

**Soil Samples - Peak Season Starts 11/27**

Soils samples will be \$4 each starting on Wednesday, November 27 until Tuesday, March 31. Get your samples to the office as early as possible to guarantee delivery!

**2019 Southeast Regional Beef Conference**

The 2019 Southeast Regional Beef Conference will be held in Clinton at the Sampson County Agri-Expo Center on Tuesday, December 10th. Registration begins at 9:00 am and the program starts at 10:30. Dr. Jordan Thomas from the University of Missouri will be talking about "Selection of Fertile Heifers" from 10:45-11:45 am. Dr. Vitor Mercadante from Virginia Tech will discuss "Breeding Systems for Profit" from 1:3-2:30 and will be discussing "Managing Females for the Long Term" from 3-4 pm. For more information contact Paul Gonzalez at 910-592-7161 or paul\_gonzalez@ncsu.edu

**November Forage Tips**

- To improve feeding efficiency, test forages before winter feeding begins
- Do not graze fall planted perennial pastures until growth reaches 6-8"
- Winter annual pastures that were planted early (Sep) may be responsive to an additional application of nitrogen (30-50 lb.ac)

**December Forage Tips**

- Feed hay stored outside before using hay that is stored inside
- Map a monthly forage demand for specific classes of livestock
- Limit the grazing of winter pastures by feeding hay on pasture or restricting acres available to animals

**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.

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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.

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.

Disclaimer - The use of brand names and any mention or listing of commercial products or services in this publication does not imply endorsement by North Carolina State University nor discrimination against similar products or services not mentioned.

## Animal Waste Management

Below is a list of scheduled continuing education classes for those who need animal waste credits. **Please pre-register with the contact person.**

Date	Location	Time	To register:
November 20	Wayne County Cooperative Extension Office	9am	919-731-1525
December 3	Bladen County Cooperative Extension Office	9am	910-862-4591 or becky_spearman@ncsu.edu
December 4	Lenoir County Cooperative Extension Office	1pm	252-527-2191
December 10	Duplin County Cooperative Extension Office	9am	910-296-2143
December 13	Greene County Cooperative Extension Office	1pm	252-527-2191
December 17	Sampson County Cooperative Extension Office	9am	910-592-7161

### Final Permit Note

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

The new state permit is scheduled to start up October 1. However, there is a possibility that the plans for the new permit will change. If they don't change, and the new permit starts October 1 as it is written, then here are a few points of differences in the new swine general permit versus the current permit (effective through September 30). The permit can be accessed online at <https://deq.nc.gov/about/divisions/water-resources/water-quality-regional-operations/afg>

Then go to "Finalized 2019 General Permit" and to "Swine Permit". If you cannot access this online source, contact your local Extension agent to obtain a copy.

The current permit expires September 30 and the new permit as finalized starts on October 1, unless legislative or judicial decisions change this.

Statutory references were added to the new permit.

A difference between major changes and amendments to a plan were made. An **amendment** would be a change to crops, adding fields, etc. that affect 25% or less of the PAN applied. An amendment has to be done within 30 days of coming into effect and send a copy to Raleigh's central office. All other changes are considered to be a **major change** and must be sent to Raleigh for certification prior to being implemented. This means you must plan in advance of a change and send in material as required. Consult a technical specialist for assistance with an amendment or major change. (Located on pages 2 and 3; Condition I.4.)

A phosphorus trigger was added to the new permit. Regular soil samples would be examined by the owner for the Phosphorus-Index (P-I) levels. Fields with P-I levels 400 or higher would be evaluated by a technical specialist using the PLAT program (Phosphorus Loss Assessment Tool). Fields labeled "High" from PLAT would require a phosphorus rate instead of a nitrogen rate. Fields labeled "Very High" from PLAT would no longer be allowed to receive waste. (Located on pages 3; Condition I.9.)

Clarification of animal waste setbacks were added. (Located on pages 3 & 4; Condition I. 12.)

Explanations of handling mortality were added. (Located on page 5; Condition II. 10.)

If an OIC nor back-up OIC are present during land application, then one of those has to inspect the land application area within 24 hours (Located on page 6; Condition II. 17.)

