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North Carolina Cooperative Extension is a strategic partnership comprising NC State Extension, The Cooperative Extension Program at N.C. A&T State University, USDA-NIFA, and 101 local governments statewide. Extension professionals in all 100 counties and the Eastern Band of Cherokee translate research-based education and technology from our state's land-grant universities, NC State and N.C. A&T, into everyday solutions that enrich the lives, land and economy of North Carolinians. Extension specializes in agriculture, youth, communities, food, health and the environment by responding

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.

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Please take a moment and sign up to receive the bi-monthly newsletter via email. In an effort to reduce postage and printing costs, we are asking that everyone with an email account sign up to receive the newsletter, along with any other news and updates, via email. We thank you for your cooperation and help with this. To sign up just go to the Johnston County Extension website at: johnston.ces.ncsu.edu and click on **animal agriculture**. When signing up, please indicate any and all species of interest. Occasional news related to one particular species may be sent (Ex: upcoming bull sales to Beef Cattle list.) You will be able to unsubscribe yourself at any time.

**Forage Management Tips:
September**

Fertilize and lime cool season grasses.
Keep Grazing pressure on the summer grasses and completely use them before grazing cool season forages.
Continue to watch for armyworms on established and seedling stands of forages.
Overseed or no-till winter annuals onto summer perennial grass after they have been closely grazed. Make a winter feed supply inventory so deficiencies can be avoided now (by purchasing hay or planting more winter pasture).

October

Finish using summer grasses before grazing the cool season ones.
Overseed bermudagrass and other warm season grasses with winter annuals such as rye if you haven't already done so.
Sample soils to be overseeded or planted next spring so the limestone can be applied early enough to react; two to four months are required for lime to effectively neutralize soil acidity.

Upcoming Events and Reminders:

NC State Fair is October 12-22. Full schedule of livestock shows at ncstatefair.org

Johnston County Livestock Festival Supper is November 17. All-you-can-eat bbq, beef, sweet potatoes, collards, chicken pastry, chittlins and more. \$12/ticket at the door or in advance from youth livestock exhibitors.

Wilson Pork Conference will be the evening of November 21 at the Wilson County Extension Office. Program is still in planning, but should offer 2-3 hours of AWA Continuing Education credits.

Soil Sample fees begin December 1. Routine soil sample will cost \$4/sample for those samples received Dec-March. If bringing samples to the Extension Office, drop off several days before the end of November to allow time for delivery to Raleigh.

For any meeting in this newsletter, 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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Animal Waste Management

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

Initial 10-hour Animal Waste Operator Classes (OIC)

Duplin County Extension Office (Kenansville) - October 24 & 25 from 10 am - 4 pm. Contact Wanda Hargrove at 910-296-2143 to register. Cost is \$35 for manual and \$25 for exam application. *Exam date is December 14th.

OIC - Continuing Education Class

Date	Location	Time	To register:
November 30	Bladen County	9 am - 4pm	910-862-4591 or http://go.ncsu.edu/bladen6hr2017
December 5	Greene County	9am - 4pm	252-521-1706 or eve_honeycutt@ncsu.edu
December 8	Lenoir County	9 am - 4pm	252-521-1706 or eve_honeycutt@ncsu.edu

New tools for waste management

Recently the NC Animal Agriculture Program Team was able to procure some new equipment that will benefit animal waste operators across the state. Extension Agents across the state now have access to calibration kits and sludge measuring tools that can be used to assist farm owners in getting these procedures completed every year.

The new sludge measuring tools include a remote control sonar boat that maps a digital image of the lagoon bottom. The map also includes measurements from thousands of data points across the lagoon bottom that can help in determining sludge levels. While this technology is not new, it is the first time that Extension Agents across the state have had access to its use. Farmers that need a sludge survey performed can request assistance from their Extension Agent and use the boat for \$50 per farm.

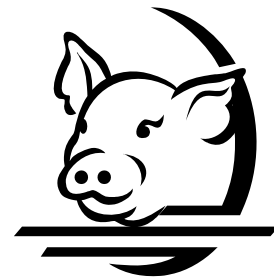
Additionally, there are plans to purchase new tools that can measure sludge with the same accuracy, just a different method for recording the data. The Deeper Smart Sonar PRO+ is like a bobber that floats on the water's surface and can be transported around the lagoon with either a fishing rod or a remote control boat. The bobber uses GPS technology along with

sonar and Wifi to transmit a signal back to a smart phone or tablet to view the map of the bottom. Details for these tools will be released at a later date.

