



# The Quarterly Beef News

Fall Edition Newsletter



McDowell County Center

October 2022

## Newsletter Highlights

**New Livestock & Field Crops Employee**

*Page 1*

**Soil Sampling & Rotational Grazing**

*Page 2*

**Hay Sampling**

*Page 3*

**Bull Breeding Soundness Evaluation**

*Page 4*

**Interpreting Forage Analysis Reports**

*Pages 5-7*

**Grants**

*Pages 8-9*



## New Employee Introduction

Hello everyone my name is Skyler Murray, I am the new McDowell County Extension Agent for Livestock and Field Crops. Just to give a little background about myself, I grew up on a fifth generation farm raising livestock and growing row crops. I was actively involved in 4-H and FFA where I exhibited livestock at local, state and national levels. I also participated in livestock judging and skillathon. In 2017, I was on the High Team Overall in the Senior Division at the NC State 4-H Livestock Judging Contest. In 2018, I participated in the livestock judging contest in Denver, Colorado at the National Western Stock Show, where we placed High Team Overall in goats. I graduated this past May from Clemson University with a major in Horticulture and a minor in Animal & Veterinary Science and a minor in Plant & Environmental Science. Please do not hesitate to reach out to me with any questions that you may have. I am here to help serve you! I look forward to meeting with you to learn more about your operations.

Contact Us!

NC COOPERATIVE  
EXTENSION

McDowell Center  
County Administration  
Building, Room 226  
60 East Court Street  
Marion, NC 28752

Phone: 828-652-8104

<http://mcdowell.ces.ncsu.edu>

[skyler\\_murray@ncsu.edu](mailto:skyler_murray@ncsu.edu)

Distributed in furtherance of the acts of Congress of May 8 and June 30, 1914. North Carolina State University and North Carolina A&T State University commit themselves to positive action to secure equal opportunity regardless of

race, color, creed, national origin, religion, sex, age, veteran status or disability.

In addition, the two Universities welcome all persons without regard to

sexual orientation. North Carolina State University, North Carolina A&T State

University, U.S. Department of Agriculture, and local governments cooperating.





## IMPORTANCE OF SOIL SAMPLING

Time has passed by rather quickly this year, it's hard to believe it is already September. When temperatures finally start to cool down a bit it makes it easier on our livestock. It's time to start thinking about pasture rejuvenation and management. The summer heat has definitely put a hurting on pastures and hay fields, therefore it is important to do soil tests and put out fertilizer accordingly. Before adding any lime or fertilizer this fall, I would highly recommend doing a soil sample, which is **free from April 1st - November 30th**. We have plenty of kits available here at the extension office for anyone who would be interested. I would be more than happy to come out and help you take your samples and go over the report with you when it comes back. It is important to get your soil tested so you know where you stand before you start applying fertilizer. Soil tests are great for showing you exactly what nutrients are needed to improve your land.

This will help you put your money towards the nutrients that would be most beneficial for your plants. Applying nutrients that are not needed could lead to some plant toxicities. Over applying fertilizers could lead to excess runoff in the waterways and could lead to nutrient leaching, resulting in loss of money.

## Rotational Grazing

Another thing you might want to consider to increase the longevity of your pasture is rotational grazing. Rotational grazing is beneficial in increasing productivity of the grass by allowing it more time to grow back than traditional grazing. It is actually easier to do than it sounds. The pasture may be broken down into smaller paddocks by either fencing or a temporary wire whichever works best for your operation. When using rotational grazing you do not want the livestock to graze it too close, this could cause the grass to take longer to grow back and could decrease the overall plant yield. One of the drawbacks is that it can be time consuming in terms of putting the temporary fence up and moving the cattle from one area to another. Overall though, it does save money. It is preserving and making the grass more productive longer than if it were traditionally grazed.



## Hay Sampling

With the summer starting to wind down, it has defiantly been hard on the grass. Not only was the heat hard this summer, but the drought did not help us at all. Many people I have talked to say they are lucky to even get a fall cutting this year. With the winter months ahead of us, many of us are wondering how will we have enough hay to get us through the winter without selling all the cattle? While soil samples are great for getting a general idea of soil health, it is also important to take hay samples as well. How will hay samples help me? Hay samples help to ensure your livestock are getting the nutrients that are needed. If animals are lacking the vital nutrients, your production will suffer which will affect your bottom line. An example of this would be cattle not putting weight on like they should, dull looking hair, etc.. With the costs of feed and hay on the increase it is important to be cost effective. You do not want to be giving your livestock nutrients that are not needed, you want to ensure they are maximizing production with the actual needed nutrients.