The land application condition regarding tropical systems was updated. Land application must stop within 12 hours of when the National Weather Service first issues a hurricane warning, tropical storm warning, or flood/flash flood watch associated with a tropical system. (The permit that stays in effect until September 30 says application must stop within 4 hours of this issue.) Check weather.gov for immediate updates on weather. You can also find information on the National Hurricane Center's website at [nhc.noaa.gov](http://nhc.noaa.gov) that may be helpful. (Located on pages 6 & 7; Condition II. 23.)

A rainbreaker condition was added with a backup choice. You must

do **either**: add a rain shutoff device (estimated cost is \$100) on each pump at farm expense or commit to always have the operator-in-charge (OIC), back-up OIC, or a designated person under supervision of the OIC or back-up on site during application events. You must submit in writing with your option within 12 months of permit date. (Located on page 7; Condition II. 24.)

A condition was added regarding crop removal from animal waste fields. Crops that received animal waste must be harvested, removed from the field where they receive waste, and managed according to your plan. Hay that has been irrigated on must be removed within 24 months of harvest. (Located on page 7; Condition II. 28.)

Lagoon gauges must be certified at least once every five years and these certifications must be documented. (Located on page 8; Condition III. 2. b.)

Weekly stocking and mortality records must be documented. (Located on page 10; Condition III. 8.)

Monitoring well installation and sampling for lagoons in the 100-year flood plain were added. Well installation and sampling must be done within 6 months of receiving notification from DEQ. Unless otherwise notified, installation and sampling will be done at owner's expense. At least two wells would be installed per farm – one uphill and one downhill of any lagoons in the 100-year flood plain. Exemptions with two years of monitoring data may be submitted. (Located on page 10; Condition III. 11.)

Record retention was extended to five years from October 1 (instead of three years in the current permit). Phase this five year period in – instead of purging them at the three year mark, keep them to five years. (Located on page 11; Condition III. 15.)

An annual report summarizing the calendar year's animal waste utilization will be required on April 1. There is also a possibility of an electronic report being required upon notice, with provisions for a request for electronic waiver. The following are items needed to complete the annual report: waste plan, sludge survey, soil test report, plus IRRs 1 & 2, freeboard and rainfall forms, stocking and mortality forms completed through the calendar year. (Located on page 12; Condition III. 18.)

Clarification of the NRCS Standard to go below stop pump level was added. (Located on pages 7 & 8; Condition II. 29.)

A new odor control checklist has been updated in July and approved for use. A copy of the checklist can be found at: <https://animalwaste.ces.ncsu.edu/2019/07/updated-swine-odor-control-checklist/>

A copy can also be obtained by calling the Extension Office. You should use this form for any odor control checklist updates moving forward.

## Winter Hay Calculations

By: Katie Carter, Livestock Extension Agent with N.C. Cooperative Extension in Craven, Jones, and Pamlico Counties

Fall is in full swing in North Carolina, and although that may not mean beautiful fall leaves for all of us, we can still have color, full lush green color in our pastures! Even with lush green pastures producers may still need to supplement hay during the winter, but how does a producer know how many bales to buy to be economically efficient? The first step is to begin the process of calculating the hay inventory needed for the winter by sending a forage sample in to a certified lab to determine the forage quality. The forage analysis cost is minimal and the lab does the math for you! The quality of the forage will determine the amount needed during winter feeding. Once the producer receives and understands the forage quality analysis, they then can determine how much hay they will need to supplement over the winter grazing season. If the producer needs some assistance in understanding the forage quality analysis report they can contact their local Cooperative Extension Livestock Agent.

An example below shows how a producer can determine their hay needs. A producer has 25 mature cows at 1,200 lbs., 1 bull at 2,000 lbs and 6 weaned replacement heifers at 500 lbs. If these animals need to consume 2.5% of their body-weight per day, we can say that:

**Cows** will require **750 lbs./day** (= 1200 lbs X 2.5 lbs of DM/100lb of b.w. X 25 cows)

**Bull** will require **50 lbs./day** (= 2000 lbs X 2.5 lbs of DM/100lb of b.w. X 1 Bull)

**Replacement Heifers** will require **75 lbs./day** (= 500 lbs X 2.5 lbs of DM/100lb of b.w. X 6 Heifers)

The daily hay required would be **875 lbs.** of hay.

