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#### Front Page Forage Conferences

County Soil Conservation District team in Bismarck, North Dakota. He brings a wealth of practical information from his experience making day-to-day decisions on the family farm and the work with other farmers in his Soil Conservation District. In his morning presentation he will discuss the key principles in managing for healthy soils and the bottom-line reasons why livestock producers should care. After lunch,

#### Locations and Dates:

- Monday, January 27, 2014, Southern Piedmont AREC, Blackstone.
- Tuesday, January 28, 2014, Wytheville Meeting Center, Wytheville.
- Wednesday, January 29, 2014, Weyers Cave Community Center, Weyers Cave.
- Thursday, January 30, Brandy Station Fire Department, Brandy Station.

Mr. Dukart will explain the relationships between soils and the grazing animals that depend daily on the products of healthy soils, in a presentation titled, Grazing With Purpose: It's more than just rotational grazing.

Participants will also hear from Dr. Jennifer Moore-Kucera, Assistant Professor of Soil & Environmental Microbiology at Texas Tech University, she will present practical findings about ongoing research projects that focus on soil microbes and soil health in integrated crop-livestock systems in the Southern High Plains region.

Invited back from West Virginia University is Dr. Ed Rayburn, Dr. Rayburns' presentation, Introduction to Pasture *Ecology*, will explain what lives in our soil and what helps these organisms thrive.

The VFGC and VCE will again feature local livestock producers at each workshop site to discuss "Using grazing strategies to improve soil health on my farm". Each of these producers will provide conference participants with real insight on the challenges and benefits of improving soil health in their grazing system.

The conferences will run from 8:30 am to 4:00 pm.

Please visit the VFGC web site (http://vaforages.org) for additional details and registration information. The \$35 early registration fee must be postmarked by Jan. 3, 2014. 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.



## **Agenda for the Winter Conference**

8:30 am	Registration
9:00 – 10:15 am	Principles of Soil Health: What is it, how does it apply and why should we care? - Joshua Dukart, Bismarck , ND
10:15 – 10:45 am	Break- Visit Sponsors
10:45 – 11:45 am	Introduction to Pasture Ecology, Ed Ray- burn, West Virginia University, Morgan- town, WV
11:45 – 12:00 noon	Soil Health and Grazing Management: Putting Science into Practice – An Inte- grated Educational Program for Virginia's Forage and Livestock Producers – Patty Johnson, President VFGC, Culpepper, VA
12:00 – 1:00 pm	Lunch- Visit Sponsors and Network
1:00 – 1:15 pm	Ecology of Grazing Lands – VT Students
1:15 – 1:30 pm	Virginia Cattlemen's Update - Jason Carter, Executive Director of the Virginia Cattlemen's Association
1:30 – 2:30 pm	Soil Microbes and Soil Health: Assessing Management Impacts on Soil Microbial Communities- Jennifer Moore-Kucera, Texas Tech, University, Lubbock, TX
2:30 – 3:00 pm	Using Grazing Strategies to Improve Soil Health on my Farm - Blackstone - C.J. Isbell, Hanover Co. Wytheville - J.C. Winstead, Craig Co. Weyers CaveC. Winstead, Craig Co. Brandy Station – Roy Boldridge, Culpeper Co.
3:00 - 4:00 pm	Grazing With Purpose: It's more than just Rotational Grazing! - Joshua Dukart, Bis- marck, ND
4:00 pm	Adjourn



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## About the Speakers

Joshua Dukart, Holistic Management Consultant, lives near

Bismarck. North Dakota. Mr. Dukart's primary services revolve around assisting agricultural producers to simultaneously improve their land, stabilize their finances, and achieve their desired quality of life. Mr. Dukart is also a field representative for the North Dakota Grazing Lands Coalition, providing assistance



for farm and ranch planning, land monitoring, and coordinating information & education activities throughout the state. He is also a member of the Burleigh County Soil Conservation District team in Bismarck, North Dakota, working with producers on planned grazing, biologically diverse cropping management, and integration of cover crops. He brings a wealth of practical information from his production agricultural background and working with other farmers and ranchers across the country.

Jennifer Moore-Kucera, Assistant Professor of Soil & Envi-



ronmental Microbiology, Department of Plant and Soil Science, Texas Tech University. Dr Moore-Kucera received her M.S. in Soil Science from Iowa State University, and her Ph.D. in Soil Science from Oregon State University. She teaches courses in soil science and soil and environmental microbiology and conducts research focusing on the role soil of microbial communities in influencing ecosystem functions. Specifically, she researches how management practices in agricultural and natu-

ral ecosystems impact C and N dynamics and potential feedbacks on plant growth, productivity, and air, water and soil quality. Her approach to research is interdisciplinary, combining traditional and novel techniques in soil science, microbial ecology, and biogeochemistry.