After you have collected your hay samples put them in a plastic bag and label the plastic bag with permanent ink with your name, the date the samples were taken and a sample ID you are sure to remember. Make sure to squeeze all excess air out of the bag. You may FedEx or UPS them to Forage Testing NCDA&CS, 4000 Reedy Creek Road, Raleigh NC 27607. Make sure to include a check or money order made out to the NCDA&CS for the appropriate amount (\$10/bag submitted).

Or contact your feed supplier, most feed companies will assist in sampling your hay as a service to the customer.

If you are in need of hay or want to sell hay the NC Department of Ag Hay Alert website may be beneficial for you.

<https://www.ncagr.gov/hayalert/>

Producers can also call the Hay Alert Line at  
(866) 506-6222

Also, be sure to let me know I get calls from people looking to purchase hay.

# Bull Breeding Soundness Evaluation

*Lew Strickland, DVM, DACT Extension Veterinarian and Assistant Professor Department of Animal Science and Department of Large Animal Clinical Sciences*

Bull Breeding Soundness Evaluation Are your bulls fit for service? Failure to properly evaluate bulls prior to and during the breeding season can result in huge economic losses, yet it is estimated that only about 10 percent of beef bulls in the nation undergo a bull breeding soundness evaluation. A bull's fertility can be considered fertile, sub-fertile or sterile. Sub-fertile bulls may eventually get cows pregnant, but they will take much longer than fertile bulls to settle a group of cows. The result is that sub-fertile bulls produce fewer calves and a poorly matched group of calves that are born later, and are therefore younger and lighter at weaning. In either situation, sub-fertile bulls produce fewer pounds of beef per exposed cow, affecting the economic profitability of a cow-calf operation. A bull breeding soundness evaluation (BSE) is a uniform method of assessing a bull's likelihood of establishing pregnancy in an appropriate number of open, healthy, cycling cows or heifers in a defined breeding season. A bull BSE includes the following four components:

- 1. Physical exam.** Evaluates the physical characteristics of a bull necessary for mobility in the pasture, structural soundness, and overall internal and external reproductive tract development.
- 2. Scrotal circumference.** Evaluates testicular size and health, as well as estimating the bull's sperm-producing capacity. Bulls must meet minimum scrotal circumference measurements based on age in order to pass a BSE. The required measurements are less than or equal to 15 months 30 cm, greater than 15-18 months 31 cm, greater than 18-21 months 32 cm, greater than 21-24 months 33cm, greater than 24 months 34 cm.
- 3. Sperm motility.** Ensures that the bull is producing sufficient numbers of live motile sperm. Bulls must have at least 30 percent progressively motile spermatozoa to pass a BSE.
- 4. Sperm morphology.** Ensures that the bull is producing sperm that are properly shaped and capable of fertilization. Bulls must produce at least 70 percent normal sperm out of a count of 100 to pass a BSE.

The recommended minimum requirements for scrotal circumference, sperm motility and sperm morphology are outlined by the Society for Theriogenology ([therio.org](http://therio.org)). Additional factors influencing the number of cows a bull can breed in a season include pasture size and terrain, physical soundness, age of the bull, libido, number of bulls in the group, etc. W 788 Bull Breeding Soundness Evaluation Based on the results of the BSE, a bull is then assigned to one of three classifications:

- 1. Satisfactory potential breeder (fertile)-** This classification indicates that the bull:
  - Passed a physical exam.
  - Met the minimum requirements for scrotal circumference.
  - Has at least 30 percent sperm motility.
  - Produces at least 70 percent normal sperm.
- 2. Unsatisfactory potential breeder (sub-fertile or sterile)-** The bull did not pass at least one of the four components of the BSE. This does not mean this bull cannot impregnate cows. It means that this bull will not efficiently breed cows, and it is not recommended to use these bulls.
- 3. Deferred-** The bull did not pass at least one of the four components of the BSE due to a condition that may resolve with time or treatment. A "deferred" bull should be rechecked at a later date recommended by the examining veterinarian. A BSE does not evaluate a bull's libido, nor does it ensure that a bull will remain a satisfactory potential breeder the entire breeding season. An injury to a bull's hooves, legs or reproductive tract may render a bull incapable of breeding your cows. Therefore, it is still extremely important to observe your bulls regularly to ensure they are doing their job.