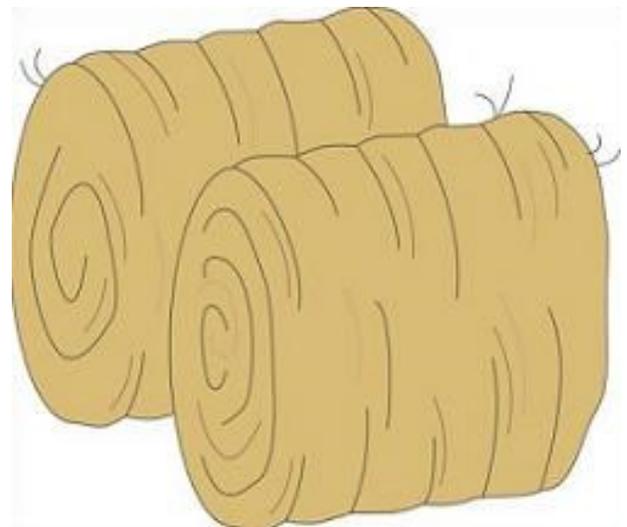
The calculation of 875 lbs. of forage is on a dry matter basis. This means that if we bale the hay or receive hay at 85% Dry Matter (DM), 15 % is water and we do not account for that during feeding. So, a 1,000 lb. bale at 85% DM, would be 850 lbs. on a dry matter basis.

As we finish up the calculation, we need to estimate our feeding period. For this example, we will say a producer is supplementing hay for 130 days. We need to multiply this number by our daily requirement, **130 days X 875 lbs. = 113,750 lbs. of DM.** If we assume the producer has

85% DM hay, then the as fed total would be roughly **134,000 lbs.**

To account for storage and feeding loss (barn stored and fed with a hay ring), we can predictably add another 15% to the “as fed” total and get a total of 154,100 lbs. In this situation, for this reasonable size herd, we need roughly **154 – 1,000 lb. round hay bales.**

Depending on whether the producer has a fall or spring calving season will determine if more supplementation is needed. The best way to cut back on winter hay supplementing is to have a good winter forage in the ground. This means a well maintained, good quality forage that can meet most of the cow’s nutritional needs. Keeping all this in mind a producer can go into winter confident that he will be efficient in keep hay cost down and his cattle will meet nutritional needs.



## Reducing Calving Difficulties

By: *Becky Spearman, Livestock Extension Agent with N.C. Cooperative Extension in Bladen County*

Your goal is to sale a calf every year from each cow and the first step is to get a live, healthy calf born. This article will discuss tools to reduce calving problems, the normal calving cycle, and problems. There will be a calving management talk and dystocia simulator at the Cape Fear Cattle Conference in Lumberton on January 28th (see page 1 for details).

The most common cause of dystocia or difficult birth is relative fetal oversize which could be that the calf is too big, the heifer's pelvic area is too small, or both. Most of these losses are seen in first calf heifers. The second most common cause is abnormal presentation. The third cause is lack of uterine contractions or uterine fatigue. For fetal oversize, prevention is the first step to reduce this problem. Several ways to prevent most dystocia problems include sire selection to reduce birth weight, pelvic measurements of heifers, and using a controlled breeding season. Completely eliminating dystocia in first-calf heifers is unlikely, but using management decisions you can reduce the problems.

Controlling birth weight is most effective through genetic selection. The major criteria for bulls to be used on heifers should be birth weight EPD. Genetics are available that will produce acceptable birth weight/calving ease, while maintaining above average growth potential. Many breeds have a calving ease EPD. Using proven AI sires will further enhance calving ease.

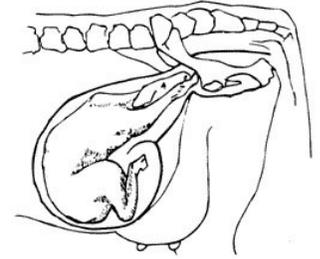
Pelvic Measuring heifers can help minimize the fetal size problem. The best time to measure is before you breed the heifer, so you can consider culling her if she is does not have an adequate size or has an abnormal sized area. A trained veterinarian or producer will measure the pelvic area both vertically and horizontally. The measurements are multiplied to give the pelvic area in centimeters squared. Reference charts are used to determine which heifers have a higher chance of having problems.