Ed Rayburn, Forage Extension Specialist, West Virginia

University. Dr Rayburn holds B.S. and M.S degrees in wildlife biology and a Ph.D. in forage agronomy from Virginia Tech. He works with other specialists, county agents, farmers, and NRCS staff in developing and implementing on-farm research and educational programs to support pasture-based livestock production. He also helps landowners develop economically and environmentally sustainable production systems on their



farms. Dr. Rayburn served as technical editor for the four volume NRAES book series on pasture-based livestock production. He previously worked for the USDA-Soil Conservation Service in western New York as a Grassland Specialist serving dairy and livestock producers in the 15 western counties of New York. He and his wife Sue, their three border collies, and 30 cows manage a pasture-based farm in Preston County, West Virginia.

# **Program Registration**

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## Cannot take registration over the phone

#### Page 8 **Improving Methods for Grassland** Measurement

By: Gordon Jones

I'm fairly confident that everyone on the Ecology of Grazing Land Systems field course learned a lot throughout the two-week trip from South Carolina to Texas. This course provided a chance to understand what challenges and opportunities are shared between different farming systems in different regions.

One of those challenges is for producers to accurately measure the amount of forage in a pasture. Here we refer to the amount of standing forage in a pasture as "pasture mass" often measured as pounds of dry matter per acre. Having a measurement of pasture mass is important to correctly calculate stocking rates and to assess when a paddock should be stocked and destocked.

In our research at Virginia Tech, we measure pasture mass by harvesting a number of samples of forage, drying them, weighing them, and extrapolating their yield to the size of the pasture. While this type of "destructive" yield measurement is useful in a research setting, it is quite impractical for producers.

At three of the stops on the field course, we talked to producers and researchers using "non-destructive" methods to measure pasture mass. In Benton, MO we visited a pasture-based dairy. The farmer used a rising-plate meter in each paddock to determine the compressed height of the forage. The compressed height could be converted through an equation to an estimated pasture mass.

At a University of Missouri research center, we saw a device



A dairy farmer in Benton, MO demonstrates a rising-plate meter in perennial ryegrass pasture.

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using ultrasound to measure pasture height. The ultrasound, mounted on the front of an ATV, would take measurements of forage height across the pasture. This height measurement could also be related to pasture mass. Also, at The Noble Foundation in Oklahoma, we saw a comparison of four methods for nondestructive estimation of pasture mass using similar variations on the theme of light and compressed height.

There is a challenge in that these methods all require calibration. You need an equation that says: x inches of compressed forage height from a plate meter is equal to y pounds of dry matter per acre. Work has been done in the Mid-Atlantic to develop these equations, but the problem is that you need a different equation for each forage species and often for each month of the growing season. This is an important challenge, but it has a clear solution. As producers use these measurement methods, we at the university can develop equations for a range of species, regions, and months of the year.

Estimation of pasture mass can be useful for all pasture managers. In some systems, estimation of pasture mass by eye will suffice, while in others, recording weekly masses with a plate meter from all the paddocks on the farm aids management. Careful management of pasture mass can increase potential stocking rate and improve forage utilization. We will continue to see research focused on estimation of pasture mass. I think many forage scientists see improved pasture management playing a major role in the sustainability of pasture-based farming systems, and the ability to measure and track pasture mass is central to that.

Gordon Jones is a PhD student in the CSES department at Virginia Tech.

## Making the Most of Fescue in the **Shenandoah Vallev**

#### By: Matt Booher

Tall Fescue is a widespread pasture grass of great importance in the Shenandoah Valley. It is productive and persistent on the marginal ground that makes up much of our pastureland and, as a result, it is the nutritional base for many of our livestock. The main downfall of fescue is its potential to cause a disorder known as fescue toxicosis. The majority of fescue in our region is infected with a fungus (referred to as the "endophyte-infected") that produces alkaloids toxic to grazing animals; the resulting toxicosis causes reduced feed intake, reduced reproductive performance, and other symptoms.

One of the first steps in managing fescue toxicosis is to realize the extent of the problem. The Augusta County Extension office tested 25 farms in Rockingham, Augusta, and Rockbridge counties, in order to demonstrate the occurrence of endophyte-infected fescue in the Shenandoah Valley.

The results of the test were simple, and conclusively demonstrated to most of the study participants that endophyte-infected fescue, and the potential for fescue toxicosis, is widespread. Results from forage sampling and testing of 25 farms:

- 65% of pastures sampled were 100% endophyte infected.
- 30% of fescue pastures sampled were 89-90% endophyte infected.
- The lowest infection rate (one pasture) was 50% infected. This farm stored its fescue seed for five years prior to planting, in an attempt to kill the seed-borne endophyte.

