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NC State Extension works in tandem with N.C. A&T State University, as well as federal, state and local governments, to form a strategic partnership known as N.C. Cooperative Extension.

Initial 10-hour Animal Waste Operator Class (OIC)

There will be an initial class on January 28 and 29 on zoom and small groups at select Extension Offices from 10am-4pm. Call 910-876-3623 to sign up by January 22.

Forage Management Series for Horse Owners

This is a virtual series on forage management for horse owners. Each session will be held virtually at 12:00 p.m. EST.

January 14: Soil fertility and pasture management to include taking and interpreting a soil sample, grazing management, and fertilization.

February 11: Weed control for grazing, to include weed identification for weeds common in our area and control options.

To sign-up use the following link: <https://www.eventbrite.com/e/forage-management-for-horse-owners-tickets-127490247763>

Managing Feral Swine Webinar

Hosted by Jones County Extension, experts will discuss feral swine biology, the disease threats they pose, biosecurity measures, and effective options for removing them from your property or livestock operation. Speakers include Dr. Jon Holt, Extension Swine Specialist, and Falyn Owens, Extension Wildlife Biologist with the NC Wildlife Resources Commission. This webinar will be held at 7 pm on January 26. Registration is required, email Dan for the link at dgwells@ncsu.edu by January 25.

Hay Directory

North Carolina Department of Agriculture's Hay Alert is at <http://www.ncagr.gov/HayAlert/>. It lists people selling hay or looking for hay to buy. It is free to list your hay.

2021 Cape Fear Cattle Conference

Will be held virtually on Tuesday, January 19 at 6:30pm. Have you ever wondered where your steaks come from? This virtual conference will feature carcass evaluation and fabrication. We will learn about quality and yield grades along with where on the animal the different cuts of meat come from and where the high value cuts are located. Dr. Dan Hale and Dr. Davey Griffin of Texas A&M AgriLife Extension Service will be with us for a live question and answer session.

To register for the meeting, go to the link below. Contact Liz Lahti at liz_lahti@ncsu.edu or 910-321-6862 if you have any questions.

<https://go.ncsu.edu/2021capefearcattleconference>

Backyard Flock Series

Hosted by the Area Specialized Poultry Agents, an educational meeting for backyard poultry growers will be held January 27 from Noon to 1 pm via Zoom. The speaker is Dr. Ken Anderson with the NCSU Prestage Department of Poultry Science. Dr. Anderson will be speaking and presenting information about management of backyard flocks. Registration is required. Search for "Backyard Flock Management" on eventbrite.com or email Dan for the direct link at dgwells@ncsu.edu by January 25.

For any meeting listed, persons with disabilities may request accommodations to participate by contacting the Extension Office where the meeting will be held by phone, email, or in person at least 7 days prior to the event.

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Public Perception o the Proposed “Pipeline”

By: Eve Honeycutt, Livestock Extension Agent with N.C. Cooperative Extension in Lenoir and Greene Counties

Noise of the world has drowned out the story of today’s modern agriculture!

You may have heard about the Align RNG project that is a partnership with Smithfield and Dominion Energy. This project seeks to connect multiple hog farms in Duplin and Sampson Counties in order to capture methane and convert it to renewable natural gas for use by homeowners and industry as an energy source. There is a lot of pushback from some community members about this project and the permitting process to get it established.

The world wants modernization of everything- education, socializations, and medicine, yet they think farmers should still be using oxen in harness. Agriculture has advanced with the rest of the world, and we have to help our communities understand that!

In 2007, the NC legislature made the swine moratorium permanent. In that same year, they also passed Senate Bill 3, which set into motion the requirements for the NC Utilities Commission to capture a percentage of its usage from renewable sources. Also included was a requirement for a portion of those sources to be nutrients produced from the production of swine and poultry in confinement settings.

Due to the regulatory nature of swine nutrients, there has been a lot of pushback because of misinformation regarding any modernization of the way those nutrients are handled. This has put NC way behind on its goals of using one of our most renewable resources as energy. Other states have multiple projects that are safe and successful.

