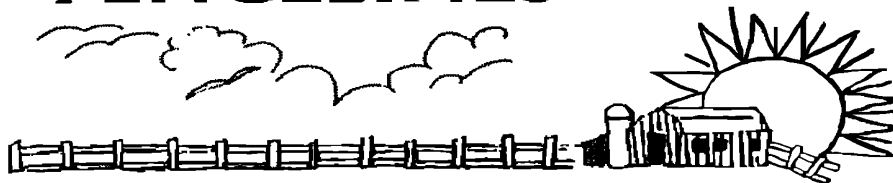


# FENCELINES



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## Important Information

### Fencelines Last Chance

This will be our last "paper" copy of Fencelines that will be mailed out. If you want to keep receiving Fencelines, you will need to provide your email address or download a copy from our website.

[https://  
wayne.ces.ncsu.edu/](https://wayne.ces.ncsu.edu/)  
select Animal Agriculture  
scroll down to Fencelines  
click on the current issue.

Have questions? Call Kim  
at (919) 731-1525.

### Reminder Soil Sample Fees

Several people have brought in soil samples for their gardens, just a reminder that all soil samples submitted between December 1, 2016 and March 31, 2017 will cost \$4 per sample.

## March & April 2017

### Upcoming Events

- ◆ **March 15th @ 5:30 pm - Profit Simplified: Learn to Create More Calf Value, Duplin County Extension Office, Kenansville**  
meal will be served so please preregister by calling Wanda Hargrove at (910) 296-2143.
- ◆ **April 13th @ 7 pm - Wayne County Cattlemen's meeting, Kitchen**
- ◆ **April 19th & 20th - Jr. Livestock Show and Sale, Wayne Regional Fairgrounds**
- ◆ **April 26th & 27th - Initial Animal Waste Operators Class, Wayne Center, Goldsboro call Kim at (919) 731-1525 to register.** Cost is \$35.00 for manual and class and \$25.00 for exam (WPCSOCC).

### Summer Opportunity

Do you know a rising sophomore, junior or senior who is interested in natural resource conservation? The NC Soil & Water Conservation District has an excellent summer workshop for an interested student. The workshop is held at NCSU from June 25th - June 30th. Interested? Fill out the application <http://www.ncagr.gov/SWC/educational/RCW.html> and email it to [ashley.smith@waynegov.com](mailto:ashley.smith@waynegov.com) or drop off it at 208 West Chestnut Street, Room 104, Goldsboro, NC 27530 by April 15th, 2017. If you have any questions please contact Soil & Water Conservation at (919) 734-5281 option 3.

For more information on material and events presented in this newsletter, contact your local Extension Agent at:

*Stefani Garbacik*

Stefani Garbacik at  
[Stefani\\_Garbacik@ncsu.edu](mailto:Stefani_Garbacik@ncsu.edu) or (919)  
731-1525

## Initial Animal Waste Operators Class

April 26th & 27th, 2017  
10 am (10 hours)  
Initial Animal Waste  
Operator Class

Wayne County Extension Office  
Goldsboro  
Cost \$35.00 for manual and class,  
and \$25.00 for exam fee to  
**WPCSOCC**

Call (919) 731-1525 or email  
kim.davis@waynegov.com  
to register by April 3rd



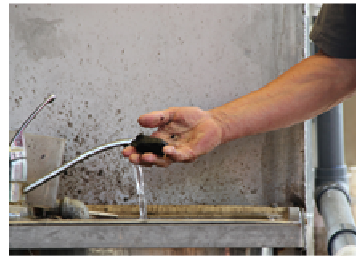
## Sludge Bags or Geotextile Tubes to Dewater Sludge

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

Sludge bags or geotextile tubes are gaining in popularity as a way to dewater sludge. The bags are used as an alternative method to traditional pump and haul to remove sludge in a lagoon. The bags are constructed from high-strength permeable geotextiles. The porous fabric only allows water to escape. The bags are resistant to biological, chemical and UV degradation for 5-7 years. The finished product is easier to transport, can be stored and used later, and has low odor. The bags allow a farmer to target a critical area in the lagoon, such as near the intake. There is the potential for a marketable final product. You will need approval from the Division of Water Resources (DWR) animal division. Price comparison is needed to make sure that this will benefit your farm's situation. Consider cost of equipment, polymers and distance to receiving land. This article will give a brief overview of the process. Contact your Extension Agent for more information.