Matt Booher is an extension agent in Augusta County Virginia.

# **Upcoming Events**

#### 2013 Beginning Grazing School

Nov 12 and 13 Southern Piedmont AREC www.vaforages.org

#### AFGC Annual Meeting

January 12-14, 2014 Hilton in Memphis, TN. www.afgc.org

#### **2014 VFGC Winter Forage Conferences**

January 27 - Southern Piedmont January 28 - Wytheville January 29 - Weyers Cave January 30 - Reva www.vaforages.org

#### 2014 NCFGC Winter Forage Conferences

January 28 - Keanansville, NC January 29 - Statesville, NC January 30th - Canton, NC www.afgc.org/affiliate/northcarolina.php

#### **2014 VFGC Fencing Schools**

March 19th - Northern VA March 26 - Southern Piedmont April 2 - Southwest VA www.vaforages.org

2014 Virginia Cattlemen's Association Annual Meeting March 27-30 Rockingham County Fairgrounds www.vca.org



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#### Ecology Front Page

Our trip officially began in South Carolina at Clemson University where we learned about Piedmont soils, native grasses, and Drs. John Andrae and Susan Duckett presented unique forage systems for finishing steers. Another stop in South Carolina included Happy Cow Creamery, a forage-based dairy that processes its own milk. We enjoyed a tour of the college farm at Warren Wilson College near Asheville, NC. In Tennessee, we visited the Bush Brothers' feedlot, the University of Tennessee's plant science farm and organic unit in Knoxville, a station in Spring Hill (studying equine environmental impacts), and the 18,400-acre Ames Plantation near Jackson (managed to support quail). In eastern Missouri we visited Tribute Dairy, a grassbased dairy with 900+ cows. Missouri State University's Journagan's Ranch in the Ozarks provided a good view of extensive grazing management, and a stop at University of Missouri's Southwest Center furnished good discussions of fescue toxicosis and pasture measurement. In Kansas, we visited the Konza Prairie in the Flint including Dr. K. C. Olson, a range and beef cattle specialist. Outside Salina, we visited with Wes Jackson - a Mac-Arthur genius award winner and proud grandson of the Shenandoah Valley. Jackson founded The Land Institute which is working to develop sustainable perennial grain systems. Our next stop, Cargill Meat Solutions, in Wichita, discussed the product and food security aspects of meat production. An overnight stop at ARS's Fort Reno Grazinglands Research Laboratory was filled with discussions of grassland environmental impact, resilient forages for difficult environments, and ghosts, among many topics. Our final stop included a stay at the Noble Foundation in Oklahoma where among other things we learned about controlled burning, pecan production, and feral hog control

Articles that follow in this and the subsequent Forager represent some of the ideas learned and impressions made for each of us students during the trip. We also plan to provide a few minutes of discussion during the winter conference meetings in January. We all would like to thank VFGC again for your investment in our education. The trip proved of immense value to each student. We hope the articles that follow will convince you of the benefits realized from your generous contribution.

Gabriel Pent is a graduate student at Virginia Tech.

# An examination of social pressures on modern food production by a group of wandering college students

#### By: John Fike

On July 19<sup>th</sup>, a group of graduate students and professors set out on a journey across the Southeastern U.S. Our goal as we traveled across seven states and made multiple stops, was to gain a better understanding of the direction grazing agriculture is taking as we head into the future. Thanks to funding from the Virginia Forage and Grasslands Council, we were able to do just that. The common theme throughout the trip was that sustainability is fast becoming a central facet to our agricultural system. The term "sustainability" does not just imply "environmentally friendly" as many people believe. Instead, there are three keys to being sustainable. These are economic, social, and environmental viability. Without all three of these elements working together in agriculture, the longevity of the industry is jeopardized.

The first step to changing any system is learning about it. Two of our stops focused on sustainable agriculture research. In the hills of Asheville, NC, Warren Wilson College offers students a chance to work on a 250-acre crop and livestock farm. The college farm raises cattle, poultry, hogs, and crops in an integrated system that centers around responsible land management. Pasture utilization is extensive; cattle are rotated through the paddocks followed by chickens. The crops grown around campus are used to feed the livestock, the forest is managed to provide a steady supply of timber for campus buildings, and recycled kitchen scraps go back into the campus garden. Although most farmers are not looking to create a sustainable model as complex as this, many of the pasture management and weed control practices that were used at Warren Wilson are applicable in conventional systems. Overall, the school provides a great example of a working, sustainable, agricultural system that is integrated into an academic institution.

