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**N.C. State Fair Livestock Update**  
Fair runs October 17-27 of 2019

- Junior Market Lambs, Barrows and Market Goats must be nominated online. These animals must also be tagged in by August 10.
- Online entries begin August 1 through September 15. Animals must be entered online even if they have been nominated and tagged.
- Tag-in Locations for Market Lambs and Market Goats include August 6 in Tarboro, August 7 in Clinton, August 8 in Raleigh, and August 9 & 10 at the AGR Livestock Show in Smithfield. All lambs and goats must have Scrapie tags.
- Remember Premise ID is required to enter livestock in the state fair. Premise codes are available from the NCDA&CS Veterinary Division.
- Performance Market Hogs must be weighed on test between July 22 and 26. Call your Extension Agent for weighing.
- New this year*- The Feeder Calf Show at the state fair will be a Junior-only show. Therefore, the feeder calf and pen of three shows will be open to NC residents 21 years of age and younger as of January 1, 2019.
- There has been a White Face Influenced Ewe Division added to the Junior Ewe Meat Breeds Show.
- The Katahdin breed has now been added to the Open Meat Breed Sheep Show.
- A division for Dual-Coated/Primitive Breeds has been added to the Open Wool Breeds Sheep Show.
- This year all hogs may return home from the fair. Please designate at check-in your intentions. Any hog still in the barn after 6 am Sunday will be loaded on the packer truck.

**Waste Management Updates**

I am available to update Waste Management Plans for swine operations, having recently received Technical Specialist Designation. If you need an update to your plan, please call or email me. I will need your old plan, crops rotation plans, maps and recent soil sample.

**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.

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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## Animal Waste Management

### Animal Waste Reminders

By: Amanda Hatcher, Livestock Extension Agent and County Director with N.C. Cooperative Extension in Duplin County

Don't forget to plan for calibrations and sludge surveys for the year. Calibrations are due every other year and sludge surveys are due each year unless you get an exemption from NC DEQ. Soil samples of each field that receives animal waste must be done once every three years.

If ownership, the designated operator-in-charge, an address of the owner changes:

If a change of ownership occurs, submit a change of ownership form to DEQ showing the changes along with a site map. Send new addresses for owners to DEQ as well.

If a change of operator-in-charge occurs, submit a Designated Operator-in-Charge form to WPCSOCC (Water Pollution Control Systems Operator Certification Commission) and send new addresses for OICs to WPCSOCC.

For copies of the forms plus other information, contact your Extension agent or go to Extension's animal waste portal at: <https://animalwaste.ces.ncsu.edu/animal-waste-operator-resources/> and look under "Record Keeping Forms".

### State Permit Renewal

Here are a few questions I have been getting about the renewal process:

When can I expect my new permit to come in? Expect a Certificate of Coverage and either a copy of the new permit or a link to the permit on the website in September. The new permit will be effective October 1, 2019.

What happens if I forgot to send something in with my renewal application? If NC DEQ missed getting something from your renewal package or did not get any of your renewal items or if the item is incomplete (such as missing a page), NC DEQ will contact you with the items they are missing. You can also call me and I can help you to find out if there are items missing.

What does the new permit look like? The new per-

mit is posted on the NC DEQ website at: <https://deq.nc.gov/about/divisions/water-resources/water-quality-regional-operations/afo#finalized-2019-general-permit>:

Then scroll down to "Swine Permit" to view a PDF of the permit.

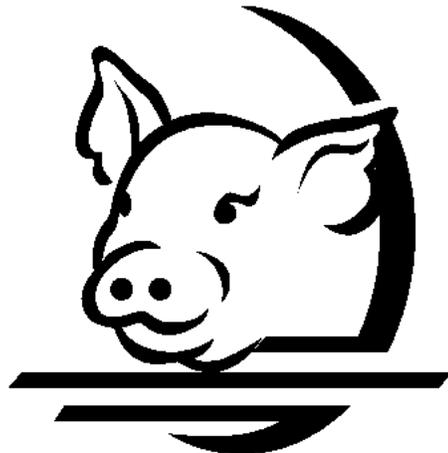
Duplin County will be offering classes in August to go over the details of the permit and compare it to the current permit. More information will follow later.