The Align RNG project is a huge advance for utilizing these nutrients from all the hogs produced in NC. We are poised to produce a considerable source of renewable energy. The system of pipes that will transmit the captured gases for processing are low pressure lines. This is hardly the “pipeline” that opponents make it seem. These lines would be very similar to the lines that connect homeowners to the natural gas pipeline that already exists.

This system requires that the lagoons be covered, which will allow the methane and other nutrients to be captured, processed, and converted into natural gas. The nutrients remaining in the lagoon will be land applied to fertilize crops, on a level far more diluted than synthetic fertilizers.

Those against this renewable energy project are misinformed. It will have huge benefits for eastern NC in terms of energy sources and reduced costs. We are excellent at producing pork, why wouldn’t we do the best possible job trying to re-use all of the products from that production? The swine industry has made advances in leaps and bounds in terms of production. Modern hog farms are safe and healthy for the hogs, the farmers, and the people that live nearby. This project is the next step in modern agriculture and will keep NC on the same level as other states with its commitment to renewable energy.

On-Farm Euthanasia of Cattle

Submitted By: Paul Gonzalez, Livestock Extension Agent with N.C. Cooperative Extension in Sampson County

From The Beef Site, "Euthanasia Guidelines for Cattle"

The following is a summary of the American Veterinary Medical Association guidelines for euthanizing cattle, with assistance from Dr Dee Griffin, University of Nebraska, Professor James P Reynolds, Western University of Veterinary Medicine, Pomona and Glen T Johnson, director at the Reedsburg Veterinary Clinic.

Euthanasia means a "good death" whereby the methods applied to cause death induce an immediate loss of consciousness followed by cardiac and respiratory arrest and death without a return to consciousness. In the updated version of the AVMA Guidelines, euthanasia techniques are classified as 1) Acceptable, 2) Acceptable with Conditions, 3) Adjunctive, and 4) Unacceptable.

Methods recognized as appropriate for euthanasia of cattle are: 1) barbiturates and barbituric acid derivatives ("Acceptable"), gunshot and penetrating captive bolt ("Acceptable with Conditions"). Penetrating and non-penetrating captive bolt are suitable for euthanasia of calves. Whether used in mature animals or in calves penetrating captive bolt requires an "Adjunctive" method to assure death.

Barbiturates and barbituric acid derivatives—Barbiturates are preferred by some because of their rapid action and ability to induce a smooth transition from consciousness to unconsciousness and death. Drawbacks to the use of these agents for euthanasia include: cost, the need for restraint to deliver the drug, necessity to maintain a careful accounting of amounts used, requirements that these agents be administered only by a veterinarian or personnel who are registered with the US Drug Enforcement Administration and finally, residues that limit carcass disposal options.

"Free Bullet" from Gunshot. A 2008 study by Fulwider found that gunshot is the most common method used for on-farm euthanasia of cattle. Death by means of a "free bullet" is caused by massive destruction of brain tissue. Despite its popularity and effectiveness for the purpose of euthanasia, those who are less familiar with firearms often find gunshot violent and objectionable. However, as stated in a previous edition of the Guidelines:

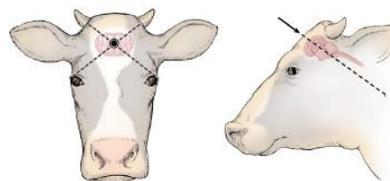
"Properly applied, "euthanasia by either gunshot or penetrating captive bolt, causes less fear and anxiety and induces a more rapid, painless, and humane death than can be achieved by most other methods."

Handguns. For the purposes of euthanasia, handguns are limited to close-range shooting (within 1 to 2 feet or 30 to 60 cm) of the intended target. Calibers ranging from .32 to .45 are recommended for euthanasia of cattle. Solid-point lead bullets are recommended over hollow points because they are more likely to traverse the skull. Hollow point bullets are designed to expand and fragment on impact with their targets which reduces the depth of penetration. The .22 caliber handgun is not recommended for routine euthanasia of adult cattle regardless of the type of bullet used, because of the inability to consistently achieve desirable muzzle energies with standard commercial loads.

