

# Livestock News

Cumberland County Center

March 2016

### Inside This Issue

- 1 Important Information
- 2 Animal Waste Mgmt.
- 3 Feeding Damaged Soybeans to Beef Cattle
- 4 Two Stage Cattle Weaning
- 5 Equine Vaccinations Dealing with Wet Pastures
- 6 Production Practices for Sheep and Goats
- 7 Learning from Livestock Projects

### Contact Us

NC Cooperative Extension  
Cumberland County Center  
301 East Mountain Drive  
Fayetteville, NC 28306  
(910) 321-6860 Phone  
cumberland.ces.ncsu.edu

Liz Lahti  
Extension Agent, Livestock  
liz\_lahti@ncsu.edu

For any meeting in this newsletter, persons with disabilities and persons with limited English proficiency 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.

Distributed in furtherance of the acts of Congress of May 8 and June 30, 1914. North Carolina State University and North Carolina A&T State University commit themselves to positive action to secure equal opportunity regardless of race, color, creed, national origin, religion, sex, age, veteran status or disability. In addition, the two Universities welcome all persons without regard to sexual orientation. North Carolina State University, North Carolina A&T State University, U.S. Department of Agriculture, and local governments cooperating.

### Upcoming Pesticide Classes in Cumberland County

Classes will be at the Extension Office.

- ◆ March 8  
6-8 pm 2 hours of V credit
- ◆ March 10  
6-8 pm 2 hours of X credit

### Advanced Poultry Class

Will be Thursday, April 21 at 6:00pm at the Cumberland County Cooperative Extension office, 301 East Mountain Drive in Fayetteville. Topics will include: egg production, egg handling and selling, what to grow in your garden for your hens, and disease recognition and quarantine. Call 321-6862 to register by April 18.

### Meat Handlers License and Chicken Processing Class

Will be on Tuesday, May 3 at 6:00pm at the Cumberland County Cooperative Extension office, 301 East Mountain Drive in Fayetteville. Topics will include: obtaining a meat handlers license and poultry exemption and at-home poultry processing. Call 321-6862 to register by April 28.

**Sheep and Goat Field Day** will be Saturday, March 19 from 9:30 am-12 pm at Mike Herndon's farm (2543 Barlow Road Parkton, NC 28371). Topics will include: selecting breeding does and bucks, culling techniques, artificial insemination demonstration and practice, estrus synchronization, feeding dairy goats, udder care and management, and a milking machine demonstration. Call 321-6862 to register by March 17.

### UMO AgPrime Grant

A new program providing grants to NC farmers for new and innovative ideas has been launched by the University of Mount Olive and funded by the NC Tobacco Trust Fund Commission.

UMO AgPrime grants are available to farmers in Cumberland, Lee, Moore, Richmond, and Robeson counties. Funding proposals up to \$10,000 will be considered for farmers who are agriculturally dependent and who have viable ideas for new and innovative agricultural projects. Priority will be given to those who earn at least 50% of their personal income from their farm operation or agribusiness entity and to current and former tobacco farmers or former quota holders.

This program is designed to help farmers test creative ideas, expand and diversify their operation, and implement new marketing strategies.

The grant cycle opens on April 15, 2016 and closes on June 1, 2016. For more information and a link to the application, go to [www.umoag.com](http://www.umoag.com), click on "Outreach" and then AgPrime. If you have any questions about AgPrime please contact Lisa Childers at 910-321-6880 or [lisa\\_childers@ncsu.edu](mailto:lisa_childers@ncsu.edu).

### Peak-season Soil Testing Fee

NCDA charges \$4 fee for all soil samples processed by the lab until March 31st.

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.

**NC** State University  
A&T State University  
**COOPERATIVE  
EXTENSION**

Empowering People · Providing Solutions

## Animal Waste Management

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

### Initial 10-hour Animal Waste Operator Classes (OIC)

Sampson County Extension Office (Clinton) - April 21 & 22 starting at 9:30 am. Call 919-731-1525 to register by April 8th. Cost for the class and manual is \$35.



### Smithfield Vendor Expo

The Smithfield Vendor Expo is partnering with North Carolina Cooperative Extension to offer continuing education opportunities on Wednesday, March 23, 2016, 8:30-11:30am and 1:00-4:00pm at the Duplin County Events Center in Kenansville.