The other location we visited that was also researching in the organic field was the University of Tennessee Organic Unit. This facility focused on discovering new means to control pests and diseases in organic crops. As chemical means of controlling the nuisances are restricted, their research centered on integrating crops to ward off pests and break the disease cycle. Many of the pest control studies were still early in development and it will likely take some time to create acceptable, organic pest control methods. However, one trial investigating weed control methods seemed promising. Cereal rye was planted in the winter, and then rolled flat at maturity in the spring. Rolling killed the rye crop and provided a thick mulch layer that corn was then planted into. This practice greatly reduced the number of weeds which germinated in the crop without the use of chemical herbicides.

All along the trip we saw ways in which land managers and researchers are working to develop agricultural practices that are more environmentally sustainable and socially acceptable but still maintain economic viability. In the past, profitability was the only measure of successful farming. Whether producers like it or not, the world has entered the 21<sup>st</sup> century and the measures of success have changed. Demand for transparency creates new challenges for agriculture but also opens up new opportunities for the enterprising manager. The last twenty years have seen the creation of markets for sustainable food products and that demand isn't slowing down. Such opportunities should prompt farmers to reevaluate the way they operate, and to adopt those practices that preserve the environment as well as the profit margin.

John Fike is a associate professor in the CSES department at Virginia Tech and also in a educational advisor to the VFGC.

#### Debating the Value of Grass-Fed, Part 1

#### By: Gabriel Pent

On a recent Ecology of Grazing Land Systems tour through seven Southeastern states, forage and animal science students frequently debated the value of grass-fed beef. While some students mocked the grass-fed movement, claiming that all



Hereford cows at Journagan Ranch doing What they're supposed to do"

beef is grass-fed at some point, other students advocated for the value of a strictly grass-fed system, whether from an ecological, economical, or regulative standpoint. The debate led to a discussion of labeling and the importance of defining the difference between grass-fed and grass-finished. The USDA maintains that a grass-fed label may only be used on an animal product where the animal was raised solely on forage throughout its life, whether through access to pasture or through hay and other non-grain supplements (USDA, 2007). The variety of management practices and philosophies experienced on the trip ranged from feedlot management to complete reliance on forage in grass-fed systems. In a follow up article, two management tools for growing and finishing cattle on grass will be presented, including seasonal protein supplementation and unique forage species used for finishing.

Getting rid of 100,000 lbs of bean waste every day is the number one priority at the Bush Brothers' feedlot in Newport, TN. The Bush Brothers' cannery nearby provides an enormous supply of bean hulls and rejected beans. The company opened the feedlot as a way to dispose of the waste coming out of the cannery, regardless of whether the feedlot turned a profit or merely broke even. The facility includes one thousand acres of steep pasture which provide supplemental feed resources. Fencing was described as the sole tool for forage management. Around eight hundred steers are finished predominately on the 20-25% protein bean waste. Management issues for the feedlot include: how to efficiently utilize the bean waste; how to deal with nutrient runoff; and how to prevent disease through vaccinations and targeted stockyard purchases.

In stark contrast to this "grass-supplemented" operation, 550 miles away, at Missouri State University's Journagan Ranch in Douglas County, MO, forage provides the basis for 1200 animals in a cow-calf operation. Feed is provided to the cattle only as a management tool: when they need to be rotated to a different pasture or when they need to be arranged in a convenient formation for spraying flies. The amount of grain

#### Page 4

received, though not in compliance with strict USDA **Page 9** grass-fed standards, is slight compared to the amount of forage utilized. Management centers around the pasture where the cattle are bred and raised entirely on grass. Weeds are managed by controlled burns (every three years), consistent rotary mowing, and as-needed spraying. Soils on the ranch can be marginal, and tall fescue "holds the soil together," while annual lespedezas are what "makes the cows fat." Ranch operators are interested in "making cows do what they're supposed to do," referring to the grass-fed nature of the operation. With plentiful forages and little access to alternative feedstuffs, Journagan Ranch has found their optimum balance to be heavily in favor of forages.

The wide range of management approaches experienced on our trip is exemplified by the differences between the Bush Brothers' feedlot and the Journagan Ranch. What are the management practices necessary for a successful grass-fed operation? Recent research that investigates these details is explored in Part 2 of this article.

#### References:

United States Department of Agriculture. (2007). USDA establishes grass (forage) fed marketing claim standard [Press release]. Retrieved from http://www.ams.usda.gov/

Gabriel Pent is a graduate student at Virginia Tech.