Rifles. Rifles are the preferred firearm for euthanasia when it is necessary to shoot from a distance. Rifles are capable of delivering bullets at much higher muzzle velocities and energies and are therefore not the ideal choice for euthanasia of animals in indoor or short range conditions. General recommendations on rifle selection for use in euthanasia of cattle include; .22 magnum, .223, .243, .270 and .308 and others.

Shotguns. Shotguns loaded with birdshot (lead or steel BBs) or slugs (solid lead projectiles specifically designed for shotguns) are appropriate from a distance of 1 to 2 yards (.9 to 1.8 meters). Although all shotguns are lethal at close range, the preferred gauges for euthanasia of mature cattle are 20, 16, or 12. Number 6 or larger birdshot or shotgun slugs are the best choices for euthanasia of cattle. Birdshot begins to disperse as it leaves the end of the gun barrel; however, if the operator stays within short range of the intended anatomic site, the birdshot will strike the skull as a compact bolus or mass of BBs with ballistic characteristics on impact and entry that are similar to a solid lead bullet. At close range, penetration of the skull is assured with massive destruction of brain tissue from the dispersion of birdshot into the brain that results in immediate loss of consciousness and rapid death. For safety reasons it is important that the muzzle of a shotgun (or any other firearm) never be held directly against the animal's head.

Figure 4—Anatomic site for gunshot or placement of a captive bolt and desired path of the projectile in bovids.



Unacceptable Methods

The methods of euthanasia deemed unacceptable include:

- 1) manually applied blunt force trauma (as with a large hammer),
- 2) injection of chemical agents or other substances not specifically designed or labeled for euthanasia (i.e. disinfectants, cleaning solutions, etc.),
- 3) air injection into the vein,
- 4) electrocution as with a 120 volt electrical cord,
- 5) drowning,
- 6) exsanguination of conscious animals, and
- 7) deep tranquilization as with xylazine or other alpha-2 agonist followed by potassium chloride or magnesium sulfate. While some have been forced out of desperation to resort to one or more of these methods, readers are strongly advised against their use.

Confirmation of Death

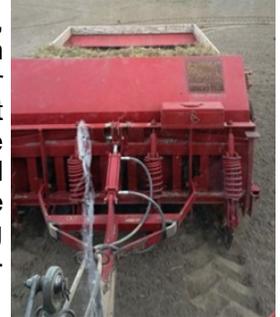
Regardless of method used for conducting euthanasia procedures, it is important to confirm death. It is sometimes more easily said than done. However, the most reliable criteria include lack of pulse, breathing, corneal reflex and response to firm toe pinch, inability to hear respiratory sounds and heart beat by use of a stethoscope, graying of the mucous membranes, and rigor mortis. None of these signs alone, with exception of rigor mortis, confirms death.

Evaluation of Sprigged Bermudagrass Varieties in Spray Fields

By Becky Spearman, Bladen Co. Livestock Agent, **Stephanie Sosinski**, Research Technician, Crop and Soil Sciences, NCSU, & **Miguel S. Castillo**, Associate Professor/Forage Specialist, Crop and Soil Sciences, NCSU

As agents, we get asked which is the best sprigged bermudagrass variety. In 2016, a group of agents in conjunction with NCSU Forages established a five variety trial plot on a hog farm spray field in Bladen County. The field was sprigged on April 6, 2016 by Doug Heath Sprigging from Pink Hill.

We sprigged five of the most common varieties we have in NC – Coastal, Midland 99, Ozark, Tifton 44, and Tifton 85. We planted at a depth of 2-3" for all varieties except Coastal which was 1-2" based on the sprigger's recommendation. The planting rate was 40 bushels per acre. The plots were 70 x 100 feet. The soil type is a Foreston loamy sand. Establishment year, the farmer applied Direx (diuron) herbicide on April 13 at the rate of 1.3 quarts to the acre. 0.625 ounces of Cimarron (metsulfuron) and 2 pints of 2,4-d/acre were tank mixed and applied on June 4th for broadleaf weed control. The plots were chosen randomly and there were 3 plots for each variety. Since this is a hog farm, fertilizer was provided through hog lagoon effluent. The farmer irrigated according to his waste utilization plan limits and considering weather and lagoon conditions.