Some materials and equipment needed:

- geotextile tubes (30 to 90' in circumference and any length usually 25-100')
- dredge to remove sludge and water from the lagoon
- pumps and piping – system needs to be able to add polymer before the pump, after the pump, and a special pump. Injection point is important. Some lagoons need more mixing, so need a pump to add polymer before mixing. Others need less, so put in polymer after the pump for less turbulence and mixing.
- solid separator
- flow meter gives total gallons per day
- frac tank mixes to have a consistent product and helps with polymer dosage rate.
- polymers and container to mix polymers. There are several polymer types to choose from (examples are aluminum sulfate, ferric sulfate, food grade polymers). The amount of polymer will influence the rate of dewatering and increase the rate and suspension of solids in the bag. Need correct ratio for proper flocculation.



This picture shows checking coagulation or flocculation to monitor polymer dosage. When the water runs clear and the solids stay in a ball means you are at the correct polymer dosage.

The picture below shows the bags. Sludge is mixed with polymer and pumped into the bags. Bags dewater and the solids stay in the bags. Bags are pumped full and allowed to dewater. This process continues until bags are completely full. Fill time is dependent on several factors – pump volume, dewater time, polymer effectiveness, etc. Rainfall can affect dewater-



ing, not fill time.

Considerations:

- Liner will catch water from the bags as it dewateres. Options include silage plastic or other plastics.
- Slope and grade of the land are critical to ensure that water and storm water are pumped back into the lagoon. Flat or 0 slope going down and in the other direction should be ½ grade slope. Too much slope and bags can roll over because water travels to the low spot.
- Storm water is a concern. It will collect on the liner and will have to be accounted for and pumped back into the lagoon.
- Consider how you will pay for removal. Paying on dry matter tons is a fair way because there are different solid percent removal rates.
- Bags cannot be reused to hold sludge, but can be taken to a landfill or used at construction sites.

## Initial Considerations for Renovation of Pastures and Hayfields

*Adapted by Dan Wells, Livestock Extension Agent with N.C. Cooperative Extension in Johnston County  
from an article by Dr. Matt Poore, NCSU*

There are a lot of questions about pasture renovation due to damage caused last year by drought in western and central NC and the flood in eastern NC. As the weather warms up, you should be able to tell which fields have severe long-term damage, which are weakened, and which are in good shape. Keep in mind that you really should be thinking in terms of how much bare ground there is, how much of the cover is desirable forage species, and whether legumes are present. In the west, some pastures show recovery while others show a lot of bare ground, few desirable plants and active erosion. Bermudagrass and bahiagrass that stayed under water for a long time is expected to survive, but fescue or other cool-season forages that were flooded in many cases were killed.

Some people think that when the originally seeded forage crop starts to thin out, then the fields need to be completely reseeded. This is not necessarily the case as a pasture will evolve over time to include multiple species. This is not bad as long as most of the plant population is desirable species. If a pasture has a high percentage of undesirable plants, low yield, little or no legume, or a lot of bare areas, then some sort of action is probably called for.

First, consider the main purpose of the forage stand. If it is multipurpose for grazing and making hay for cattle, then you can tolerate more weeds than if you are trying to make hay for a top end hay market. If grazing multiple species (cattle, sheep and goats) then some "weeds" may actually have nutritional value. Finally, if the fields are around your house or you just like things to look "clean" then there might be aesthetic reasons for pasture renovation.

If you decide a pasture needs attention, the next thing to think about is how it got in that condition in the first place. With good management, a pasture can remain productive indefinitely. Timely inputs like lime and fertilizer will help keep pastures healthy for a long time. If pastures were overgrazed, they may only need a rest and a careful look at the fertility program.

Soil fertility is the first thing to consider as you approach renovation. Start by soil testing; that information is the most valuable tool you have to improve pastures. Lime, phosphorus(P) and potassium (K) should be applied based on recommendations, although lime will take months to start increasing soil pH. Nitrogen is obviously important, but without proper pH and P and K levels, the response to nitrogen will be less than you want.