### Hurricane Season Reminders

June 1 is the official start of Atlantic hurricane season. Here are some reminders:

Be prepared – have supplies ready including emergency food and water, first aid, batteries, common repair items such as tarps and fencing materials. Ready generators now and decide how much fuel you need.

Remember feed rations for animals, kept in a safe dry place. Keep in mind that wild cherry tree leaves that are wilted can become a cyanide poisoning hazard – cleaning out fence rows now could be helpful in managing this hazard. Make sure animals are well-identified and keep thorough records so you can quickly account for livestock. In flood-prone areas, plan now to move portable items to higher ground. Contact Soil & Water Conservation if you need an emergency burial plan site mapped on your farm. Whatever the damage or impact of the storm, keep records of these so that reports can be made in a timely manner.



## Managing Bermudagrass: Cutting Hay Not Corners

By: Anthony Growe, Livestock and Row Crops Extension Agent with N.C. Cooperative Extension in Richmond County

As many producers in the region gear up to make their second cutting of bermudagrass hay, we need to be thinking about some fertility management practices as we go forward in the season. So far this year, I have received a few calls about thinning or patchy stands of bermudagrass in hay fields. In all three cases, no animal waste was used and the producers were using nitrogen-only fertilizer sources such as a 30 percent liquid UAN or granular 34-0-0. After submitting soil samples and looking over the reports, the potassium (potash) indices for all 3 fields were below 25. These fields were experiencing decline due to inadequate potassium levels. It's important to understand that when we cut and bale a hay crop then feed it in another location, we are removing soil nutrients from that particular hay field. Applying a nitrogen fertilizer will encourage growth but potassium is not being replenished. One ton of dry bermudagrass hay will remove roughly 50 pounds of potassium and nitrogen, and about 12 pounds of phosphorus so over time soil can become severely deficient. This situation highlights the importance of managing soil nutrient levels by applying the recommended amounts calculated from a soil test report. Typically, the recommended amount of potassium is put out with phosphorus in the spring but if levels are low it's best to apply it as soon as possible.

For nitrogen fertilizer, it is best to make 3 split applications of the total recommended rate (usually 180-220 pounds). For example, if your soil report recommendation is 180 pounds of nitrogen per acre then you would apply 60 pounds 3 times throughout the growing season. The first nitrogen application should be made mid to late April and the other 2 applications after the first and second cutting. For the producers that use poultry litter as a fertilizer source, North Carolina State University recommends applying half in late March and the other in July. When using poultry litter, you need to know the nutrient levels in order to apply the correct amount of nitrogen, phosphorus and potassium to your bermudagrass fields. Obtaining a waste analysis report of the litter will allow you to calculate how many tons or loads to

apply to a field. A sample of the litter can be submitted to the NCDA and analyzed for an 8 dollar fee. Like synthetic fertilizers, over-application of poultry litter can lead to nitrate leaching into groundwater which is harmful to the environment. Having your soil tested for nutrient recommendations, obtaining a waste analysis report and proper spreader calibration are good practices to minimize our environmental impact from applying fertilizers. If you have not taken a soil sample you can visit your local Extension office for more information on proper soil sampling techniques.

Sometimes producers can have a sound fertility management plan and still experience issues during the growing season. Although a dense stand of bermudagrass will help defend against weed competition, periods of drought can slow its regrowth inviting weeds to fill in the bare spots. Weeds such as dogfennel, spiny amaranth (pigweed) and bahiagrass are examples of common weeds that I have seen popping up in fields after a period of drought. Dicamba applied at 1 pint per acre or 2,4-D at 1 quart per acre should control most of our broadleaf weeds. If you are targeting larger dogfennel, you may need apply dicamba at 2 pints per acre get adequate control. Please note that auxin herbicides, such as dicamba, can be highly volatile and are prone to move off target. If your fields are near sensitive crops like cotton, tobacco or soybeans, you may need to consider using a different product. Cimarron Plus (metsulfuron and chlorsulfuron) applied at half an ounce with a surfactant will also control a wide variety of broadleaf weeds and pensacola bahiagrass. There is no haying or grazing restriction for Cimarron Plus while 2,4-D and dicamba have haying restrictions ranging from 7 to 30 days, depending on the product. Take caution to minimize drift when using any herbicide. Spraying when wind speeds are under 10 mph, keeping your boom height low, and using air induction spray nozzles are some tips that can help you avoid drifting into sensitive areas. Remember, no matter what product you choose always consult the label for specific restrictions.