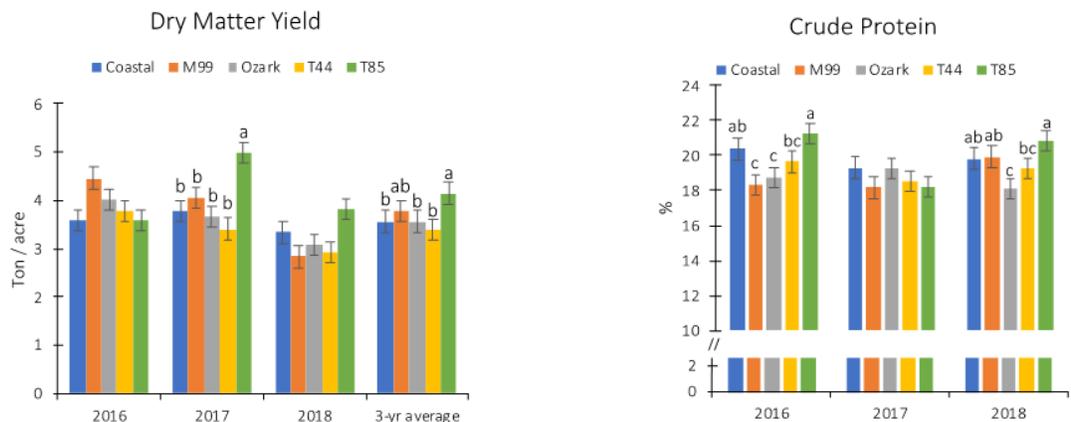


We worked with the farmer to determine the ideal time for harvest – the goal was 4 weeks between cuttings, but were flexible depending on weather, farm schedule and grass heights. Harvest intervals ranged from 26 to 45 days. Since there were 5 varieties, we went with an average of when the plots were ready to be cut. A team of research technicians and other livestock agents used a walk-behind sickle mower to clip the plots to 3-4" height. The grass was put into large trash cans using rakes. Then the can was weighed and grab samples for nutrient analysis and botanical composition were pulled. If there were weeds in that plot, we manually separated the bermudagrass from the weeds and got a percentage of bermudagrass vs weeds. The samples were analyzed at NCSU labs and NCDA & CS labs.

We harvested 4 times during each year in 2016 (establishment year), 2017, and 2018. There were some issues with bermudagrass stem maggot damage in 2016 and 2017 which played into some of the differences in yield. We also had to overseed rye during the establishment year due to Hurricane Matthew and saw some issues with overseed competition with the Ozark plots in 2017. By the end of the establishment year, all varieties/plots were fully filled in and looked great.

The total digestible nutrient concentration (TDN) was similar among varieties at 62.2%. There were moderate differences in crude protein % (CP) (ranged from 18 to 21%); however, both TDN and CP were high enough to meet the nutritional demand of a lactating beef cow in the first 90 days after calving when forage is the only source of feed. The 3-yr average results indicate that Tifton 85 had a slightly greater dry matter yield compared to Coastal, Ozark, and Tifton 44, and similar to Midland 99. There were differences in dry matter yield per year and those are also attributed to observed stem maggot damage which was less for Tifton 85 and Midland 99 in years 2016 and 2017. Below are graphs showing dry matter yield and crude protein differences. You can tell statistical differences by the letter above a chart's bar – no letter means no statistical difference and a letter means there is a difference. There were some high nitrates with some samples, but they can be managed when feeding the hay.

For more information, check out this [Research Brief](#).



Winter Housing for Small Ruminants

By: Kelly McCaskill, Livestock Extension Agent with N.C. Cooperative Extension in Moore County

With the cold, wet weather we have seen so far in NC this winter, you may be wondering if your accommodations for your sheep or goats are sufficient. Sheep and goats have basically the same needs when it comes to housing. Although a sheep does not care about getting rained on nearly as much as a goat does, they both need somewhere to at least get out of inclement weather or hunker down on cold winter nights. Here are a few tips for making sure your sheep and goats are as comfy as possible throughout the cooler months.