Agents across the state are working to create new recertification classes over the coming years. If you have any ideas for topics that you would like to see covered, please contact your Extension Agent.

REMINDERS:

- The bermudagrass window will be closing soon. Be sure to maximize your bermudagrass PAN before that window closes.
- Plan to spray for cool season weeds in the FALL. Fall herbicide application will get much better control of the target weeds.



Hay Directory

North Carolina Department of Agriculture's Hay Alert is at <http://www.agr.state.nc.us/hayalert/>. Producers can call the Hay Alert at 1-866-506-6222. It lists people selling hay or looking for hay to buy. It is free to list your hay.

Pesticide Labels: What You Need to Know

By: Zack Taylor, Agriculture Extension Agent with N.C. Cooperative Extension in Lee County

Pesticides are a necessary part of all agricultural operations. Whether combating disease, controlling weeds, or controlling damaging insects, we all use pesticides around the farm. Think back to the last time you used a pesticide. Did you use a resource like the Agricultural Chemical Manual to select the right product? Or maybe you called your agent, and asked for a recommendation. Before applying the product, did you take time to read the entire label?

All too often I find that the answer to that last question is “no.” When you purchase any pesticide, you are entering into a binding contract with the company who makes that product and the EPA, agreeing that you will use that product exactly as labelled. Labels provide different information to different people. To the company, they are a license to sell. To the EPA, they are a way to control distribution, storage, sale, use, and disposal. To a physician, they provide information on the proper treatment for poisoning cases. Finally, to you, the user, they provide information on how to use the product correctly and safely.

Pesticide labels can generally be broken down into nine parts. First, the product name or trade name. This is the name by which the product is marketed, and may be a brand name or a generic. Second, the type of pesticide will be listed. This tells you if the product is a herbicide, fungicide, insecticide, rodenticide, etc. Third, you will find the use classification. If this is a general use product, it will not be stated on the label. However, a restricted use product will state “Restricted Use” on the first page of the label, along with a reason why the product is restricted use. Remember, restricted use products require a pesticide applicators license to purchase, and must be applied by, or under the direct supervision of, a licensed applicator. Fourth, you will find the ingredient statement. This tells you what percent of the product is made up of the active ingredient, and may also give you information such as pounds of active ingredient per gallon. Concentrations sometimes vary by formulation between generics. Fifth is the EPA registration number and establishment number. These numbers are unique to each pesticide, and are important identifiers for record keeping. Sixth, the label will state “Keep Out of Reach of Children,” and will also have a signal word, such as “Caution,” “Danger,” or “Warning.” Signal words relate directly to the potential toxicity of the product, with “Caution” being the least toxic, and “Warning” being the most toxic. The seventh item

you will find will be first aid information and on some products a note to the physician. This gives you information about what to do if a product comes in contact with your eyes, skin, etc. and has information on how a poisoning case should be treated by a physician. Remember to take the label with you if you go to the emergency room for treatment due to pesticide exposure. It may contain valuable information that can help save a life.

The eighth and ninth sections make up the majority of the label. The ninth section is what I find most people flip to first, and is where you will find the direction for use, including rates, pest controlled, etc. However, don’t be so fast to skip over the eighth section, where you will find precautionary statements, which include hazards to humans, animals, and the environment, any safe handling requirements, and information on Personal Protective Equipment (PPE). Following the proper PPE requirements ensure the health and safety of both you and your family. All products will require long sleeved shirts, long pants, socks, and shoes. This is the minimum required to reduce your exposure to pesticides, and remember to wash these clothes separately from the family laundry. Most labels also require chemical resistant gloves or aprons, and some may specify a specific type of material. You may find that a product also requires protective eyewear or the use of a respirator. Some agricultural chemicals have been linked to types of cancer and Parkinson diseases, but it has been shown that your risk can be greatly reduced by following proper PPE requirements.

Finally, you may have heard about new “Worker Protection Standard” (WPS) rules which were implemented January 1, 2017. Among several new requirements, these rules require that when using a product which requires a respirator, the applicator must be FIT tested and medically cleared to use that respirator. This includes N95 particle mask, what many of us refer to as dust mask. Many common products require respirators, including paraquat (brand name Gramoxone), and acephate (brand name Orthene). Some general use products also require a respirator, so you may still need to be FIT tested even if you are not a certified applicator. These rules have currently been delayed, to allow time for education about the new rules and to allow growers more time to meet the requirements. If you have questions about the WPS rules or FIT testing, talk to your agent or pesticide inspector.