## Hot Weather and Beef Cattle

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

It gets hot in North Carolina. It's just a fact of life. For livestock farmers, this presents its own set of challenges. We routinely see hot spells of nearly 100 degrees for days at a time. Let's take a minute to look at a few issues that we must manage our cattle around in the heat.

### Water Consumption

Water requirements for cattle go up significantly when temperatures get into the 90's. This is not exactly ground-breaking research. Sometimes we as managers can overlook factors such as water source availability and volume of water present when all your cows decide they are thirsty at the same time. A 1300 pound cow can easily drink 25 gallons of water on a hot day. So, for a herd of 50 cows, this adds up to 1,250 gallons of water per day. Take a minute and think about how much water that actually is. Now look at how and where your cattle are watering from. It is not uncommon for people to have a 100 gallon water trough as their main water system. That tank will need to fill up 12 times per day to meet the needs of your cows. If you've ever stood and waited for a 100 gallons of water to flow into a trough through a garden hose and a float, it takes a while. Increasing your trough size can be a big help in getting a majority of your cows drinking instead of pushing in-line at an empty trough.

### Shade

One thing that we often fail to think about is that an animal needs to get out of the sun during the heat of the day. During our daytime highs, some type of shade is critical towards helping your cattle stay comfortable. Some would go as far as to argue that having no shade during the summer is almost inhumane treatment of animals.

Most cattle producers rely on trees for this purpose in a majority of their pastures. Trees work really well but you need to take a moment and assess what type of trees you have and how well they filter the sun. Pine trees, the most common tree we see around our pastures, are pretty lousy at this. Not to mention having 1-2 single pine trees standing in a pasture is an ideal lightning strike scenario. A thick enough stand of pines will do a decent job of getting cows out of the sun but a few here and there offer almost no sunlight coverage.

Hardwoods are much better, and even un-desirable hedgerow shrubs like Privet Hedge can offer some shade if big/thick enough. One downside to really

good hardwood trees in a pasture is that cattle have a bad habit of killing them over time. The mud and inevitable eroding of topsoil off the root system does not do a tree any favors and will often lead to the tree becoming weak and dying.

Shelters of course are ideal for lounging areas for cattle. Either metal roofs (if over 7' tall) or even filter cloth roofs offer excellent shade coverage. Cloth roofs can be used during the hot months then removed and stored over the winter. The downside to shelters is there are expensive to build and maintain.

### Handling Cattle

The biggest single factor to avoid when looking at heat stress is handling/working your cattle in the middle of summer. Some handling is inevitable of course. Fly treatments have to be made, calves have to be weaned, and many cattle farms put their calves through some type of pre-conditioning program that will require deworming and vaccinations. So while we often have no choice but to put cattle through a chute the summertime, it is critical that you be smart and plan this out.

The first rule of thumb is start early and end early. As quick as you can get going in the morning the cooler it will be plus the humidity will be lower in the mornings. Once temperatures have started to reach their peak by early afternoon you need to either be finished or just quit for the day and go again tomorrow. This will be much easier on both you and your cattle.

Second, watch the weather forecast. If you have some flexibility on when you can work your cattle, see if you can get lucky and catch a day or two that is a little cooler. Even a few degrees can make a big difference when it comes time to work your cattle.

Finally, realize that if it's hot and miserable to you it will be the same for your cows. Cattle that are hot and uncomfortable will handle like it. The same group of cows that work great in the winter will not act the same on a 90 degree day when they have been crowded up for three hours. Make sure you have enough help lined up, take some water breaks and try to find some extra patience when working your cows in the summertime.