Six hours of animal waste (offered by the hour) and two hours of pesticide credit (categories N, O, D, and X) will be offered. If you are interested in attending the classes, please RSVP to Wanda Hargrove at 910-296-2143. There is no cost to attend.

The training agenda is:

8:30-9:30am -- Biofuel Crops Update – John Garner, NCDA & CS Research Operations Manager, Superintendent Williamsdale Farms

9:30-10:30am -- Corn & Soybean Production & Management - Della King, NCCES-Sampson County Center, Field Crops Agent, and Dr. Ron Heiniger, NCSU Vernon James Center, Professor of Crop Science & Cropping Systems

10:30-11:30am -- Getting the Most From Your Irrigation Equipment – Lee Brock, Tyler Brock, Zeke Hembree, Brock Equipment Co., Irrigation Dealers & Specialists

11:30-1:00 -- Break

1:00-2:00pm -- Health & Safety for Animal Waste Operators & Farmers – Robin Tutor-Marcom, Tami Thompson, NC Agrisafe Program/NC Agromedicine Institute, Nurses - Agromedicine

2:00-3:00pm -- Fusarium Head Blight Management, Herbicide Options for Multiple Crops – Jacki Hedgecock, Senior Sales Representative & Kelly Liberator, Agricultural Biologist, BASF Crop Protection

3:00-4:00pm -- Weed Identification – Becky Spearman, NCCES-Bladen County Center, Livestock Agent

The training will offer visual aids, presentations and demonstrations. John Garner will give us an update on biofuel crop research and where the market is trending for those crops, relating crop management to animal waste utilization. Della King will talk approximately 30 minutes on yield research for soybeans and Dr. Ron Heiniger will talk approximately 30 minutes on corn production and management. Lee Brock and his company will talk about maintenance and use of irrigation equipment to maximize efficiency. Tami Thompson and Robin Tutor-Marcom will talk about health and safety needs of farmers and animal waste operators to include equipment safety, health signs and warnings that can impact safety. Jacki Hedgecock will talk about treatments for fusarium head blight that maximize yield in wheat for about 30 minutes, and Kelly Liberator will talk about herbicide options for various crops including forages, corn, soybeans, and other crops. Becky Spearman will do a weed identification exercise and talk about how to identify those weeds and why those weeds are problems for our crops and animal waste utilization. She will also address cultural practices that influence weed population.

The Expo is presented from a partnership between Smithfield Hog Production and MB Grain. As well as hosting a wide array of agricultural vendors, this year's Smithfield Vendor Expo features an additional day for youth education on March 22.

### Hay Directory

North Carolina Department of Agriculture's Hay Alert is at <http://www.agr.state.nc.us/hayaalert/>. 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.

## Feeding Damaged Soybeans to Beef Cattle

By: *Dan Wells, Livestock Extension Agent with NC Cooperative Extension in Johnston County and Dr. Matt Poore, NCSU Ruminant Nutrition Specialist*

Some information adapted from: "Feeding Raw Whole Soybeans to Beef Cattle."

Cows in North Carolina are usually fed hay during the winter. Hay quality is often deficient, so that supplemental protein and/or energy are fed. Common supplements fed to cows include protein tubs, blocks or liquids (usually with Urea as the major Crude Protein source), whole cottonseed, whole soybeans, or a mixed concentrate.

Recently, delayed harvest and very wet conditions resulted in very low quality soybeans with many loads being rejected or sold at a large discount. We have had many questions about the potential feeding value of these beans. Whole raw soybeans make an excellent feed for beef cows as they have a high level of Crude Protein (40%) and Fat (20%).

We have very limited information on the potential mycotoxin levels in these damaged soybeans as the visual presence of very moldy damaged beans is a good indicator of potential mycotoxins. In three samples submitted by farmers in the last several weeks, it has been identified that Zeralanone is the most prevalent mycotoxin at levels that could impact animal health. Levels ranged from 1221 to 4535 parts per billion (ppb) and the level of concern for healthy cattle is 250 ppb. It is important to note that there is relatively little research on mycotoxins in cattle and the 250 ppb is a somewhat conservative level. However, because Zeralanone has estrogenic activity, it has been shown to interfere with normal reproductive development in replacement heifers, so producers should be very cautious with heifers even when below the level of concern.