Managing 1st calf heifers

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

1st calf heifer development is one of the most important management skills that a cattle farmer develops. When we calculate how much is invested in a beef female by the time she weans her first calf, and survey the potential problems she will be facing during this time, it is critical that you have a plan in place to help your heifers have a long and successful career on your farm.

Before she ever weans her first calf, you need to realize that you have already invested a lot of money in this female. You passed up the opportunity to sell her as a feeder calf a year and a half before (that's \$900-\$1300 in today's market), the feed & grass she has consumed during this time, bull expenses to get her bred, any medical related expenses and your time and labor. In short, you have spent a very healthy sum hoping that she will make you a profitable return on your investment several years down the road. No matter how you feed your cows and run your business, even the most optimistic cattle farmers cannot see how her first calf even comes close to making your money back. Most farms will tell you that it's probably her 3rd or even 4th calf before she makes herself profitable.

There are three major obstacles that a first calf heifer must overcome before she settles in as a productive brood cow.

1. Get her bred initially
2. Get the first calf born alive and nursing
3. Get her bred back as a two-year-old.

These three stages are the difference in culling her for a loss early in her productive life or having her become a profitable cow for years to come.

How to manage your two-year-old heifers?

Heifers need to be bred and calve 2-3 weeks ahead of older cows

Virgin heifers should be physically big enough and sexually mature enough to be bred 2-3 weeks before your mature cows. This will help with two things. One, it will give you more time to observe your heifers when they calve the following year. Hopefully you will have at least ½ your two-year-olds calved-out by the time your mature cows start to calve. The second thing this will accomplish is that this will give your two-year-olds another heat cycle to breed back the following year. Remember that your two-year-olds will go from their most fertile point on their lives as virgin heifers to their most infertile as a lactating & growing two-year-old cow. One more heat cycle with the bull is a big advantage in getting her re-bred.

Keep your two-year-old separate from your mature cows.

Two-year-old heifers are smaller and much more prone to be bullied away from the hay feeder by older cows. The last thing you want is for a milking heifer to not be getting enough hay and be further stressed while she is raising her first calf. She will need all the access to feed she can get this first year raising a calf.

Heifers need a higher level of nutrition than your mature cows

If you are going to spend money on better feed resources anywhere on the farm, make it your milking heifers. They are still growing, milking to raise a calf, and hopefully trying to breed back. Having a supplemental energy and protein source available to them will pay big dividends in both weaning weights and re-breeding percentages. What this specific supplement should be (lick tank, protein block, cottonseed, pelleted feed) is open to debate, but the necessity for feeding your lactating heifers is not.

What to do with an open two-year-old?

There is a little debate among cattle farmers on what to do when a two-year-old fails to breed back after calving. Most traditional large-scale farmers will tell you there is no decision to be made. You cull her out of the herd after weaning, period. I can certainly understand that thinking. You have already failed to make money with her and keeping her on the farm open for a year makes your break-even point that much harder to reach. Finally, if she fails to breed back the next season it multiplies your loss by that much more.

On the other hand, as discussed above, breeding back as a lactating two-year-old is probably the hardest thing a cow will physically accomplish in her productive life. Often an open two-year-old will breed back the next year and never miss again. The other argument for this scenario is that if you cull her to make room for a yearling heifer the next year, is that you don't know for sure that an unproven virgin heifer will breed the first time, or have a live birth, or accept the calf to raise. With an open two-year-old that bred as a heifer you can feel moderately confident that she be able to breed the following year and raise the calf. There is no clear-cut answer to this argument. Each farm has to inventory its feed supply, pasture space and potential replacement heifer supply before making this decision.

Developing and managing your lactating heifers is a little frustrating and time-consuming. But the dividedness it will pay will be worth it if you can keep these females in the herd for years to come.