## Controlling Summer Insects

By: Stefani Sykes, Livestock Extension Agent with N.C. Cooperative Extension in Wayne County

When the heat and humidity start to bear down on us during the summer months, the insects at our barns also become a nuisance. It's important to keep the insects under control at your farm, in order to protect your horses and the people on the farm. Many of these flying insects carry diseases, so it's key for horse owners to know what bugs may be around and how to prevent them.

Flies are probably to most common insect we see around our barns. Not all of them bite but those that do can severely irritate our horses. The horses may stomp, kick, and swish their tails to get rid of the pesky bugs. Vigorous stamping can actually cause cracks in hooves from the repetitive force (according to the University of Kentucky). There are many types of flies (house and horse are probably the ones you're familiar with) and they can all carry diseases that affect horses or people or both. Stable flies have a painful bite and usually attack the flank or below the knee of animals. Mosquitoes are another common pest that can harbor infectious diseases. There is no silver bullet for fly control but reducing the number of breeding site can significantly decrease the population. Clean barns and paddocks once a week and spread the manure in a thin layer or compost if possible. Flies like to lay their eggs in decaying organic material, soiled bedding, and moist material so the less opportunity you give the flies, the better your chances are. Fly traps and sticky tape are also useful to have around the barn.

Ticks are another common problem this time of year, again for humans and horses. Ticks are often found in woody areas, brush and overgrown grass. Eliminating these spots or restricting your animal's access to these

areas can decrease their exposure. Mice are actually important hosts for ticks, so making sure your mice population doesn't sky rocket is key. Check the lower body, mane and tail of your horse regularly for ticks and remove as soon as possible. If you've taken your horse out on a trail ride, definitely check your horse and yourself!

There are some less common insects you may want to consider controlling this summer. Carpenter bees do not sting often but their loud buzzing and aggressive behavior can certainly annoy humans and horses. They frequently make nests in eaves and window trim, so check these spots out first. Spiders are another one we are used to seeing in horse barns but not thinking about controlling. All spiders can bite if disturbed, according to entomologist Lee Townsend from the University of Kentucky. While not all spider bites are toxic, they do inflict a wound that can easily become infected. Of course, black widows and brown recluses are a totally different story!

Blister beetles are something we usually think about in hay. These beetles contain a chemical that is toxic to horses, and even touching them can poison your horse. Consuming too many can cause death, so this is something you need to be aware of. Oftentimes horses are exposed to these beetles when they are crushed in the hay making process; they are most often found in alfalfa hay, usually in later cuttings of hay. Your horse would have blisters in their mouth and GI tract if they consume these insects, reduced eating, and colic like symptoms. Contact your vet immediately if your horse consumes alfalfa hay and starts exhibiting these symptoms.



Blister beetle: Photo: Clemson University/USDA Cooperative Extension Slide Series/Wikimedia Commons



Lone star tick: <https://www.foxnews.com/health/lone-star-tick-bites-triggering-red-meat-allergies-in-more-people-across-us-physician-says>

## Weaning Time for Lambs and Kids

By: Dr. Emily Cope, Animal Science Extension Specialist, N.C. A & T University

Weaning time has likely arrived for many producers, but others may be making preparations for weaning now. Weaning can be a stressful event for offspring, ewes and does, and producers. Offering suggestions for minimizing stress will be much appreciated for all involved. Aside from recommending ear plugs to silence the crying lambs and bleating does below are a few other suggestions that may be helpful for your producers.

Weaning is typically done between 60 to 90 days of ages. However, weaning by weight is a better recommendation (2.5 – 3 times birth weight). Aside for age and weight, lambs and kids should be observed foraging or eating creep feed well.

If a producer chooses to creep feed, creep feeding should be started before weaning. This will help mitigate some stress on the offspring, as well as continue to encourage full rumen development. Creep feeding can come in the form of a high concentrate or high quality pastures and hays. At minimum creep feed (concentrate or forage) should be 14% crude protein, 16% is better. Forage availability and quality should be evaluated for dams and offspring prior to weaning.

### Early vs Late Weaning.

Some producers opt for early weaning while others prefer a later weaning (4 – 6 months of age). Both approaches have advantages and disadvantages.