Second, consider if problems were caused by poor graz-

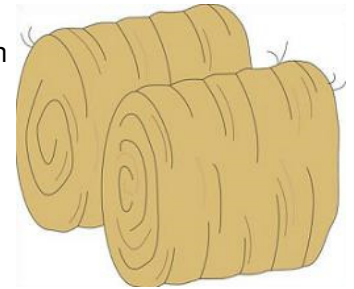
ing or hay cutting management. Undergrazing or overgrazing can cause pasture condition problems. If pastures are continuously grazed, eventually many of the desirable species will be killed out and undesirable ones will dominate. In hayfields, waiting too late in the spring to cut can thin the stand, resulting in bare areas and increased weeds. Cutting before the forage gets rank (early May for most cool-season forage in the Piedmont) helps maintain a vigorous stand. Cutting too short is another problem, which is easy to do with disk cutters. Never cut a cool-season pasture shorter than 4 inches or a bermudagrass pasture shorter than 2 inches.

Some folks think a pasture in bad shape just needs aeration. But, most research has shown that aeration alone may give a short-term response, but that in general aeration by itself is not a very effective renovation tool. Aeration does improve water infiltration and may be of benefit when wastewater is irrigated, and it will also help lime and P penetrate the lower soil profiles which might help with root growth. If you know compaction is an issue, you might consider aeration, but in most cases, it is not necessary.

If weeds are a problem, then frequent clipping or herbicides should be used. Frequent clipping can work against some weeds, and makes things look better for a while, but tough weeds call for an herbicide. The

problem is that without proper timing, you might not get all the weeds that are causing a problem. Herbicides might also cause collateral damage to desirable plants like clovers. Still, if you have a broadleaf weed or brush problem, the right herbicide applied at the right time can have a big impact.

In general, there is not a good way to handle undesirable grasses. If you have a weedy grass that is tall like Johnsongrass, then you can use a wick applicator to apply glyphosate. Otherwise, you have to provide optimal management to allow desirable grasses to dominate. One approach is to shift the grass population by changing fertilizer timing. If warm-season grasses are a problem in cool-season pastures, then apply nitrogen only in the fall after warm season grasses slow their growth, or in early spring before warm-season grasses are growing. If you have pastures that are mostly desirable warm-season grasses (bermudagrass, dallisgrass or bahiagrass) don't apply nitrogen in the spring, but wait until early summer (June) and you will shift the stand to the warm-season plants.





## Cattle Fly Control

*Adapted by: Margaret Ross, Area Poultry Agent with N.C. Cooperative Extension in Scotland County  
“A Thousand Points of Flies” written by Holly Ferguson, Ph.D Washington State University.*

Welcome to springtime! With spring comes warmer weather, greener pastures, and...flies! Have you thought about how to protect your cattle against flies? In this article, you will learn more about several common species of flies, the diseases they cause, and how to protect your cattle against them.

The first fly we will discuss is the face fly. It can cause your animals to drop weight and milk production, as well as serve as a vector for pink eye. Adult face flies are active from early spring to late fall. Female adult face flies will feed on nasal and eye secretions during the day and rest on vegetation at night. They lay their eggs on fresh cattle dung; larvae develop about five days later. To pupate, they crawl out to the soil and about a week later, emerge as adults. Control of the face fly is very important because of its ability to cause blindness from pink eye.

The horn fly can cause many problems including bunching, and reduced feeding and weight. This could cause you to lose money as a producer. Male and female adults feed on cattle blood and stay on the animal almost 100% of the time. They feed about 24 – 38 times per day. Their eggs are laid on dung and this is also where the larvae develop. Underneath the dung, pupae form and emerge about 6 – 8 days later during the summer. Their peak is in late summer. Controlling horn flies is very important because they can cause a major reduction in milk production.