Understanding Equine Acupuncture

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

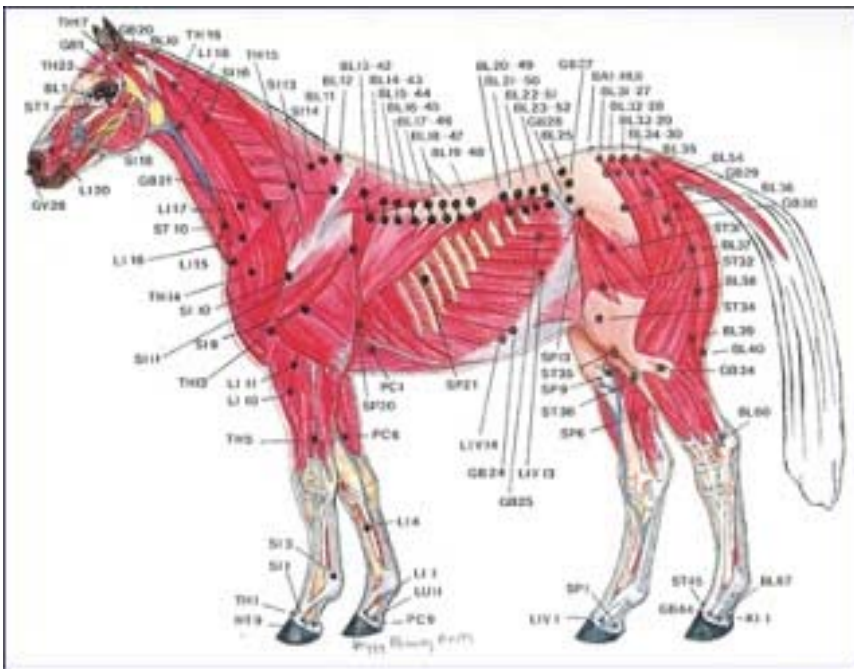
Acupuncture is the practice of stimulating acupoints (specific points on the body loaded with nerve cells, lymphatic and blood vessels) by the strategic placing of very thin needles. Stimulation of acupoints can be achieved one of several ways including the dry-needle technique, electro-acupuncture, aqua-acupuncture, pneumo-acupuncture and a few lesser known forms.

Dry-needle acupuncture is when a dry needle is inserted to the acupoint. This is the most recognized acupuncture technique. Electro-acupuncture uses dry-needles attached to a machine that applies a controlled electric shock and is generally considered more effective than the dry-needle method alone. The aqua-acupuncture approach injects soluble, sterile liquids (water, saline or a vitamin solution) into the acupoint which acts as the constant pressure needed for acupoint stimulation. Pneumo-acupuncture uses small amounts of purified air right under the skin, above the acupoints, creating effective stimulus.

Research is constantly being done on “alternative” therapies to traditional veterinary medicine but so far clinical trials have suggested that equine acupuncture improves a variety of conditions including but not

limited to infirmities of muscles and bones, neurological disorders, gastrointestinal ailments, fertility, endocrine diseases, dermatological issues, a myriad of other chronic issues as well as pain management and geriatric horse health. While some effects are felt right away or soon after the initial treatment, additional treatments are almost always needed. Of course, the total number of treatments required depends on factors such as age of the animal, duration of symptoms and whether or not it is a degenerative problem that will require maintenance treatment sessions for the rest of the animal’s life.

For more information about Acupuncture Practitioners in your area, contact your local Cooperative Extension Office. It is also recommended that you speak to your Large Animal Veterinarian before making any changes to or adding therapies to your horse’s existing health care regimen.



Accupoints



Dry Needle



Electro

Finding your Market in Small Ruminant Production

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

The sheep and goat industry has seen a huge increase in numbers over the last decade. Lots of farmers find small ruminant production attractive because they require less land than cattle, can be handled and worked without expensive handling facilities and are just so darn cute, however, finding your market can be a big challenge.

Most sheep and goat producers in this area raise their animals for meat. The first step in finding your market is making sure you are producing as good of a product as possible. This means making sure you have the right breed for meat production. The difference between a meat breed and a dairy breed of goats is like the difference in a pit bull and a poodle, so this is very important for your final product. The most common meat breed of goat is the Boer goat but due to their low parasite tolerance and general un-thriftiness a lot of producers are incorporating other, more hearty breeds, like Kiko and Savannah into their herd. In sheep the line is less clear between meat and other uses, with a lot of popular breeds being dual purpose for meat and wool. There is nothing wrong with using a wool sheep in meat production but unless you have a market for the fleece, which is a challenge of its own, there is no reason to spend the time and money shearing your sheep. Hair sheep have a hair coat rather than a wool coat and require little to no shearing. The most common wool sheep breeds are Dorset, Suffolk and Columbia and the most common hair sheep breeds are Katahdin, St. Croix and Dorper. There are lots of other breeds of sheep and goats available and crosses of breeds are always a good option. You should do some research on the pros and cons of each breed to determine what will work best for your farm.