#### Early Weaning:

- May be more economic to feed offspring than lactating dams.
- Reduces lactation stress on high milking dams.
- Increased stressed.
- Allows dams to regain condition.

#### Late Weaning:

- Reduced stress for offspring and dams.
- Reduced incidence of mastitis.
- Forage quality and quantity may be greater; however, dams may compete for forage with offspring.
- Reduces labor through group management.
- Increased chance for offspring parasitism.

Do not overload with additional stresses. Try to avoid vaccinating, deworming, castrating, and tagging at the time of weaning. It is recommended to perform these other management practices two weeks prior to weaning.

Remove ewes and does from lambs and kids. It is best to leave the offspring in familiar surroundings to minimize their stress. Advise the producers to check all fencing prior to weaning. Reducing predation and escape artists is essential.

Continue to monitor. Regularly monitoring for signs of health and performance are important in offspring and mothers. Identifying poor doers early is always best. Recording feed intake for lambs and kids can be a good measure of health.

## The Great Shade Debate

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

This subject had become quite the topic of conversation lately, especially with the extremely hot temperatures we had so early. We all know how hot it gets around here in July and August too. I am going to focus on cattle in this article, but the basic premise applies to all livestock. We all see cattle while we are driving around, some have shade, and some don't. They all look hot but the ones without shade seem to be hotter and yes, I do get the occasional call from someone concerned about the cattle. But before I get into the meat of the article, I want to touch on a couple of points. As an Extension Agent, my job is to educate and assist producers by providing fact based, nonbiased, research based information so they can make the best possible choices for their respective operations. This information can be in the form of a meeting, a field day, conference, one on one conversation or even in newsletters and articles. However, no matter the form of delivery, as an agent, I am supposed to keep opinion out of my recommendations. That said, I usually end up with a "Well, what should I do?" or "If they were your cows, what would you do?" or even a straight up, "What's your opinion?". Those of you who know me, know, at that point, I will give you my opinion, good or bad. Sometimes I probably give you more opinion than you want! My wife says I do like to talk. So for this particular article, I am going to present the facts that I have pulled together and then I am going to give you my opinion. Just remember, it will be my opinion. Take it for what you think it is worth and keep going. I know some will agree and some will not. That is why it is an opinion.

The facts. We all know there are breed and coat color effects that play into the subject of heat stress in cattle. I am not going to spend time on that in this article as the majority of producers in Sampson County are dealing with black hided bos Taurus cattle. There isn't a lot of research on cattle and shade. I did find a few studies and several "opinion" articles by university educators and even more by plain old producers. Most of the studies were done either with feedlot cattle, dairy cattle, or were focused on cows on endophyte infected fescue pastures. Several of the studies that did look at brood cows were from South American countries. The results tend to be contradictory. Some studies showed a shade affect and others did not. Heat stress can increase body temperature but not in all cases. One study showed no increase or decrease in growth compared to cattle in a similar environment without shade. Research in feedlots, indicated shade may be beneficial early on until cattle acclimate to summer temperatures. And cattle do have the ability to acclimate to their summer environment. Another feedlot study showed that cattle with 80 percent artificial shade had improved gain and feed conversion compared to those with no shade. A study in Uruguay demonstrated that cattle with shade spent less time grazing compared to those without shade but weight gain was similar. Another study I found stated there was no difference in grazing time between cattle with shade and no shade.

In studies where shade made a difference, the kind of shade,

natural vs. man-made, also had an impact, in some cases. An LSU grazing study involving heifers that had either 80 percent artificial shade or natural shade demonstrated no difference in animal performance. While a study at the University of Arkansas comparing permanent tin roof shade to trees and no shade indicated that in early summer there was a difference but over the entire study, there was no difference among treatments. Another University of Arkansas trial found that cattle with artificial shade had an increase in average daily gain of 20 percent and those with tree shade had a 60% increase over cattle with no shade. A study at the University of Kentucky showed a shade advantage in weight gain for cows, calves, and yearling steers. A University of Florida study found an increase in conception rate for cows with shade and the University of Missouri demonstrated an increased overall pregnancy rate.