The third fly we will discuss is the stable fly. Like the horn fly, it is a biting pest and can also cause bunching, and reduced feeding and weight. It will also cost you money per animal as a producer. Adults stable flies bite at the cow's legs, back, belly and sides and take one bloodmeal per day. They are only in contact with the cow for about 2 – 5 minutes per day. Their eggs and larvae are

found in decomposing or wet straw around hay bales. Cattle will typically kick and stamp their legs to try to rid of these pests. Their effects are worse during hot weather.

Control of these types of flies, as well as other types is very important. Various methods of fly control include feed-through supplements, tagging applications, and fuel-based applications. There are currently products on the market that are feed-through insect growth regulators (IGR). These are available in many different mineral supplements. Also, there are the tried and true “fly tags” that have been commonly used for years. However, just like with dewormers, a rotational method of different fly tags (the active ingredient being what you want to rotate) is best to help from breeding resistance in fly populations. Finally, there are fuel-based products that can be sprayed or put into a backrub for cattle. These are very effective, but sometimes can wash off in heavy rains and need reapplication.

Proper management of your farm's fly population is key. If your cattle are using their energy bunching up and stamping their legs, they are not grazing. This, in turn, means they are having a lower feed efficiency, meaning you could be losing money. By managing your fly population, you are giving your cows the time and energy they need to be successful on your farm.



## Getting Ready for Spring

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

Recent warm temperatures probably have you looking forward to spring and all the activities that come with it. As an equine owner, that probably includes the onset of show season and lots of riding time. It's important to make sure your horse is ready for all of that!

The first thing to be sure your horse is spring ready is to check their hooves. We've probably all heard the cliché "no foot, no horse" and while it sounds a little funny, it's very true. The farrier should attend to your horses hooves regularly, regardless of season. Stalled horses should have their hooves cleaned each day to prevent bacterial buildup. Horses kept outside should have theirs examined and cleaned at least one a week.

Parasites are another thing that people sometimes forget about in winter. The cold weather often keeps parasites at bay but that doesn't mean your horse doesn't need to be dewormed. The deworming advice may vary from place to place, so it's important to discuss with your veterinarian. Most deworming programs should begin in early fall and continue through February or March, but again, this is something to talk with your vet about. It's important to find the best schedule for you and your horses.

If you're excited about the upcoming show season, it would be a huge disappointment to get all ready to go, your horse is prepared, only to find out that your paperwork and vaccines are not up to date. This is the perfect time of year to be sure your horse is up to date on all vaccines and has a negative Coggins test. Some vaccines you may want to consider include West Nile Virus (WNV), Equine Encephalomyelitis (EEE), Equine Herpesvirus (EHV), tetanus, and rabies to name a few. Consult with

your vet for other vaccines that may be specific to your area and make sure you meet all health requirements for out of state shows as well.

Nutrition and exercise are key in making sure your horse goes into the spring at the top of their game. Make sure your horse is regularly exercised and if coming back from a long break, add the exercise gradually. Just because you've ridden your trail horse for 16 miles before, doesn't mean he can do that right away after a long winter break. Nutrition is also important for the general health of your horse. Examining the body condition of your horse is key to having the best horse you can have, the system ranges from 1 (emaciated) to 9 (extremely fat). Keeping a body score of 5 throughout the year is ideal, a weight tape is the perfect tool for getting an idea of your horse's weight.

This is just some general information about getting your horse ready for spring and all the activities the season includes! As always, call your local extension office with any general horse question and consult your veterinarian about vaccine and deworming schedules.



## Combination of Dewormers: The Time is Now!

Adapter by: Brian Parish, Agriculture Extension Agent with NC Cooperative Extension in Harnett County  
from an article written by JM Luginbuhl

Resistance to dewormers is a fact of life, and the situation has worsened greatly in recent years. Surveys indicate that most farms have worms resistant to at least two of the three major groups of dewormers. Many have resistance to all three groups, and some farms now have resistance to all available dewormers.

There is now very strong evidence that using a combination treatment is the best method for using dewormers and should be implemented on all small ruminant farms showing resistance immediately.