A BSE also does not guarantee that bulls are free of infectious diseases, so consult with your veterinarian on what diagnostic tests may or may not be appropriate for your bull(s). The extra pounds of beef per exposed cow will more than pay for the BSE, so contact your veterinarian for a bull BSE prior to the next breeding season.

## Interpreting Forage Analysis Reports for Beef Cows

*Dr. Matt Poore*

*NC Cooperative Extension and Dept of Animal Science, NCSU*

Analysis of forages, and using the resulting information to create a balanced ration is a critical component of nutritional management for any species of herbivore. The North Carolina Department of Agriculture and Consumer Services Farm Feed Testing Service provides producers with a detailed analysis that includes important nutritional components including dry matter (moisture), fiber, minerals, energy, nitrate, and important mycotoxins. This sheet is intended to give a brief description of the items that appear on the analysis report form to help you make an initial interpretation regarding your analysis results. More detailed interpretation and assistance with balancing rations can be obtained by contacting your livestock extension agent or by visiting the web site given at the end of the document.

The analysis sheet will have two columns of numbers. The first identified as “As Sampled Basis” and the second as “Dry Matter Basis”. The first item in the “As Sampled” column is % Dry Matter. **Other than % Dry Matter all interpretation of the analysis is based on the “Dry Matter Basis” column.** This is because dry matter level (moisture level) varies in each sample, and putting them on a dry basis makes the information easier to interpret.

**Dry Matter %.** The amount of dry matter in a feed is a key piece of information. Most analysis will be for hay, haylage, or silage, and dry matter % influences how stable a forage will be in storage. Dry matter of fresh forages sampled directly from pastures is of less importance. Dry forages including hay and crop residues should contain at least 80% dry matter or they will heat in storage which will result in damage to the nutritional value, and they will deteriorate over time due to mold growth. Spontaneous combustion (hay fires) is a real possibility with hay baled at less than 80% dry matter. Dry matter of higher than 85% is preferable for hay and other dry roughages for best results. Haylages made from forage crops ideally will contain from 35 to 65% dry matter in order to ferment properly. Chopped silage, such as corn silage, should ideally be between 30 and 40% dry matter.

### **INTERPRETATION OF ANALYSIS OF NUTRIENTS ON A DRY MATTER BASIS.**

**Crude Protein, %, Unavailable Protein, %, and Adjusted Crude Protein, %.** Crude protein (CP) is one of the key nutrients in feeds. The typical dry cow needs 7.5% CP, and a lactating cow needs 11% CP. Any forage has a small level of the protein in a “bound” form which is normal and this is called “Unavailable Protein”. If the unavailable protein exceeds 10% of the total crude protein it means that the hay or haylage probably heated, resulting in some damage to the protein. Any bound protein exceeding 10% of the total is subtracted resulting in the “Adjusted Crude Protein”. Adjusted Crude Protein is the value that should be used to evaluate the forage and balance rations. In most forage this will be the same as the Total Crude Protein.

**Acid Detergent Fiber, %.** Acid detergent fiber (ADF) is the less digestible fiber portion of the forage. This value is used to calculate the energy values discussed below. The higher the ADF level, the lower the energy. An equation specific for each feed is used to calculate energy from ADF so it is important to fill in the proper feed type on the submission form. The animal species should also be given because different equations are used for different species.

Calcium and Phosphorus, %. Calcium (Ca) and Phosphorus (P) are important major minerals which are rarely deficient in forages. A dry cow requires 0.25% Ca and 0.16% P, while a lactating cow needs 0.31% Ca and 0.21% P. It is also important that the ratio between Ca and P is 1.5:1 (e.g. 0.3% Ca and 0.2% P) to 4:1 (e.g. 1% Ca and 0.25% P). When P level in the forage is higher than Ca, producers should seek a high calcium mineral supplement. Otherwise a standard mineral supplement should take care of Ca and P needs.