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#### **Debating the Value of Grass-Fed, Part 2**

#### By: Gabriel Pent

Can a forage base provide the sole nutrition necessary to produce a high-quality finished steer? During this past summer's Ecology of Grazing Land Systems trip, we met two animal scientists at different universities who presented their research on grass-fed and forage-finished beef.



Dr. Olson's cows adjusting diet to individual needs on diverse grasses and forbs in the Flint Hills of Kansas

Three hundred miles from Journagan Ranch, described previously in Part 1, the class came to the Konza Prairie, in the Flint Hills of Kansas. The soil of the prairie is shallow and rocky with a flint layer directly below the soil surface. Most of this land is suitable only for pasture and has never been plowed. Dr. K. C. Olson, a professor at Kansas State University, manages a cow herd where increases in terminal weight are sacrificed for a more moderate, prairie-suited biological type. Dr. Olson is a proponent of an intensively managed supplement program for forage-based systems where the cattle must turn a profit. Forage diversity is desired for a reason: Olson has found that a cow, as those at Journagan Ranch might claim, knows on her own how to adjust her diet to reach a proper nutrient intake utilizing a wide variety of grasses and forbs. Toward the end of the growing season, the groundcover transitions from grasses to forbs which may make up to 40% of the cows' diet. During the growing season, this diversity provides both an ecological benefit and a dietary benefit. However, during the dormant season forage quality is limiting, so Dr. Olson provides supplemental protein to complement the range, which is high in fiber and low in protein and total digestible nutrients. About half of the weekly protein requirement is fed once every three days, reducing labor expenses. Through delivery of the crude protein supplement directly to the cows on pasture, Dr. Olson optimizes weight gains and forage utilization, as the supplement feeds rumen microbes which in turn increase fiber digestibility. The benefits of supplementing crude protein sources such as soybean hulls, have been clearly documented through his and others' research (Olson et al., 1999; Klevesahl et al., 2003). This approach is well-suited to the Flint Hills, but has application to other areas.

Earlier in the trip at Clemson University, Dr. John Andrae presented research on forage species used to finish steers in the summer (Schmidt et al. 2013). By finishing steers on forage species such as alfalfa, chicory, pearl millet, or cowpea, Dr. Andrae has maintained excellent weight gains. His wife and collaborator, Dr.

Susan Duckett, has found improved fatty acid profiles (higher omega-3/omega-6 ratio), increased vitamin content, and equivalent marbling of grass-finished steers when compared to conventional grain-finished beef. By applying either Dr. Olson's supplement approach or Dr. Andrae's finishing species approach, producers can appeal to the high-value, grassfed market while maintaining a high-quality animal product with competitive output.

Some students during the trip argued that the USDA should reconsider its rigid definition of grass-fed beef. This included one Argentinean student who thinks the "no grain" stipulation is short-sighted: small amounts of grain routinely are fed in Argentina to complement available pasture and to supplement pasture when growth is limited. Often consumers who purchase USDA grass-fed-labeled products value ecologically sustainable practices and increased health benefits, all of which may be realized from forage-based systems with or without supplementation. Feeding grain may improve carcass quality and weight gain, often benefitting a producer's bottom line. Dr. Olson's supplement approach fails to meet the grassfed criteria and the benefits of greater forage utilization that he has demonstrated cannot be realized in a USDA certified grass-fed system. Through application of Dr. Olson's management techniques, opportunities for farmers could be greatly furthered if the USDA reconsidered its strict, no-grain policy, but producers – at least in the humid east – have a place to start now with Dr. Andrae's forage finishing research. As demonstrated by Dr. Andrae and Dr. Duckett, their finishing species recommendations produce a high-quality, highlycompetitive product as compared to grain-finished beef. While each production style - Dr. Olson's Flint Hills operation or Dr. Andrae's Clemson demonstration - is tailored to its specific ecology, market, and operator objectives, through current research, forage-based beef production is becoming widely-adaptable to a variety of situations.

#### **References**

- Klevesahl, E. A., et al. (2003). Effects of a wide range in the ratio of supplemental rumen degradable protein to starch on utilization of low-quality, grass hay by beef steers. Animal Feed Science and Technology 105(1-4): 5-20.
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Gabriel Pent is a graduate student at Virginia Tech.

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

# **Corn Belt Beef Cattle**

#### By: Carl C. Stafford

A prediction has been made that beef cattle will be shifting out of the Corn Belt to cheaper production areas. Economist Harlan Hughes, North Dakota State University predicts this based upon an examination of the economic facts over the last fifty years. A number of trends are depicted in his article in the online magazine Beef at the link provided or simply search for his name and the subject.

