is the Focus for the 2015 Winter Forage Conferences

By: Gordon Groover

Red Meat, Forages and Human Health is the theme for the Virginia Forage and Grassland Council (VFGC) and Virginia Cooperative Extension (VCE) winter forage conferences. This year's conference highlight interrelated nature of agriculture. Speakers will illustrate the role of healthy soils as the foundation for a vibrant forage system, that supports a ruminant livestock herd supplying high quality proteins for human nutrition and health. This year's program provides participants with information and examples of how healthy soils, forages and ruminants improved human health and wellbeing.

This year's keynote speaker is Dr. Peter Ballerstedt, forage product manager at Barenbrug USA. He received his Ph. D. in Forage Management and Utilization from the University of Kentucky. Dr. Peter Ballerstedt has written numerous publications and articles and currently writes a blog focused on diet, health and human nutrition called "Grass Based Health." His areas of expertise include forage production, utilization and forage-based livestock production systems and their role in human nutrition. In his morning presentation he will discuss Beef: The REAL Health Food. After lunch, Dr. Ballerstedt will shed light on the concept of Red Meat is Green, the relationships between soils, and grazing animals.



Dr. Peter Ballerstedt and Adele Hite are the keynote speakers for this Winter's Forage Conferences.

Participants will also hear from Adele Hite, a Registered Dietician, MPH, and currently pursuing a PhD in Nutrition Epidemiology at UNC-Chapel Hill School of Public Health. She will provide insights into the national nutritional policy environment and discuss, Policy Does Not Equal Science: Development of the U.S. Dietary Guidelines.

Winter Conference Page 9

Alternative Legumes May Offer a New Way to Combat Tall Fescue Toxins

By Ben Tracy

Most folks involved with the forage-livestock industry have a love-hate relationship with tall fescue. On one hand, it is one of the most persistent cool-season forage grasses in Virginia. On the other hand, animals regularly get sick if they consume too much of it. About 90% of tall fescue pastures are endophyte-infected in Virginia, and this toxic fescue probably costs the livestock producers millions of lost revenue every year. The toxicity actually comes from endemic fungus, *Neotyphodium noenophialum*, that grows inside the fescue plant. This mutualistic fungus produces chemicals (alkaloids) that negatively affect livestock in many ways, often producing a malady termed fescue toxicosis. Alkaloid chemicals make fescue aversive to animals so they eat less. Reproductive problems and increased heat stress are also common symptoms. Even though

Birdsfoot trefoil is a cool-season legumes that contains moderate amounts of condensed tannins.



alkaloids are problematic for livestock, the same chemicals increase the survival of tall fescue plants by making them highly resistant to drought, grazing pressure, disease and insect pests.

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Reporting the progress of Virginia's forage industry