Sulfur, %. A dry or lactating cow only needs about 0.15% sulfur and it will rarely be lower than that. Occasionally sulfur will be elevated where poultry litter, municipal biosolids, or other high sulfur fertilizers are used. At levels above 0.3% sulfur a higher level of copper may be needed in mineral supplements, and at greater than 0.4% sulfur other production problems might occur. If sulfur is higher than 0.4%, get advice before feeding the forage.

Magnesium, Sodium, and Potassium, %. Magnesium (Mg), Sodium (Na), and Potassium (K) are three more major minerals that should be considered. Dry cows need about 0.12% Mg, 0.08% Na, and 0.6% K, while lactating cows need 0.2% Mg, 0.1% Na, and 0.7% K. Forages will usually be near the requirement for Mg, nearly always below the requirement for Na (salt), and almost never below requirement for K. Sometimes potassium is high enough to cause health problems because it interferes with magnesium resulting in grass tetany. This is usually a concern if the potassium level is above 3%. Grass tetany is very easily controlled by using a high magnesium mineral supplement (10 to 14% magnesium) during the time a cow is in early lactation and through the end of the spring of the year. If potassium levels are expected to be consistently above 2% in forages, then producers may consider using a high magnesium mineral supplement all year long.

Copper, Iron, Manganese, and Zinc, ppm. These are 4 important “trace minerals” that are reported as parts per million (ppm) rather than %. Copper is of critical importance and almost always deficient in forages in our state. Cows need from 10 to 15 ppm copper in their diet in normal situations, and perhaps more if there are other interfering minerals present such as sulfur, iron, and molybdenum. Iron is almost never low in forages in NC, with the cow requirement only being 50 ppm. Sometimes iron is elevated and levels over 1000 ppm are a concern. Sometimes this elevated level indicates soil contamination which is not a great problem, but sometimes it is because of a high level of iron in the plant tissue which can cause interference with copper absorption. Manganese requirement is about 40 ppm and it is almost never deficient in forages in NC. Zinc requirement is 30 ppm and it is often marginal or deficient in our forages in NC.

A good quality free-choice mineral supplement will meet the trace mineral needs. These supplements will provide the major minerals (including salt, calcium, phosphorus, and magnesium in a “High Mag” supplement) and the trace minerals. The recommended level of trace minerals in mineral supplements formulated for 4 oz/head daily is 1300 ppm copper, 1800 ppm manganese, 2600 ppm zinc, and 26 ppm selenium. Producers should look at their mineral supplement tag and make sure trace mineral levels are adequate. The one important trace mineral commonly deficient, but not analyzed for in the NCDA and CS program is selenium (due to a very high cost of the analysis), so it should be supplemented at the recommended level in all cases. It is important to note that red trace mineralized salt, or other “salt block” products are generally not an adequate mineral supplement for producing livestock.

Nitrate ion, %. Nitrate poisoning is a real concern that livestock producers should be aware of. High nitrate levels might occur whenever forage species are used that accumulate nitrate (such as sudan x sorghum hybrids), when nitrogen fertilization level is high, or during drought. Animals adapt slowly to nitrate, but if unadapted animals are challenged with it they might either abort, or they might die.

Below 0.25% nitrate is safe for all animals. Nitrate levels above 0.5% are a major concern for unadapted animals, and levels above 1% are considered very dangerous. If your nitrate level is high consult our guide on using high nitrate forages at: <http://www.ces.ncsu.edu/disaster/drought>.

**Net Energy (lactation), Mcal/lb and TDN, %.** Net energy and TDN are two measures of energy content of the forage. We usually use TDN to balance rations for beef cows. A dry cow needs about 52% TDN, and a lactating cow needs about 60% TDN.

**Aflatoxin.** Forages are generally not analyzed for mycotoxins, but in some situations you may have requested this analysis, especially for corn type forages (silages, stalks, etc.). Feeds for beef cattle should contain less than 20 ppb aflatoxin. If the level is higher than that in the forage in question, it may be fed in combination with other feeds containing low levels of aflatoxin. A guide to mycotoxins is also available at <http://www.ces.ncsu.edu/disaster/drought>.