#### http://beefmagazine.com/blog/beef-cow-production-will-continueshift-out-corn-belt

Hughes concludes from these trends that Corn Belt beef cattle will leave the region due to their higher cost of production compared to competing regions of the country. This is similar to dairy cattle moving out of a traditional production area in one western state and into others offering opportunity. Be they hog producers, chicken or cattle producers, farmers can and will move to places better suited, many times based entirely upon economics.

Most Virginians reading this article are dug in and not about to load up the herd and move to the next state, but in time, economics can cause a shift away from areas of higher cost. This should be a gradual move and some will never will. Dr. Hughes came to Virginia a few winters back to speak at the Virginia Forage and Grassland Council regional meetings, this year 1/27/14 - 1/30/14. He followed his finance based pattern to describe beef cattle production and remarked on the advantages in Virginia.

Coming from the Dakotas he saw us as a comparative oasis of green even in January. Knowing our growing season was longer

and our winters milder in comparison, he thought that Virginia was well positioned to economically produce cattle. Maybe we will become home to some predicted to be on the move. While we can have higher land costs, our winter feeding advantage is our most



important asset when attempting to attract and retain grazing livestock.

On average, you can predict a day of grazing will be about 50% less costly than a day of delivering stored feed. With cattle harvesting forage from the land accumulated during the growing season and used during the winter grazing season, Virginia can offer a substantial cost advantage to those willing to manage this resource. Investments in the stored feed part of the business can be an obstacle to change and are not likely to go away until they wear out or there is ownership change. Your comfort level can be a deciding factor as well.

Be sure, when snow falls we all get nervous about what will happen, but those who depend on grazing may have more sleepless nights not knowing how severe the winter event will become. If anything can upset a winter grazing plan, it would be mud as we can plow the snow if equipped. All livestock producers have experience with winter events and we all have our own comfort level to deal with.

Carl Stafford is an extension agent in Culpepper Virginia and serves on the VFGC board.

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# President's Message



It's fall, and that means it's State Fair time. Agricultural fairs are just about as old as civilization itself, and though they've certainly changed, they're still where families meet to socialize, learn about new technologies, and to show off their craft. And many of the historical records of these fairs, rodeos and livestock exhibitions are not only widely available; they're a pretty good guide of how our perceptions of "ideal" have changed over the years. The photos tell us a story of what we looked like - and what our animals looked like - in a particular month of every year. They not only tell us about style trends, they tell us about our food trends, and even a little about feed costs.

No one would ever suggest that this year's livestock style trend, "Fluffy Cows", reflects the rest of the livestock industry, but it's fairly easy to track how we went from the waist-high Herefords of the 1950's, the monster steers of the 80's to the moderate framed animals we currently see in the show ring.

Follow hogs through the adoption of Crisco over lard, driven by Loretta Lynn, and consumer demand. Look at steers before and after McDonald's decision to abandon tallow in favor of "hearthealthy" oils for their fries.

There was a time span of quite a few years where biggest to smallest seemed to be the standard in the show ring. Beef judges would always claim "it's what the packers want", and it was hard to argue. In the economic and cultural environment of the 80's and 90's, biggest to smallest made sense

for the feedlots and packing houses.

The current trend? Soundness. Even the steer that's theoretically ready for the hook, soundness seemed to be the term that came up in class after class, show after show. It's hard to say how much of the emphasis on soundness seen in the show ring had to do with consumer demands, but it's safe to say that no one in the animal protein business wants anything to do with any animal that has mobility issues.

Other surprising phrases to hear from judges are "too big" and "feed efficient". All of a sudden smaller animals can compete where they haven't been able to compete before - and that's not just in the show ring.

Even though most consumers don't go to state or even county fairs, they're armed with more information than ever, some of it some of it good, some of it biased, and some of it flat wrong. If you're a cow/calf producer, it's not always easy to see that you're meeting customer demands but you are. The feed-lots and packers are stuck balancing feed costs with consumer demands for a high quality product, and at no time in history has so much attention been paid to how our animals are handled. That includes the show ring, the farm, and the feedlot.

Where does that put us? We've always been about green pastures and healthy livestock. That's what we do best. The Midwest drought, increased commodity prices and changing consumer demands have hit many in the industry pretty hard. But when it comes to providing the product that the customer wants, we do it as well as anyone in the nation. And probably better.

And while it's always easy to laugh at ourselves as we look back on those old pictures, I hope that someday we can look back at the pictures from 2013, and think that it was that "ideal" looked pretty smart.

Best Regards, Patty Jonson

## **Feed Costs and Profitability**

Yesterday, I received the October 1 issue of Progressive Forager, one of the news items was from the USDA National Agricultural Statistics Service, Farm Expenditures Report. The report states that in 2012 US Farmers spent a record high dollar amount on agricultural production cost; NASS reported the increase over 2011 was 10.4 percent, for a total expenditure of 351.8 billion dollars.