So, you tell me. Do cattle need shade? Based on the research I am not sure there is a definitive answer. Some research shows a performance increase with shade and others don't. I did find some articles that said it wasn't just the heat but the combination of heat and humidity that made the difference. The higher the humidity, the more cattle tended to exhibit signs of heat stress. It is interesting to note that I didn't find any articles that indicated an increase in death loss attributed to heat. Several also indicated that limited amount of shade could be worse on cattle as they all tended to group under the shade and eliminated any benefits due to the proximity to each other.

So here is my two cents worth. I think they do need shade. Based on the research I found there seems to be benefits from providing shade even if there are no absolute negatives from no shade. I know when I am outside, I take full advantage of the shade when I can and I try not to be out if there is no shade. As a producer, I know a comfortable animal is a more productive animal. So, I want my cattle gaining, or conceiving, or even maintaining; so, if providing some shade will provide an assist, they are going to get shade. Additionally, it is hard for me to look at my cows and see them appear to be "suffering". They may be able to acclimate to the temps, but they still look hot to me. And finally, we need to look at the animal welfare perspective of the public.

More and more everyone is concerned with the welfare of the animals they are eating before it became food. As I stated at the beginning of this article, I do get calls about welfare, not only about heat but also about animals out in snow and ice and even about them standing in too much mud. The public is watching what we do and policing us more. Even if the research stated emphatically, "No. Cattle do not need shade!", convincing the soccer mom or the hipster that moved in next door that the cow standing there panting, tongue hanging out, drool stringing out both sides of her mouth, is fine, may be an impossible task!

Fall Showmanship Circuits

By: Dan Wells, Livestock Extension Agent with N.C. Cooperative Extension in Johnston County

Showmanship circuits consist of multiple youth livestock shows at various locations and dates across a region. In our readership area of North Carolina there are two showmanship circuits: the Eastern Carolina Showmanship Circuit and the 4-H Farm Credit Showmanship Circuit. Each has different rules and procedures, but the concept behind all is that both circuits have several participating shows, and a child may compete in as many of the shows as he/she likes. Awards are given for each individual show, but participants also become eligible for circuit awards by competing in a minimum number of the shows. Winners are recognized at the NC State Fair (Eastern Circuit) or at a year-end banquet (Farm Credit Circuit.) Following is a bit more information about each circuit. Even if you don't have children showing, please consider attending and supporting a show in your area.

Eastern Carolina Showmanship Circuit

Beginning in 2019, the Eastern Carolina Showmanship Circuit now has all four species; cattle, lambs, goats and swine. The meat goat and swine circuits are now under the umbrella of the Eastern Carolina Showmanship Circuit. The shows will be the same as in previous years, but the information will be in one location!

County	Goat Show	Lamb Show	Heifer Show	Swine Show
Halifax	August 3	August 4	August 4	N/A
Alpha Gamma Rho (Johnston)	August 9	August 10	August 10	N/A
Sampson	N/A	August 17	August 17	September 28
Albemarle Area	August 30	August 31	August 31	August 31
Edgecombe	September 6	September 7	September 7	September 7
Duplin	September 13	September 14	September 14	September 12
Lenoir	September 20	September 21	September 21	September 21
Wilson	September 21	September 20	September 22	September 17
Pitt	September 22	September 19	September 17	September 29
Wayne	September 27	September 28	September 29	September 26

4-H Farm Credit Showmanship Circuit

This circuit is sponsored by Carolina Farm Credit and Cape Fear Farm Credit.

County	Goat Show	Lamb Show	Heifer Show
Randolph	August 3	N/A	August 2
Stanly	August 17	N/A	August 17
Montgomery	August 24	N/A	August 24
Moore	August 31	August 31	August 31
Cumberland	September 5	September 3	September 6
Richmond	September 7	N/A	N/A
Lee	September 11	N/A	September 12
Chatham	N/A	September 7	September 7
Anson	N/A	September 21	September 21
Union	September 21	September 20	September 21
Robeson	September 28	October 5	October 5
Guilford	October 10	October 10	October 10