**Other analyses.** Ash, %, NDF, % and NSC, % will also be run upon request. These values are important in some situations. An ash level of over 5% is probably due to soil contamination. This usually does not cause problems, but soil dilutes out the important nutrients. Neutral detergent fiber (NDF) includes all the cell wall material in the forage and is important in some situations to interpret maximum level of intake. Non structural carbohydrates (NSC, %) includes sugars, starches, and other soluble carbohydrates. This value may be important for some species, but usually not for beef cattle.



## AUTUMN HARVEST BRAISED BEEF BRISKET

### INGREDIENTS:

- 1 beef Brisket Flat Half Boneless (2-1/2 to 3-1/2 pounds)
- 2 tablespoons ground cumin
- 2 teaspoons ground cinnamon
- 2 tablespoons vegetable oil
- Salt and pepper
- 2 tablespoons minced garlic
- 1 cup cran-apple, cranberry or apple juice, divided
- 3 to 4 medium red apples (such as Jonathan, Red Delicious, Jazz or Fuji), cored, cut into 16 wedges each (about 1-1/4 pounds)
- 3/4 cup dried sweetened cranberries
- 2 tablespoons cornstarch

## **COOKING:**

1. Combine cumin and cinnamon; rub over beef Brisket. Heat oil in stockpot over medium heat until hot. Brown Brisket; season beef with salt and pepper, as desired.
2. Add 3/4 cup juice and garlic to stockpot; bring liquid to a boil. Reduce heat; cover tightly and simmer 2-3/4 to 3-1/4 hours. Add apples and cranberries to stockpot. Bring to a boil. Reduce heat; cover and simmer 20 to 25 minutes or until Brisket and apples are fork-tender, stirring and rearranging apples once during cooking.
3. Remove Brisket; keep warm. Combine remaining 1/4 cup juice and cornstarch; stir cornstarch mixture into apple mixture. Bring to a boil, stirring constantly. Boil 1 to 2 minutes or until mixture has thickened, stirring frequently.
4. Trim fat from Brisket. Carve diagonally across the grain into thin slices. Season with salt and pepper, as desired. Serve beef with apple mixture.



### **Grants for diversifying farms**

WNC AgOptions intent to apply deadline Oct. 14; Application deadline Nov. 18.

WNC Agricultural Options is now accepting grant applications from farmers diversifying or expanding their businesses. With funding from the N.C. Tobacco Trust Fund Commission, WNC AgOptions is distributing a total of \$229,000 to western North Carolina farmers in 2018. The application deadline is Nov. 18. WNC AgOptions helps offset farmers' risk of trying new ventures and expanding their farms with \$3,000 and \$6,000 grants.

Applicants should contact their Cooperative Extension agents by Oct. 14 to set up an appointment to discuss their projects. Applications are available at [www.wncagoptions.org](http://www.wncagoptions.org) or at local Cooperative Extension centers. WNC AgOptions offers grants to farmers in the following counties/units: Avery, Buncombe, Burke, Caldwell, Cherokee, Clay, Cleveland, Graham, Haywood, Henderson, Jackson, Macon, Madison, McDowell, Mitchell, Polk, Rutherford, Swain, Transylvania, Watauga and Yancey counties as well as the Eastern Band of Cherokee Indians.

Applicants are encouraged to attend information sessions, which will be held throughout the region through October. An information session is scheduled at the Burke County Ag Center, 130 Ammons Dr, Morganton on Monday, September 26, 6 p.m. Check the WNC AgOptions website for all dates and locations of other upcoming sessions, or call the Extension office at 828-652-8104.



**Southern Sustainable Agriculture Research and Education  
2023 Producer Grant Call for Proposals**

Amount Funded: Individual Farmers, \$15,000; Farmer Groups, \$20,000  
For a two-year project

**Proposal submission deadline:** November 11, 2022 at 12 p.m. (NOON) EST

**Online submission link:** <https://projects.sare.org/proposals/create/#!/form/903888>

Read more about the requirements for Producer Grants before applying. Questions should be directed to the grant manager, Candace Pollock-Moore at [cpollock@uga.edu](mailto:cpollock@uga.edu) or call 770-412-4786.