The largest portion of spending is in the crop production sector, but the livestock production numbers may be enlightening to those who feed livestock. According to the NASS report livestock producers spent a total of 152 billion dollars on all production expenses, which was up 2.4 percent from 2011. The largest portion of these production costs in the livestock sector was for feed. Livestock producers spent more than a third of their total production cost, 54.4 billion dollars, on feed, making it the most expensive item in all of agriculture. Regional totals for all production expenses were;

Midwest-	\$112 Billion
Plains-	\$88.8 Billion
West-	\$69.9 Billion
Atlantic-	\$42.6 Billion
South-	\$38.6 Billion

NASS reported that on average, US livestock farms spent \$27,338 on feed, \$18,457 on farm services, \$14,802 on livestock, poultry and related expenses, and \$12,247 on labor. This is interesting information for livestock producers looking for ways to increase or maintain profits in the face of rising cost. While these are average numbers, they support what many in the industry have said repeatedly, look for ways to cut feed cost, without sacrificing quality, and you have opportunity to increase profit.

Submitted by Dennis Jones-VFGC Secretary

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#### **Dawn Dairy Make Grazing Sound Easy**

#### By: J.B. Daniel

The grazing dairy tour held at Dawn Dairy in Bedford County on August 29<sup>th</sup> was definitely one of the best summer grazing events I've attended this year. The event began as the cows returned to the paddock from the afternoon milking. For an August field day the humidity was low, a light breeze was blowing and with the Peaks of Otter standing in the background the stage was set for a wonderful evening. Regardless of the good weather and the beautiful setting, this event was a huge success mainly because of the host family and specifically Mr. Tommy Watson.

Mr. Watson started by explaining how in the late 1980's he began experimenting with grazing some of their cows. Based on the results he saw in the milk tank he expanded his grazing acreage the next year. By



1992 Dawn Dairy was no longer planting corn silage and had taken the steps to fully transition to a grazing dairy. During this transition period and in the years to follow, there was a lot of trial and error. Due largely to daily recordkeeping and review of those records, the Watson's were able to learn from their success and mistakes to refine their management and make wise decisions leading them into the future.

Mr. Watson explained that he intensively manages 80 acres of pasture supplying a large portion of the dry matter needs of his 140 cow lactating herd throughout the year. These 80 acres have a perennial base of alfalfa or white clover depending on the paddock and he double crops annuals into these paddocks in the spring and fall to maximize quality forage production for nearly 11 months a year. His spring seeding is most often BRM sorghums, sorghum x sudan or sudex mixes and his fall planting will vary depending on the paddock and consist of some combination of oats, rye, ryegrass, crimson clover and brassicas. Mr. Watson targets having at least 3 forage species present in each paddock at all times. This 80 acre grazing platform is supplemented by haylage and purchased supplements as needed by his lactating herd.

Mr. Watson emphasized that grazing system layout is critical to the ease of management of cows in the system and the efficient utilization of forage. As the cows grazed across the pasture



from the participants, Tommy explained how his simple system of lanes, permanent fence, temporary fence and a portable water trough are the components that make it work.

Page 11 The differences in managing his grazing dairy operation versus conventional management are tremendous. One of the largest financial benefits is not having the capital expense in machinery to plant, harvest, transport and store a corn silage crop. With a smile on his face Mr. Watson proudly shared, "The most used piece of equipment on the farm today is an ATV 4 wheeler for setting up and moving portable fencing, and it's a lot less expensive." Instead of being dependent on the varying success of a corn silage crop each year, he now capitalizes on diversity using different forage species, staggered plantings, and grazing management to greatly reduce feed costs and production risks associated with drought. Timely establishment of annual forages is accomplished by no-till planting seed into the grazed down sod using the SWCD drill. This is usually accomplished without the use of burndown herbicides, so most paddocks may go four years or longer without herbicide applications.

Over the last 20 years, Mr. Watson revealed, the herd size has more than doubled in large part to improved cow health and longevity. The combined benefits of not being confined to concrete and being managed in a grazing system have increased the average age of his lactating herd to over 7 years. By dragging manure piles after grazing a paddock the parasite egg loads tested in the field is almost non-existent, therefore he only has to deworm his cows once a year after they freshen and enter the lactating herd.