Some questions to ask when planning your small ruminant housing:

- What type of animal will be housed here? Ex. Hair sheep vs wool sheep-Hair sheep have less built-in protection against the elements so will require a little more assistance in keeping warm.
 - What is the maximum number of animals that will be using this structure at one time? Ex-Four adult males vs 25 kids would have differing space requirements.
 - What stage of production will this structure be primarily used for? Ex. Lambing/kidding vs weanlings vs bucks/rams- A lambing and kidding area has different overall needs than just a shelter for adult males.
 - What is the primary use of this structure? Ex. A barn for full-time housing vs a shelter in a field to provide protection from snow.
 - How severe does the winter weather typically get in my area? Ex. An open sided shed might be fine for someone in the southeastern part of the state but would not provide much protection for a farm in the mountainous western part of NC.
 - What resources are already available? Ex. An existing old chicken house that could be renovated to suit your current needs. I have observed lots of different types of structures when on farm visits and a farmers' resourcefulness never ceases to amaze me! There's nothing wrong with building a structure from scratch but don't be afraid to get creative and use the resources you have on hand.
 - Will this structure be permanent or temporary? Ex. A kidding/lambing barn vs a mobile structure for use in a rotational grazing system.
- Good ventilation-Poorly ventilated housing and can often result in respiratory disease in sheep and goats. Adequate ventilation can be accomplished either by natural (windows and doors or open sides) or mechanical (fans) means. Natural ventilation is preferred but it is better to slightly over-ventilate than under-ventilate.
 - Sturdy enough to stand up to animal wear and tear-Animals will put a structure through the ringer. Sheep will rub and scratch and goats will try to climb and bounce off of every surface they can get the hooves on. Your structure needs to be strong enough to stand up to being leaned on, climbed and nibbled on! For example, a small hoop house made of half rounds, pvc pipe, hog panels and shade cloth that works perfectly for pigs and withstands all of their scratching, would be flattened in minutes from a goat climbing and bouncing on it (Guess how I would know this J).
 - Large enough to comfortably accommodate your animal numbers-there are square footage recommendations for each stage of production in small ruminants. A ewe or doe with a baby has the highest square footage needs, and a lamb or kid would have the lowest. Knowing the recommended area for each stage of production and about how many animals you plan on housing will help you to determine your space requirements.
 - Well drained flooring-This is last on our list but certainly not the least. Having well-drained flooring, whether it be indoors or in the field is a top priority for small ruminant housing. In an enclosed structure such as a barn, bedding such as straw, hay or wood shavings can be used to help absorb animal waste and odors. The bedding should be changed out regularly to keep the area as sanitary as possible. In an outdoor structure such as a mobile shelter in a field, you should observe the pasture and select the driest, most well-drained area of the field.

will help increase the lighting inside. If you have an outdoor area added onto a structure that is dark inside, the animals will likely congregate (and poop) in the outdoor area, so keep this in mind when planning your footing for both the indoor and outdoor area.

Small ruminant housing doesn't need to be elaborate; just a well thought out, practical structure that suits your farms' unique needs. For guidance with your small ruminant shelters, contact your local Livestock Extension Agent.

General requirements for small ruminant housing:

- Both sheep and goats prefer a well-lit area to a dark area- if you are using something like an old chicken house or tobacco barn, there may not be sufficient natural light inside. Adding windows or large doors

Horses and Mud

By: Taylor Chavis, Livestock Extension Agent with N.C. Cooperative Extension in Robeson County

We have been seeing a lot of rain and more is expected in the forecast. If you own or already have horses, below are some factors to consider that will help to minimize mud and other negative factors on the farm:

- Access pasture drainage. Examine the area that you plan to keep your horse(s) and determine that there is appropriate drainage.
- Think about gate placement. Mud will occur in high-traffic areas and places that horses will naturally gather. Shifting gates away from these areas will help to minimize mud.
- Consider the amount of horse traffic. If horses can be put in a stall for a certain amount of time to allow the pasture to rest it will help to minimize soil compaction, overgrazing, and the amount of mud.
- Use pastures to help manage water flow. Making sure that there is plenty of vegetation in the pasture will act as a natural filter to slow water down, preventing soil runoff and creating bare spots.
- Manure management. Consider removing manure from high-traffic areas that can turn into mud.
- Footing materials. Installing footing materials like sand, gravel, or wood chips in high traffic areas can help to minimize mud. Sand is comfortable for the horse. Gravel is good draining and provides firm support, but larger than 5/8 inch can be uncomfortable for the horse to stand on. Wood chips are also a stable material, but will require more frequent placement as they decompose.