Another tool that you can use is a controlled breeding season to know when heifers are due to start calving so you can be more observant. Breed heifers 4 to 6 weeks earlier than the cow herd. This allows better observation of the heifers and allows them extra time to get back into a good body condition to rebreed.

You have taken steps to prevent dystocia, but it can still happen. Research shows that 6-10% of all calves born die at or soon after birth and half of those deaths are due to calving difficulty. This puts losses due to calving problems as the second biggest loss behind failing to conceive.

Prepare equipment before calving season. Cleanliness is a must because future cow fertility may be compromised. Consult early with your vet if assistance may be needed - time is critical. It is important to know the normal calving presentation (figure 1) and three stages of labor (table 1) to know when help may be needed. Normal delivery should occur within 2 hours after the water sac appears. Prolonged

calving may result in a dead or weak calf. Timing is critical and it is important to observe cows/heifers frequently during the calving season.



**Figure 1** Normal position of the calf prior to delivery

Stage 1 - Preparatory (4 - 24 hours before birth)	Calf rotates to upright position Uterine contractions begin Water sac expelled Hard to detect, watch for isolation Elevation and switching of the tail
Stage 2 - Delivery (1 hour or less)	Cow usually lying down Fetus enters birth canal Front feet and head protrude first Calf delivery complete About 1 hour in heifers and 30 minutes for adult cows
Stage 3 (less than 8 - 12 hours)	Shedding of placenta or fetal membranes Retained if not shed within 12 hours



Other re-

**Figure 2** minders: If assisting, make sure ob chains are placed correctly. The chain should be tightly fastened above the fetlocks with a half-hitch below the fetlock before applying traction in anterior or posterior presentations (figure 2). Guide the calf's head with your hand to protect the birth canal from lacerations. Traction should be applied in a steady, even manner. Only pull when the cow is straining. If you are pulling and a sudden obstruction occurs, stop and examine the birth canal and calf to find out what is wrong before proceeding. Publications with pictures to help you assist cattle.

- Calving Time Management for Beef Cows and Heifers - <http://factsheets.okstate.edu/documents/e-1006-calving-time-management-for-beef-cows-and-heifers/>
- Recognizing and Handling Calving Problems - <https://agrilifeextension.tamu.edu/library/ranching/recognizing-and-handling-calving-problems/>

## Winter Management of Small Ruminants

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

I'm going to start this article out with some interesting information I read the other day from the Maryland Small Ruminant page and then I'll dive into winter management. It's fall and that means you're probably seeing pumpkins everywhere! Pumpkin carving, pumpkin painting, pumpkin spice, and even eating pumpkins. While you may not think about pumpkins as a feed for your sheep or goats, they can actually be fed to them. Pumpkins will definitely NOT be your main source of feed for your sheep or goat herd but if you can get them at little to no cost, it won't hurt to give your animals a bit of a treat. They are about 90% moisture, so they should be fed in addition to other, "normal" feedstuffs. If we look at feed composition tables, there have 85% TDN on a dry matter basis and 16% protein. Cutting them into small pieces will encourage your animals to eat them, just make sure you increase new feeds gradually. Pumpkins also contain cucurbitan, a compound rumored to have anti-parasitic properties. There is not scientific proof of this but maybe there is some truth to the rumors! [https://docs.wixstatic.com/ugd/aded98\\_6085dfe61f41492780f35f527b98e887.pdf](https://docs.wixstatic.com/ugd/aded98_6085dfe61f41492780f35f527b98e887.pdf)

On a different note, let's discuss winter management of our sheep and goats. Most often slight changes to your schedule and routine are all you need to adequately take care of your animals. Since it can be cold, wet, warm, or dry (or any combination of them) in NC this time of year, your animals will go through many changes. Housing is particularly important in the late fall and winter months; you want to block the cold, harsh wind but it doesn't have to be fancy! The opening facing south, a covered roof and direct access to sunshine are sufficient to protect your goats and sheep. More energy is needed during the winter months to maintain appropriate body temperature. Corn or oats can increase the energy content of your ration to help maintain body temp. There should be some sort of roughage available to your animals, this time of year that usually means hay! Salt, minerals, and water are just as important in the winter as they are during the dog days of summer.