Even with the expansion of cow numbers over the years the

liquid manure storage has not increased, however they have added a bedded pack facility managed with a sawdust base. The bedded pack functions as a loafing area and manure storage while keeping the cows off the pas-



ture during periods when the soil is too wet to permit grazing without causing compaction. Both liquid manure storage and the "composted" dry manure from the pack facility are spread on the general pasture and land where haylage is harvested. The Watson's operate within the requirements of a nutrient management plan and since not growing corn silage they have grown accustomed to using very little commercial fertilizer. Mr. Waston does spread 25-35 lbs per acre nitrogen (urea) to manage the growth potential of his annual forage crops for grazing. Intense grazing management, the efficient utilization of available manures, and supplemental nitrogen have saved a tremendous amount of money over the years.

During the event Mr. Watson highlighted how he worked with Extension, NRCS and the SWCD over the years to develop different components of his grazing system. Likewise this grazing tour was a partnership between the VFGC, Peaks of Otter SWCD, Virginia Cooperative Extension and NRCS. Tommy was very generous to share so much information with the participants of the field day the VFGC greatly appreciates his time and effort to make this event such a success.

J.B. Daniel is an forage agronomist specialist with NRCS and also serves on the VFGC Board.



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# **VFGC Receives NRCS Grant to Promote Grazing Management and Soil Health**

The Virginia Forage and Grassland Council (VFGC) recently received a Conservation Innovation Grant from the USDA Natural Resource Conservation in Virginia. The primary focus of this project will be to demonstrate and document the changes that occur in soil health and pasture productivity due to the implementation of improved grazing management and communicate these changes to producers and agricultural professionals through a series of educational events. Four EQIP eligible farms, one located in each physiographic region of Virginia, that are transitioning from continuous to rotational stocking will be identified. A group of local and regional agricultural and conservation professionals and experienced graziers will work with these producers to identify management practices that would improve soil health and farm productivity.

Over the next three years data on the soils and pastures will be collected on participating farms. At the end of the three period, results will be presented at a summer forage tour held on each of the four farms. As part of this grant the VFGC will also develop a Soil Health webpage and is kicking off the project with this winter's forage conference series. More information on this project and this winter's forage conferences is available at www.vaforages.org.

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# Volume 35 Number 1

# Soil Health: The Foundation of Profitable Ruminant Livestock Production

ences

The Role of Healthy Soil in Profitable Ruminant Livestock This year's keynote speaker is Josh-Production is the Focus for the 2014 Winter Forage Conferua Dukart of Dukart Farms near Hazen, Soil Health: The Foundation of Profitable Ruminant Livestock Production is the theme for the Virginia Forage and North Dakota. This Grassland Council (VFGC) and Virginia Cooperative Extension family farm's prima-(VCE) winter forage conferences. We take for granted the ry enterprises are cow ground under our feet and call it dirt. We should realize that qual--calf, equine, stocker, and forage crops. ity of life is dependent on the health and quality of our soils. This ranch focuses on Farmers understand the management principles necessary to produce healthy forages, ruminants, and profits, yet many are unaregenerative land management through enhancement of soil health. Mr. Dukart is also a field representative for the North ware of what additional benefits are gained from managing to improve the health of their soils. This year's program will pro-Dakota Grazing Lands Coalition, and member of the Burleigh vide training in soil health and participants will gain greater knowledge of the soil's potential, the foundation of all agricul-Conference page 6

# Thanks from the 2013 Ecology of Grazing Land Systems Class

By: Gabriel Pent

with a unique and valuable opportunity. Virginia Forage and This past summer, a group of graduate students representing five Grassland Council was among the contributors to the five studifferent universities - Virginia Tech, University of Missouri, Unidents from Virginia Tech that participated in the Ecology of versity of Tennessee, Texas Tech University, and Clemson Universi-Grazing Land Systems course. As a group, we are all thankful for ty - made a trip through several Southern states, studying firsthand the generosity of VFGC and we hope the articles that follow will the multitude of grazing land ecosystems. The purpose of the trip is serve to describe some of our experiences and to illustrate the to provide students the opportunity to learn: the diversity of various value of your investment. ecoregions and the functions grazing lands fulfill in these areas; how research is performed in the regions studied and the demands of studying the interplay between animals, plants, and the soil; the ecology of various grazing systems, including cropland, rangeland, pastureland, and forestland; how forages can be used to achieve agricultural sustainability; and the multitude of industries involving forages and livestock. The group of seventeen students was accompanied by four faculty members, including Dr. John Fike from Virginia Tech. Students on the trip came from diverse backgrounds with most studying various areas of animal science or agronomy; students studying soils and wildlife also participated. Several generous donors supported this trip, easing the financial burden and privileging the group

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#### Winter 2014





Tianyu Lei and Gabriel Pent, graduate students at Virginia Tech are pictured examining an eastern gamagrass inflorescence.

Ecology Page 4

# Reporting the progress of Virginia's forage industry