Rain and associated factors, like mud can cause problems in horses. Rain can cause rain rot. Rain rot, also called rain scald, is a skin condition that is caused by bacteria that live in the outer layer of the skin. The bacteria multiply in damp, humid conditions. Rain rot can cause painful, crusty scabs that when removed pulls clumps of hairs away from the skin, leaving bald spots on the hips, face, back, and other areas of the horse.

Below are some tips to avoid rain rot and the possibility of spreading rain rot:

- Don't share tack, equipment, or blanket between horses you suspect may have rain rot
- Keep infected horses isolated
- Minimize exposure to bugs and bacteria

- After treating infected horse(s), wash hands thoroughly
- Have a covered area for your horse
- Keep coat clean especially for horses turned out more than others

Muddy conditions can cause problems, like thrush, hoof abscesses, hoof cracks, and pastern dermatitis. Thrush is a bacterial and fungal infection of the soft tissues of the foot that results in the degeneration of the frog, left untreated it will penetrate the sensitive layers of the foot and cause lameness. Hooves will absorb water and become very soft in wet and muddy conditions. If the feet dry out quickly, the hoof may contract rapidly, resulting in hoof wall or sole cracks. Hoof infection and subsequent abscesses may occur when bacteria in the environment penetrate the cracks. The soles of horse's feet contract and expand, as does the hoof wall, but the sole periodically exfoliates. Persistent muddy conditions and wet-dry cycles may cause some horses to lose more sole than is normal, resulting in thin, sensitive soles. Overgrown hooves are at greater risk for cracking and infection.

Below are tips to avoid hoof-related problems:

- Clean horses' legs regularly and keep the hair around the fetlocks trimmed.
- Clean the feet often and provide regular, balanced trimming.
- Remove soiled bedding materials, manure, and leftover hay. Removal of waste material will decrease surface water contamination, reduce harmful bacteria, and provide a healthier environment for the horse to rest in.
- Rubber mats or large wood chips maybe used to prevent muddy conditions.

If you have questions, please contact your local Livestock Extension agent.



2020 4-H Farm Credit Virtual Showmanship Circuit Results

By: Jamie Warner, Livestock Extension Agent with N.C. Cooperative Extension in Montgomery County

This year's 4-H Farm Credit Showmanship Circuit looked much different than it has in the past. Instead of competing in a ring, face-to-face at various County Shows in the region, showmen participated virtually by submitting videos of themselves showcasing their animals and formulating an answer to an assigned prompt. Five prompts were issued and a minimum of three were required in order to finish and place in the circuit. After each video was submitted, judges reviewed them and placed them based on the participant's answer to their assigned question/s and their presentation/handling of their show animal. Judges also provided constructive feedback in order to help participants with their next submission.

The Virtual Awards Banquet was held October 29th via Zoom and marked the end of a phenomenal, albeit unusual showing season for the over 50 youth involved from a 17 county area.

Recognitions were as follows:

Junior Goat:

- 1 – Katelyn Hewitt
- 2 – Gwyneth Whitfield
- 3 – Brayana McGhee

Intermediate Goat:

- 1 – Hattie Jo Powell
- 2 – Laura Jessup
- 3 – Addison Farris

Senior Goat:

- 1 – Savannah Shepherd
- 2 – Erin Burns
- 3 – DeLani Reep

Junior Lamb:

- 1 – Brayana McGhee
- 2 – Charlotte Payne

Senior Lamb:

- 1 – Erin Burns
- 2 – Noah Beeson
- 3 – Haley Barnhardt

Junior Heifer:

- 1 – Jonathan Scarlett
- 2 – Charlotte Payne
- 3 – Heidi Spainhour

Intermediate Heifer:

- 1 – Caroline Scarlett
- 2 – Maddie Carpenter
- 3 – Mazie Bunn

Senior Heifer:

- 1 – Lindsay Seitz
- 2 – Lynlee Martin
- 3 – Karly Smith

Intermediate Lamb:

