



# Regional Beef Notes

## Summer 2015

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**Tri-State Beef Conference**  
**Abingdon, VA**  
**August 6th, 2015**

Location: Washington County Fairgrounds  
Abingdon, VA

A conference for both cow-calf producers and stocker operators hosted by North Carolina Cooperative Extension, University Tennessee Extension and Virginia Cooperative Extension.

Registration- \$25 at the door. Lunch included. Registration begins at 8am, program to begin at 9:20am.

Sessions to include: Beef Cattle Outlook  
Extending the Grazing Season, Soil Health, and Managing Weeds  
Hoof Confirmation and Selecting Breeding Stock  
Receiving Program for Stockers and New Products and How They are Used  
Financial Risk: Importance of Lender Relationship  
Virtual Tours of Three Beef Operations  
Body Condition of Calves and Performance in the Feedlot

A van will be leaving from the Anson Co. Extension Office at 5am Thursday, August 6th and return that night at approximately 9pm. Parking will be at the lower end of the South Piedmont Community College in Wadesboro.

Please call 704.694.2415 to reserve your spot on the van.

Further questions contact Jessica Morgan, 704.694.2415 or  
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## High Nitrate Levels in Forages: A Concern for 2015

Jessica Morgan, Extension Agent, Anson County Center

Nitrate poisoning is a serious threat to livestock especially in drought years, caused by the consumption of hay or pasture containing high levels of nitrate-nitrogen.

### How do high levels of nitrate-nitrogen end up in a forage?

When plants are under normal growing conditions they take up nitrogen from the soil and store it as nitrates. The plant then uses the nitrate stores to convert to protein to continue plant growth. Stress to the plant, including drought, can stop plant growth, leading to a buildup of nitrates in the plant. Other stressors include shading, cloudy weather and frost.

### Are forages that are fertilized with animal waste (hog waste or poultry litter) more likely to have high nitrates?

Not necessarily. Any forage can accumulate nitrates under the right conditions. The type of fertilizer has no effect on high nitrate levels. So whether its commercial fertilizer or organic waste, **if it has been applied to land in excess** or at the wrong time, there is a chance it may lead to high nitrate levels.

### What forages are most susceptible to high nitrate levels?

Hay cut during or just after a drought is suspect, especially if fertilizer was applied soon before hay harvest. **Nitrates in hay are stable and can cause symptoms of poisoning months after harvest.**

Some forage species are also more susceptible to accumulate nitrates than others. Plants that are known to store nitrates at toxic levels are sudangrass, sorghum-sudangrass hybrids, johnsongrass, pearl millet, corn, wheat, and oats. Certain weeds will also store nitrates like pigweed, lambsquarter, nightshades and thistles,

and can be an issue if baled in hay.

### What can be done about possible high nitrate hay?

The easiest way to know for sure about suspect forage is to take a sample. The North Carolina Department of Agriculture can conduct a free nitrate test on forage samples. It is recommended that all suspect forages be tested **BEFORE** fed to livestock. There is no way to determine nitrate content by looking at the hay. For help on taking forage samples and interpreting results, contact your local County Extension Agent.

### What nitrate levels are safe for livestock (cattle, sheep, & goats)?

If these animals are gradually introduced to nitrates, they can adapt to higher levels of nitrates in their diet. The following table (below) should be used to determine how high of a level your animals can tolerate.

### What are the signs of nitrate poisoning?

If you are feeding hay that fell in to the Moderate Risk category and above, watch cattle for symptoms of disease. These would include symptoms of **suffocation, labored breathing, and lack of coordination**. The most reliable symptom of nitrate poisoning is a **chocolate brown coloration of the blood**. Other signs include **diarrhea, frequent urination, and frothing at the mouth**. If you suspect nitrate poisoning, discontinue feeding that hay and contact a veterinarian immediately. Quickly feeding grain to animals may decrease their chances through a dilution effect, they will eat the grain, thus leaving the high nitrate forage alone. Hungry cows most often become ill because they are gorging themselves on high nitrate hay. Keeping cows in good body condition will help reduce the possibility they will ingest a lot of high nitrate forage.

| Nitrate Ion % | Unadapted Animals   | Adapted Animals      |
|---------------|---|----------------------|
| 0.0-0.25      | <b>Safe:</b> Generally considered safe for all animals  | <b>Safe</b>          |
| 0.26-0.50     | <b>Slight Risk:</b> Should not make up more than 50% of total intake for pregnant animals                       | <b>Safe</b>          |
| 0.51-1.00     | <b>Moderate Risk:</b> Do not feed to pregnant animals. Limit to less than 50% total intake for other animals    | <b>Slight Risk</b>   |
| 1.01-1.50     | <b>High Risk:</b> Exercise extreme caution when feeding. Limit to 33% of ration.                                | <b>Moderate Risk</b> |
| 1.51-2.00     | <b>Severe Risk:</b> Do not feed to any animals free choice. If using in a mixed ration, limit to 25% of ration. | <b>High Risk</b>     |
| 2.01-2.50     | <b>Extreme Risk:</b> Do not feed at all   | <b>Severe Risk</b>   |
| 2.51 and up   | <b>Extreme Risk:</b> Do not feed at all   | <b>Extreme Risk</b>  |