In New Zealand and Australia, products are sold that contain a combination of dewormers, so only one product needs to be administered. In contrast, in the USA, no dewormers are yet sold in this formulation, so the dewormers need to be bought and administered separately. This increases the cost as compared to the products available in these other countries. In the USA, the different groups of dewormers available on the market are not chemically compatible, thus they CANNOT be mixed together in the same syringe. Rather, they need to be administered separately, but can be given one immediately after the other. Products that contain a combination of dewormers as those available in New Zealand and Australia, however, are being considered by the Food and Drug Administration,

When using dewormers in combination, meat and milk withdrawal times will be equal to the dewormer used with the longest withdrawal time period.

All dewormers should be administered at the full recommended dose whether administered singly or in combination. Check the [Parasite Control](#) section of the NCSU Meat Goat Portal for recommended dewormer dosages and meat and milk withdrawal times.

If using dewormers in combination, it is critical to maintain refugia; thus, one should be using a selective treatment approach based on FAMACHA® (see [FAMACHA®](#) section of the ACSRPC website for more information on this method and for further explanations of refugia). The presence of refugia is essential to realize the full benefits from combinations. In fact, if refugia are not maintained then you will not get the necessary dilution of the resistant survivors, and this will then lead to having multiple-resistant worms that can no longer be controlled with the combination treatment.

If the efficacy of your dewormers are >80%, it is possible you may not notice any difference in the clinical response of treatments when applied singly vs. in combination.

Any safety precautions that exist for a single dewormer will also exist when used in a combination. Nevertheless, there are no known additional risks with using more than one dewormer at the same time.





## Youth Livestock Opportunities

*By: Tiffanee Conrad, Livestock Extension Agent with N.C. Cooperative Extension in Richmond County*

There are many opportunities for youth interested in livestock to learn new skills and knowledge about the animals they are so passionate about. They can join a 4-H club, show animals, join a judging team, or join a skill-a-thon team. Youth ages 5-19 have the opportunity to network with or compete against other youth from across the region and state when they join 4-H. Youth can join a general 4-H club or one that specializes in animals. Many counties have horse or livestock clubs. These clubs present educational information about animals at each meeting. Some of them join together to buy supplies needed for showing animals which helps individual families to save money. Youth in a 4-H club do not even have to have their own animal, just an interest in learning about them and a desire to be around other kids with the same interests.

Around 200 youth show in the 4-H Farm Credit Showmanship Circuit each year. Many of them do not start to get their animals until school lets out for the summer, but they are all thinking about a rough outline and a plan now. The entire Circuit is proudly sponsored by Carolina Farm Credit and Cape Fear Farm Credit. This funding is used to operate the Circuit. The county shows are in both Farm Credit territories, which makes it a great partnership. Youth compete at each of the 12 County Shows between August and the State Fair in October. Youth can show goats, heifers or lambs as part of the Show Circuit. Points are accumulated for placings in showmanship at a series of shows in the South Central area of North Carolina. The Showmen will finish the season at the banquet held in November.

Youth compete in Showmanship and Confirmation classes at each show. The Showmanship classes are designed to gauge the 4-H'ers knowledge and skill with the animal while confirmation classes are all about the animal itself. Rules and the schedule will be listed on the Richmond County website around July at: <https://richmond.ces.ncsu.edu/>

Some youth put their winnings into the bank to save for college while others may use it to invest in next year's show animal. There are several college scholarships available for youth to apply for which are strictly for 4-H members, those that show animals in county shows, and those that show at the State Fair. Showing animals is also a great way to beef up the college and scholarship application.

If you have questions about the 4-H Farm Credit Showmanship Circuit, you can call, Tiffanee Conrad at 910-997-8255. Youth living in eastern counties may

also be interested in joining the Eastern Circuit and may call Eve Honeycutt at 252-527-2191 for more information about showing goats or Tanya Heath at 252-641-7821 for lambs and heifers.

There are also animal related opportunities for those that do not have any or those that live in the city. Youth may participate in livestock judging and skill-a-thon. These competitions allow youth to learn about animal equipment and nutrition. There are also many opportunities to participate in livestock industry youth leadership programs. You can find information about all the youth livestock programs at this website: [http://www.cals.ncsu.edu/an\\_sci/extension/animal/4hyouth/ah4h.html](http://www.cals.ncsu.edu/an_sci/extension/animal/4hyouth/ah4h.html)

Livestock judging is a very traditional and well known contest that many youth like to participate in. They learn how to select quality animals and speak reasons to a judge as to why they selected those animals in that order.