After selecting your breed it is important to make sure you have an outlet for your product in your area prior to purchasing any animals. The questions you need to ask yourself are: Do I want to sell whole, live animals? If so then do you want to sell them straight to the consumer, directly off of your farm or take them to auction? Generally both of these options, especially auction, are going to be your lowest money maker. Do I want to sell packaged meat cuts? If so, do you have a processor in your area? If the processor is close enough to where you are marketing your product, you can have your customers pick

their product up directly from the processor. If you decide to distribute the product yourself, you will have to acquire a Meat Handler's License. The Meat Handler's License is easy to get and maintain and your local Cooperative Extension office can help you get started. Do I want to sell meat cuts off of my farm or at a farmers market? Both of these will require a Meat Handler's License. If you are selling from your farm, the internet and social media are a great way to advertise and sell your products. Just be aware of the restrictions on where your meat can be sold (NCDA regulated processing facility-product must be sold in NC vs. USDA regulated facility-product can be sold all over the US). Famer's Markets are great places to sell local meat but you should factor in your time or paying someone else to run your booth and how much it is going to cut into your profit margin. Are there local restaurants that I can sell to? With the local food movement being what it is, this is often one of the most profitable ways to move your product.

Once you have answered your questions for what your personal goals for your products are you should make sure the people in your area are even interested in purchasing your product. Most people would give lamb a try but goat meat is something that we Southerners are still having a hard time getting on board with. Sending out a poll via Facebook, asking around to your friends and family and talking to patrons at the farmer's market are all good ways to get a feel of how easily you will be able to sell your product. There are also certain ethnic groups and religious holidays you can market towards which your local Livestock Extension Agent will be able to help you identify.

As always contact your local Livestock Extension Agent for further help on marketing your sheep and goats.

Tips for the Show Season

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

September and October bring cooler weather, county fairs, and the opportunity to show off your livestock. Animals have been purchased, fed, trained, groomed, clipped, washed, etc. for weeks. As our calendars fill up with circuit shows, county fairs (eventually leading up the NC State Fair), and all the other tasks for the fall season, it is time to hit the road and the show ring to see how all that hard work and investment will pay off. Below are just a few tips for the show season and a link for a schedule of the NC State Fair Livestock Competitions.

Tips for the Show Season:

Practice makes perfect. Exercise helps build endurance for a show and practice makes perfect, so practice at home with your animal as much as possible. You should practice walking around, setting up, and watching the judge as if you were in a real show. Learn the animal and the animal's flaws and how to best present them so that those flaws are somewhat hidden. It also helps to have other animals around, as well as some kind of background noise. This prepares your animals for a fair atmosphere so that they won't be in shock when they see and hear unfamiliar things.

Prepare ahead of time for the show. Prepare your trailer, show box, feed, show clothes and anything else you might need at a show the night before. One of the worst things that can happen is to get to a show and realize you've left some important piece of equipment or a convenience item at home or at the barn. Adding that kind of stress to the show ring jitters can really create an unpleasant experience. It maybe helpful to create a checklist of what you will need. It can really help in the days leading up to a show. Remember your health papers, if required.

First things first at the show. Animals should be weighed and checked in, feed them and get them clean. After your animals are ready, you get dressed. Knowing the appropriate dress for the show ring is key. You should dress neatly with clean jeans or slacks and a nice button-down or polo shirt. No camouflage shirts or t-shirts should be worn, and your shirts should be tucked in. Hats should be left in the truck and don't forget your belt and boots! It's showtime!

In the ring. Take a deep breath and enter the ring with confidence. While in the ring, stay calm and just pretend you're practicing at the barn. Keeping yourself calm keeps your animal calm, therefore they will work better for you. Remember to keep your animal set up and keep your eye on the judge. It is also important to make sure you follow the animal in front. Even if the people between you and the first person are in different spots, you should always be in line with the first person. Also when on the profile, make sure you're in line with the first person; you don't want to be out further than everyone and hide someone else's animal. Know your project. The majority of judges want to know that you know your project, as well as the industry, so you will probably be asked some questions. Know everything about your animal, from what it eats, to what kind of stomach it has, to what kind of diseases it can get. You can call your Extension agent for help with preparing for questions the judge may ask you. Be a good sportsman. Not only do showmanship skills matter, but so does sportsmanship. Although the ultimate goal is to win, showing livestock teaches you that's not always the outcome.