Using the 250 ppb level, the soybeans with 4535 ppb could be fed at 5.5% of the diet or about 1.5 lb per day for a mature cow. The usual feeding rate for whole soybeans is 2 to 3 lbs/day for mature cows, so often corn or another concentrate ingredient would be mixed with the soybeans and fed at about 4-6 lbs per day.

Here is an example of a concentrate formulated for the producer with the soybeans containing 4535 ppb Zeralanone. Note this producer had all these grains on hand, but a similar supplement could be formulated with just corn and soybeans as shown in the second column.

Ingredient	Conc. 1 (%)	Conc. 2 (%)
Damaged Soybeans	24.7	27.5
Ground Corn	32.5	70.1
Wheat	20.2	0
Barley	20.2	0
Limestone	2.3	2.3

Other mycotoxins present in the damaged soybeans included DON in two of three samples (128, 704 ppb) and T2 in one sample (224 ppb). However, with the level of concern for DON (500 ppb) and T2 (100 ppb) normal feeding levels of the soybeans would be of no concern regarding those toxins.

Producers should test damaged soybeans for mycotoxins, especially Zeralanone, prior to feeding or should use very conservative feeding levels (less than 1 lb/day per cow). Currently the only mycotoxin the North Carolina Department of Agriculture and Consumer Services (NCDA & CS) analyzes for is aflatoxin. To help address the issue, NCDA & CS will analyze soybeans for additional mycotoxins including Zeralanone for \$50 per sample for the remainder of the winter of 2015-2016.

### Important Points About Feeding Raw Soybeans to Cattle

-Soybeans are high in fat (around 20%). Nutrient analysis is needed on soybeans before feeding and a ration balanced to limit fat to no more than 4% of total Dry Matter Intake for cattle, so the possible upper limit of feeding is about 20% of the diet or 5 lbs for mature cows. However, note practical feeding levels are usually from 2 to 3 lbs/cow daily. Additional concentrate needed may be better provided as corn or other high energy ingredient. Do not feed raw soybeans free-choice.

-Enzymes in unprocessed soybeans can inhibit digestion in non-ruminants (pigs) and pre-ruminants (young calves). Do not feed unprocessed soybeans to pigs or to calves under 300 pounds.

-Raw soybeans contain urease, which rapidly breaks down urea into ammonia. Do not feed raw soybeans to cattle that are receiving a supplement or feed containing non-protein Nitrogen (Urea) as this could lead to ammonia toxicity and death. Protein tubs, blocks and supplements may contain Urea, check the label. With the high crude protein in whole soybeans it does not make sense to feed a urea containing protein supplement in addition to soybeans, anyway.

-Grinding raw soybeans increases digestibility, but decreases their shelf life because the fat can begin to go rancid after being exposed to air. Feed soybeans within three weeks of grinding, sooner during humid conditions.

Contact your Extension Agent for assistance in collecting and submitting soybean samples for analysis. Complete the sample submission form carefully, as some tests are optional. For soybeans, always select a Fat analysis and mycotoxins, including Zeralanone.

## Two Stage Cattle Weaning

By: Brian Parrish, Agriculture Extension Agent with N.C. Cooperative Extension in Harnett County

A cattle producer in Harnett County called the Extension office and asked me if weaning flaps helped the cattle weaning process. As everyone in the cow / calf business knows, separation of the calf from its mother (Weaning) is a very stressful time for both cow and calf. Both calves and their mothers typically do a considerable amount of fence walking and vocalizing for a few days following weaning and both calf and cow can also lose weight during this time. I looked but found very little research information on the subject. I suggested to the producer that we could do a rough on-farm weaning study and we would see if they work or not. Since the nose-flaps would only be adding one additional run through the chutes the producer agreed to the on farm study.

We placed non-invasive flexible plastic nose-flaps in the nose of 120 calves 7 days prior to actual separation with 120 calves not getting the flaps. The nose flaps prevents the calves from nursing but still allows the calf to graze, drink water, and be close to their mother. The nose flaps were removed on weaning/separation day with all calves going to the same pasture. We observed the calves that had nose flaps and their mothers went right to grazing immediately at separation like nothing had happened.