Livestock skill-a-thon is another way for youth to be involved and learn new knowledge that doesn't require any animals. Youth study and learn to identify livestock breeds, different feeds that animals eat, tools used in animal husbandry, and different meat cuts. It involves goats, sheep, pigs, and cattle. Pictures and actual items are used for identification. There is also a written multiple choice test and group team problem solving that involves animal nutrition, diseases, reproduction, anatomy, and marketing.

What these youth learn from livestock programs is only the beginning. They learn leadership skills, animal husbandry, record keeping, self-esteem, and responsibility to name a few. They make friends for life across the state and learn how to communicate with adults and other youth. The future of agriculture lies in them, as they are the future farmers, doctors, teachers and agricultural advocates in our community. Many youth graduating from the 4-H program go to college and start careers working in agriculture or similar fields. If you would like information on how to join 4-H or how to become involved in any livestock program, please call your local Extension Agent.



## Regulating Voltage May Help Regulate Your Electric Bill and Extend Equipment Life

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

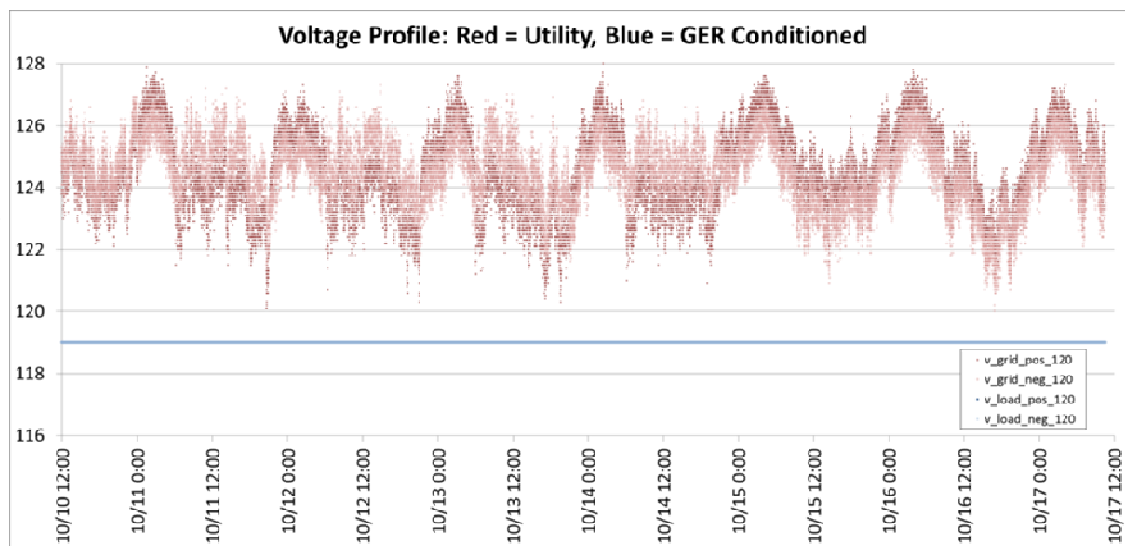
There have been many changes in commercial poultry production over the years. The increase in price of propane and natural gas drove growers to better insulate and seal houses to reduce fuel cost. As birds have gotten bigger, the need to improve wind speed and air exchange for cooling and better moisture control in litter has increased the size and number of fans driving up the electric bill for most growers to where the electricity bill is often one of their biggest cost. In addition to operating cost for the energy, the average grower now has 15 motors to maintain that utilize the majority of that electricity and most would agree that one of the other changes the industry has seen is a decrease in the life of the typical motor. We have recently tested a piece of equipment on a commercial broiler farm that has the potential to improve both issues. The unit is a Grid Energy Router, or GER, and works by conditioning the voltage and power factor entering the farm so that the voltage is flat-lined, or stabilized, then also adjusted to a desired set point. This means motors which are sensitive to voltage spikes and debts can receive optimum and consistent voltage every time they operate; which should increase their lifespans. In addition to improving motor life, this process of providing a steady voltage at nameplate rating of the motors has been shown in this test to reduce overall power usage by 10-15 percent when operating over 8 kW.