**Producer Grant Schedule:**

**September 2022:** Calls for Proposals Released

**November 11, 2022:** Proposals Due

**February 2023:** Selected Proposals Funded and Announced  
Introduction

Southern SARE recognizes the value and importance of on-farm, producer experiences in developing solutions to agricultural production problems. Producer Grants give farmers and ranchers the opportunity to conduct their own research projects to develop sustainable production and marketing practices.

The goal of the Producer Grant Program is simple: Allow farmers to test, on a small scale, an idea, practice or technology to a production or marketing problem (either as an individual or as a group), evaluate whether the results sustainably address the problem, and share how those efforts can benefit other farmers. Successful projects can then be applied by the farmer applicant or by others on a larger scale.

Producer Grants are research grants. Grant funds cannot be used to pay a farmer to farm, fund operating expenses, or conduct any other kind of farm business.

Grant funds are paid by reimbursement of allowable project expenses.

Public notices have started going out about the upcoming right-to-repair (RTR) meetings to be held by the General Assembly's Agriculture and Forestry Awareness Study Commission. The following dates and locations are planned:

October 3rd, 10am – NC A&T University Farm Pavilion (3020 McConnell Rd, Greensboro, NC 27401)

October 25th, 10am – Buncombe County Cooperative Extension Office (49 Mt Carmel Rd, Asheville, NC 28806)

Please let everyone in your network know about these upcoming meetings, especially those who have been engaged on the RTR issue, and encourage them to participate. I know it is not ideal timing for many who will be in the field, so if someone cannot make it but has comments/questions they'd like to present, please gather and send those to me, Jay, and Mitch ahead of the hearings.

If you cannot attend the meetings please submit a public comment using the form on the General Assembly website:

<https://www.ncleg.gov/RequestForComments/42>

What is the Right to Repair? Right to Repair gives equipment owners the property rights of the equipment they own to have the right to repair their equipment and/or to have their equipment serviced at an independent repair shop. In addition, Right to Repair gives equal access to information on manuals, diagrams, software, software updates, licenses, parts, tools, and more.

In particular, we'd ask that comments focus on specific examples and ideas for how to address them. General complaints are not particularly helpful. We know that RTR is an issue; the goal here is to try to focus the discussion on what can/should be done about it. "I can't work on my own equipment" or "I can't get service when my equipment breaks down" are pretty general comments, versus a more specific example: "I had \_\_\_ break on my \_\_\_ (type of equipment) and \_\_\_ is what I think could be done to ensure it doesn't happen again."

# Cow Herd Management Calendar

## October/November:

- Make sure bull is in good breeding condition. Trim the hooves, conduct breeding soundness exams, body condition needs to be at least a 6.0, may need to provide additional feed to get to that score.
- May need to purchase additional bulls if needed to give a bull:cow ration of 1:25.
- As the weather starts to get cooler, may need to treat cattle for lice.
- Remove old insecticide ear tags as you work cows. Old tags can release low levels of insecticide that can promote development of resistant strains of flies.
- Get your forage analyzed and order your winter supplements if you have not already done so.
- Check your calving supplies to ensure you have the proper equipment on hand if the need arises.
- Start checking your heifers and cows if they are due to come in around fall or early winter. Make sure the cattle maintain a body condition score of 5 to 6, provide additional feed if necessary.
- Vaccinate calves with 7-way clostridium

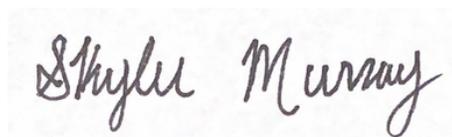
## Upcoming Events:



- **Cattlemen's Meeting-** Be on the Lookout!
- **NC State Fair-** *October 13-23*
- **McMahan Farm & Hancock Angus Annual Registered Angus Bull Sale, Mocksville, NC-** *November 12*
- **Southeast Bull Expo, Asheboro, NC-** *November 19*
- **Edisto Performance Tested Bred Heifer Sale, Blackville, SC-** *October 8*
- **Knoll Crest Farm Total Performance Bull Sale, Red House, Va.-** *December 2*

**McDowell County Center  
60 E. Court Street  
Marion, North Carolina  
28752**

Compiled and edited by:



Skyler Murray  
Extension Agent  
Ag & Natural Resources

Secterial support by: Heather Peek