## Importance of Heat Stress in Cattle

Jessica Morgan, Extension Agent, Anson County Center



It's hot, it's been hot, and it's going to continue to be hot. Cattle feel heat stress way before humans do. The optimum

comfort zone for cattle is typically between 50° and 75° F. This varies based on body condition, hair, breed, and age, but typically a cow will start to exhibit signs of heat stress when temperatures are over 75° F.

It's summer, it happens every year, why should you be concerned? In early stages of heat stress, cattle feed and roughage intake drop. However, because of the heat, cattle are requiring additional energy to help keep cool, typically pulling from fat reserves and reducing production and efficiency. This can effect animals on feed, gestating and lactating cows as well as bulls and decreased fertility levels. Gestation with no lactation is typically our time to put weight on thin cows, heat stress will prevent an increase in body condition which can lead to fertility problems this winter. At times of stress, animals tend to deplete their bodies of critical nutrients like zinc and copper, both of which are essential to immune responses. Disease susceptibility is also a concern during heat stress.

### Signs of Heat Stress in Cattle

- Reduced grazing activity during normal grazing periods (early morning and evening)
- Crowding under shade or around stock tanks. Crowding intensifies the issue of heat stress.
- Panting and increased salivating
- Rapid breathing.
- Decreased or lack of normal movement.

### Having a Plan to Minimize Heat Stress (as best we can)

- **Identify cattle which are high risk**
  - Newly arrived cattle that have experienced other stressors (market, hauling, vaccinations, weaning)
  - Weaning or recently weaned cattle
  - Cattle grazing endophyte infected pastures. (Can increase temperatures of cattle.)
  - Cattle that have been sick (respiratory) and may have lung damage.
  - Black or dark-hided cattle

- Heavy bred cows
- Older Cows
- Thin cattle without energy stores

- **Water Supply-** At temperatures above 80° F, cattle may need up to two gallons per hour for each 100 lbs body weight. A typical 1400 lb cow would need around 675 gallons a day! Water should be clean. Keep an eye on ponds if they are used for livestock water. Water in ponds that contain heavy silt or algae are typically consumed at a lower rate than clean water supplies.
- **Shade or Shade Structures-** Shading does not decrease air temperature, but it does reduce radiant energy (sun exposure) which is helpful to cattle, especially dark-haired animals. We take trees for granted as shade cover in this part of the world. There should be at least 40-50 sq ft per animal of shade, if not more, to prevent excessive grouping which can kill trees over time.
- **Handling and processing-** Do not handle or process cattle in hot weather if at all possible. It is recommended that if you must work cattle during hot weather, do it between midnight and 8am and never after 10 am. Research shows that working cattle during hot weather can increase their internal body temperature up to 3.5°F!

It's important to recognize that the cattle don't like the weather as much as we do! It is our job as animal caretakers to reduce stressors as much as we can. We can't keep cattle perfectly comfortable and performing as normal in the summer, but we can take some steps through management to reduce the effects of heat stress.



## Upcoming Events

|   |                            |
|---|----------------------------|
| <i>Tri-State Beef Conference .Abingdon, VA.....</i>               | <b>August 6</b>            |
| <i>Anson Co. Cattlemen’s Assoc. Meeting-7p.m. ....</i>            | <b>August 11</b>           |
| <i>Regular Feeder Cattle Sale.....</i>                            | <b>August 13</b>           |
| <i>Stanly Co.-Agri-Civic Day &amp; Livestock Show.....</i>        | <b>August 15</b>           |
| <i>BQA Cattle Sale .....</i>                                      | <b>September 3</b>         |
| <i>Regular Feeder Cattle Sale .....</i>                           | <b>September 10</b>        |
| <i>Pesticide Recertification “V” Credits-Anson Co. 8 am .....</i> | <b>September 15</b>        |
| <i>Anson Ag Fair &amp; Livestock Show.....</i>                    | <b>September 25&amp;26</b> |

Persons with disability or persons with limited English proficiency can request accommodations by contacting Jessica Morgan, Anson Co. Agriculture Agent at 704.694.2415, or e-mail [jessica\\_morgan@ncsu.edu](mailto:jessica_morgan@ncsu.edu) at least five days prior to any event listed in this newsletter.

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