We found this during the on farm test of an eight week growing cycle from October through November of 2016; since this was a relatively cool grow out period and because we had the unit attached to one house, so we could monitor the other matched house as a control. Energy savings consistently occurred when the power draw was above 8kW in this test. If we had both houses operating on the GER as a grower would normally the draw would have been 8kW almost the entire growing cycle and during warm weather cycles it would likely always be above the savings threshold. The conservative energy savings generated from a fully connected unit on a typical poultry farm should generate payback for the unit in 2-3 years; this of course would fluctuate depending on electricity and installation cost at the location and operational time above the 8kW

threshold without factoring in any savings from extended equipment life as a result of current stabilization.

The GER was first developed for the electric utilities to help stabilize line voltage and also introduce “load control” where voltage is reduced for short periods of time during peak demand periods in order to provide ample power to all customers on the distribution line. So the GER is not exactly a new kid on the block since it has a history of providing reliable service. It is designed to simply bypass the current through itself should any of its components fail and allow the full flow of power. Utility companies would not install something that had a high potential to cause outages, as the management and operating expenses would greatly outweigh the savings benefit. The GER is also relatively small and can be mounted inside or out depending on the location and service situation.

Gridbridge, the company making the GER, has designed a new enclosure that is smaller than the one we tested and is working to also provide an enclosure more suited for inside or protected installations. Gridbridge envisions two paths to acquire this equipment: the first in coordination with your local utility, the second as part of a capital upgrade to your operation. On the latter path, where farmers purchase the GER solely for their direct benefit, GridBridge is planning to move forward with a nationally recognized end-user safety certification. If you would like to learn more about the GER and our test results, or are interested in assessing the unit for your farm, you can visit [www.grid-bridge.com](http://www.grid-bridge.com) or email [info@grid-bridge.com](mailto:info@grid-bridge.com)





## Jr. Livestock Show & Sale Schedule of Events

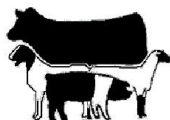
### Wednesday April 19th, 2017

8:00 to 11:00 am	Weigh in Animals
6:00 pm	Junior Meat Goat Show
8:00 pm	Junior Feeder Calf Show
	Junior Beef Heifer Show

### Thursday, April 20th, 2017

9:00 am	Junior Market Hog Show
5:30 pm	Costume Contest
6:00 pm	City Slicker Contest
7:00 pm	Awards Presentation
7:30 pm	Sale

**Make plans to come out and  
join us for a family fun event.**



## Fencelines going Digital Last Chance

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<https://wayne.ces.ncsu.edu/>  
select **Animal Agriculture**  
scroll down to **Fencelines**  
click on the **current issue**.

Have questions? Call Kim at  
(919) 731-1525 or email her at  
[kim.davis@waynegov.com](mailto:kim.davis@waynegov.com)

## Forage Management Tips

### March

- Apply nitrogen, phosphorus, and potassium to cool-season grasses to increase spring production.
- Begin grazing of fall-planted fescue and clovers when growth reaches 6 inches.
- Overseeding ladino clover into grass pastures should be completed early.
- Spread manure accumulated in pastures where hay was fed or where cattle congregated during the winter.
- Dig weed-free bermudagrass springs and plant them before growth begins.
- Consider controlling winter weeds (ex: henbit, hairy buttercup, etc.) with herbicides.
- Grass tetany may be a problem as rapid grass growth and cool, wet weather prevails.



### April

- Fertilize cool-season grasses if you have not already done so.
- Watch for symptoms of grass tetany.
- Winter annual pastures should be completely used before grazing pastures which may be harvested as hay.
- To maintain clover in grass pastures and to maintain quality, develop a rotational grazing system in which cattle can graze forage to a 2 inch height before moving to another pasture.
- Fertilize warm-season grasses as soon as dormancy breaks.

### 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.

Disclaimer - The use of brand names and any mention or listing of commercial products or services in this publication does not imply