- 1 – Addison Farris
- 2 – Laura Jessup
- 3 – Ana McAuley

The circuit would like to thank their sponsors, Carolina and Cape Fear Farm Credits for another year as well as Allison Walker, Coordinating Agent for the circuit and Chastity Elliott, Support Specialist and Coordinating Assistant. Special thanks to our judges this year (Dr. Travis Burke, Goats; Ron Hughes, Sheep and Richard Melton, Cattle) for all of their time and feedback. We also owe a huge thank you to Shea Ann DeJarnette for arranging this year's premium money which was given by The Robeson Regional Agricultural Fair, Cape Fear Farm Credit – Lumberton Office and the City of Lumberton Parks and Recreation Department. As a circuit staff, we are looking forward to the new show season and are hoping for a more "normal" 2021. Happy New Year!

Tips for Successful Herbicide Applications

By: Randy Wood, Livestock Extension Agent with N.C. Cooperative Extension in Scotland County

It seems foolish to be talking about herbicide applications in the dead of winter, but we are only a couple of months away for our first herbicide applications for the year. Here are some tips for successful herbicide applications that every grass farmer can use.

Pre-emergent sprays, although costly, are effective.

For years grass and forage herbicides were pretty much post-emergent only. Now we have a couple of good pre-emergent options in our tool kit that while not especially cheap, can be very effective for certain troublesome weeds. Prowl H2O and Rezilon (a new product for 2021), both offer good to excellent control for annual grasses. Italian Ryegrass, Crabgrass and Sandspurs are just a few weedy grasses that we do not have very effective post-emergent options for. Pre-emergent applications will give better season-long control for these weeds. **The golden rule for pre-emergent success is don't be late!** If these weeds have already germinated, your control rate will drop to 0. The other unique thing about these products is they have to have a rainfall to activate. This makes finding a good day to spray a little bit of a challenge, so be ready to go when the weather forecast is in your favor.

Post-emergent herbicides (both broadleaf and grassy weeds) should be sprayed earlier rather than later.

Broadleaf weed sprays need to take place relatively early in the growing season once weeds emerge. Most broadleaf weeds are easier to control when they are sprayed early in the season when they are small and have less root system to survive. Iron Weed, or Arrowleaf Sida, for example will be almost impossible to kill late in the season once it is fully established regardless of how high a rate you use. In addition to being more effective, killing the first crop of weeds will reduce the amount of seed that will be produced for next year. Spiny Amaranth is the most obvious weed that comes to mind where controlling them before they start to seed-out will pay big dividends for long-term success.

Picking the right day to spray.

Farmers are not the most patient people in the world, and with good reason. No profession understands that time is a valuable thing like a farmer. Most farmers get up every day needing to get about 10 major jobs done, and nothing is more frustrating that needing to go spray your fields and the weather is not right. Forecasted rain, winds that start blowing at 7:00 am and temperature inversions are just a few of the

ways mother nature can tell us to leave the sprayer under the shed until tomorrow. There are other long term weather patterns that affect us as well. Weeds that are in a drought stage will not respond to herbicide applications near as well as a healthy, actively growing weed will. Early spring "burn down" sprays will be much more effective if you wait until the 3rd or 4th day of a warm up and not the 1st day it gets warm. In general, if you are really on the fence whether or not to spray, you probably need to wait.

Read the label!

Every farmer that has been through a pesticide class has heard this statement countless times. The thing to remember is you have heard this phrase repeatedly for a reason. Companies put countless hours of research and development into their products and know the do's and don'ts of getting their products to work effectively. There are also chemistry interactions that take place in a spray tank that you and I will never understand. When the label calls for a non-ionic surfactant to be added, or to not mix with liquid Nitrogen for best results, it is on the label for a reason. What spray adjuvants to add, what a product can and cannot be mixed with, and what environmental conditions to avoid are major issues that every label will have on it for one big reason. The company wants their product to work as advertised.

Spraying is both time consuming and expensive when it works correctly. Spraying for no effect is something no farmer wants to deal with. Preplanning, taking the time to read the label and waiting for the right day are a few basic things you can do to avoid this.