You may not think about parasites during the winter but keep up with your normal schedule and check them with the FAMACHA system. Worm them in November or December and again in 30 days if necessary. Stomach and round worms are the common culprits! Lice and mites often increase

in the winter months, so check your animals regularly and control when needed. Hoof trimming is important in the cold, wet conditions of December and January. We want to prevent hoof problems if we can! Sheep and goats are at a greater risk for foot scald and foot rot in these conditions. Bacteria will infiltrate the hoof and cause lameness and infections. Foot scald is an inflammation of the skin between the hooves while foot rot is an infection of the hoof wall; both are treatable.

Wet and cold will kill our small ruminants just like any disease, so it's important to keep them warm, dry and fed during the winter months! If you wouldn't want to be standing out in it, your animals probably don't either!



<https://silverlakefarms.com/8-best-goat-sheds-compared-reviewed/>

### Foot Rot



<https://www.fas.scot/article/much-footrot-cost/>

## Eastern Showmanship Circuit Winners

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

The 2019 Eastern Carolina Showmanship Circuit wrapped up in September and awards for each species were presented at the NC State Fair. This year marked the first time that one circuit was comprised of four species, where previously there had been three separate circuits operating in the same area of NC; one each for swine and meat goats, another for sheep and heifers.

Livestock Shows in the Eastern Carolina Showmanship Circuit were held in Halifax, Johnston, Sampson, Pasquotank, Edgecombe, Duplin, Lenoir, Wilson, Pitt and Wayne Counties.

Participants in the circuit were required to attend at least four shows to be in contention for circuit awards, with no more than six scores being counted towards their circuit total. The highest point winner in each age division will receive a championship belt buckle, with reserve winning an embroidered jacket. Third through fifth place exhibitors each received gift certificates from the Twist of Fate livestock supply trailer at the NC State Fair. There was also a raffle with several participants receiving a certificate for a free pair of Wrangler jeans.

Sponsors for the 2019 circuit included: **Signature Circuit Sponsor; Smithfield Foods-Hog Production Division, T-Shirt Sponsor- Smithfield Foods-North Region, Platinum Sponsors- Wrangler & AgCarolina Farm Credit, Silver Sponsor-Greg & Lynn Barnes**

### Swine Showmanship Winners

Placing	Novice	Junior	Intermediate	Senior
1	Riley Balance	Logan Balance	Justus Meads	Colton Meads
2	Arlee Shaye Fulcher	Evan Mayo	Faith Kennedy	Colbey Mathis
3	Spate Sanderson	Gage Harris*	Isaac Linton	Taylor Glover
4	Eli Price	Hannah Cooper*	Sarah Scott*	Kacie Strickland
5	Elyza Twitty	Lilee Ann Estes	Gideon Linton*	Madison Wooten

### Goat Showmanship Winners

Placing	Novice	Junior	Intermediate	Senior
1	Lucas Barbour	Taylor Askew	Scarlett Denning	Kadence Overby*
2	Carson Norris	Taryn Reams	India Young	Josh Fletcher*
3	Aubrey Dias	Andrew Roberts	Lillie Stallings	Hayden Riddick
4	Sadie Parks	Landon Johnson	Alicia Bateman*	Connor Mills
5	Easton Brooks	Kennedy Lee	Kaylee Johnson*	Cheyenne Pike

### Heifer Showmanship Winners

Placing	Novice	Junior	Intermediate	Senior
1	Makayla Davis	Annah Claire Sullivan	Lydia Crocker	Schylar Crocker
2		Liza Sullivan	Shane Kendall	Kadence Overby
3		Sloane Hinnant	Ross Hinnant	Hope Latta
4		Caleb Davis	Travis Cox	Taylor Glover
5		Abigail Blankenship	Keiley Severson	Daniel Dunn*

### Lamb Showmanship Winners

Placing	Novice	Junior	Intermediate	Senior
1	Zade Jennings	Mackenzie Cox	Travis Cox	Hailee Whitehurst
2	Parker Gardner	Addison Taylor	Ellie Elmore	Jacob Hinson
3		Kennedy Lee	Anna Brooke Taylor	Kalen Barwick
4		Lane Markham	Maggie Glass	Kadence Overby
5		Sloane Hinnant	Emma Grace Raynor	Aaron Spruill# Cheyenne Pike#

\*Denotes a tie that was broken on head-to-head competition or dropped scores. #Tie could not be broken even after head-to-head