NC State Fair Livestock Competitions schedule can be found at the following link: <http://www.ncstatefair.org/2017/Competitions/Entering/documents/LivestockJudgingSchedule.pdf> For more information, please contact your livestock agent.

Good luck this show season!



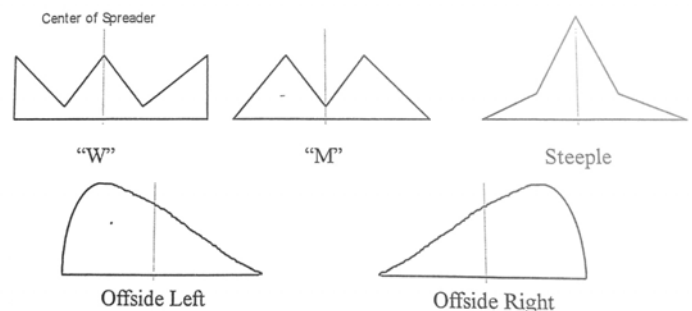
The Importance of Spreader Calibration

By: Richard Goforth, Area Poultry Agent with N.C. Cooperative Extension

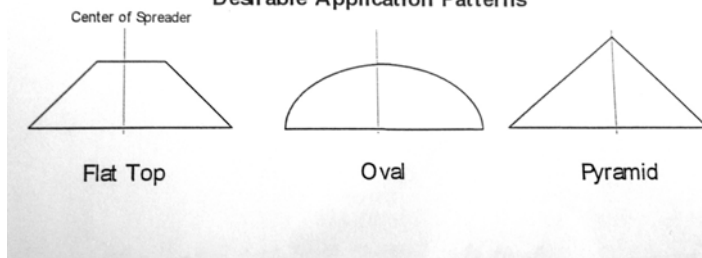
Spreader calibration is essential for accurate application rates of poultry litter and other solid animal manures or fertilizers. Proper calibration will ensure your crop receives the intended amounts of nutrients so it has the best chance to succeed and protects water quality by eliminating over application that increases the chances for nutrient runoff and leaching into the water table. Calibration can not only help make sure you are applying at the correct rate but will also address spread patterns to reduce or eliminate striping from excess or deficient nutrients in a field. Every spreader has a different pattern and overtime that pattern may change from wear and tear on equipment. Determining the spread pattern of a unit will allow producers to adjust the equipment to improve the pattern and or make allowances for any deficiencies during application by adjusting several factors. The swath spacing, travel speed, gate opening, and feeder rate can all have an effect on spreader patterns. Because particle size and weight is variable in most solid fertilizers the distribution of material in the spreader swath will always be uneven across the swath but by understanding the pattern, spacing of spreader passes through a field can be adjusted to create a much more uniform distribution. By overlapping passes at the right spacing we can get close to even distribution when the spreader produces any of these patterns.

Some spreader patterns alert us to equipment issues that can be adjusted or improved by repairing or replacing worn spinners, bearings, gates and dividers. When we see patterns with heavy deposits directly behind the spreader this often indicates the spinners are too close or too far from the gate allowing litter to fall directly behind the spreader. There also may be an issue with the gate opening or speed of the feeder belt or chain that is dumping too much litter on the spinners at one time. If patterns show heavier distribution to one side of the spreader that may indicate a worn or bent spinner issue or a divider that is not distributing litter equally to the spinner or spinners.

Undesirable Application Patterns



Desirable Application Patterns



If you would like to learn more about calibrating your spreader please watch this video link of a calibration demo <https://www.youtube.com/watch?v=3ftmXcYZzKs&feature=youtu.be> or contact your county livestock agent or Area Specialized Poultry agent.

In addition to answering questions they also have calibration kits available for loan to assist producers to complete a proper calibration of their spreaders. This link will also provide a publication with calculations and more details on making adjustments to obtain spreader patterns and application rates.

<https://content.ces.ncsu.edu/weight-area-method-spreader-system>



Striping from uneven litter