We also observed that the cows and calves that did not get the nose flaps one week prior to separation walked the fence bellowing and trampled and destroyed an area of pasture of about four acres along the fence. We also observed visual weight loss in cows whose calves did not receive the nose flaps, as there was a visual body condition score difference in the two sets of cows. From our observations the two stage weaning process did appear to reduce the stress of the weaning process for both cow and calf and there were performance differences. The producer liked the results of the plastic nose flaps that are not very expensive, can be washed, disinfected, and reused from year to year. Another large cattle producer in Harnett County has been using the weaning flaps for years and says that he would never wean a calf on his farm again without using them.



## Equine Vaccination Programs

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

Preventative medicine programs for horses include vaccinations, deworming, and nutrition. They can be designed with your veterinarian to protect your horse's long term health. Vaccinations are one part of that program and vary from farm to farm. A veterinarian will help design a program based on several factors including risk exposure, history of disease, potential for adverse reactions and age of your animal.

Core vaccinations are considered by the American Veterinary Medical Association as those that protect from disease that are wide-spread in an area, pose a public health threat, are required by law, are highly infectious, or pose a risk of severe disease. The core vaccines are effective and safe to justify the use with most patients. Core vaccines include West Nile Virus (WNV), Eastern Equine Encephalomyelitis (EEE) and Western Equine Encephalomyelitis (WEE), Rabies, and Tetanus. Talk to your vet about recommendations for an annual vaccination schedule. Other vaccines may be recommended depending on your situation.

Looking back at the Horse Blog ([nchorse.blogspot.com](http://nchorse.blogspot.com)), every year there are cases and horses dying in North Carolina of EEE and WNV. EEE, WNV and WEE are transmitted by mosquitos. West Nile Virus and Eastern Equine

Encephalomyelitis are endemic in NC and can cause illness or death, but can be prevented with a sequence of two vaccines.

The EEE and WNV vaccinations initially require two shots, 3 to 4 weeks apart, for horses, mules and donkeys that have no prior vaccination history. Neither vaccination fully protects the animal until several weeks after the second shot, so it is best to vaccinate as early in the mosquito season as possible. A booster shot of each vaccine is recommended to be given every six months in North Carolina because of the extended mosquito season.

Symptoms of EEE include impaired vision, aimless wandering, head pressing, circling, inability to swallow, irregular staggering gait, paralysis, convulsions and death.

Symptoms of WNV in horses can include loss of appetite and depression, fever, weakness or paralysis of hind limbs, convulsions, impaired vision or hyperexcitability.

Rabies is spread by the saliva of an infected mammal through a bite wound. Tetanus is caused from wounds that have become infected with the organism. It is normally fatal to infected horses.

## Dealing with Excessively Wet Conditions in Pastures

This winter has been extremely wet and caused challenges for all livestock and horse owners. This article will discuss ways to deal with these wet conditions. If pastures are wet enough, livestock can tear up the pasture's soil structure and cause "pugging." The severity of pugging depends on several factors including soil type, rainfall amount, pasture cover, number and size of animals, and how long they are left on the field. Pugging can cause soil compaction and damage the roots of forage plants.

Potential effects from pugging include reduced pasture growth and utilization, nutrients leaching from the soil, increased weeds in the spring and following year, delayed spring growth, uneven fields, animal health problems, reduced yield later in the season including loss of stand, and stress on the family.

Damage is usually worst where animals congregate near feeding areas or water. This causes muddy areas that create a suction on the legs and hooves of the animals making it hard for them to move around hay and feeders. 4-8" of mud

has be shown to decrease intake and slow gains in cattle. Move feeding areas around and find your high dry places. Consider feedlot or a sacrifice area so you don't ruin your entire pasture.

High stocking rates increase pasture damage even if for a short amount of time. Consider using feed pads, lanes for moving cattle, rotational grazing and backfence and lower stocking rates. Think about your pasture layout and where the damage is located and make modifications in the future.

Animal health can suffer too during wet times. Young animals have an increased risk of hypothermia, being trampled by older animals and becoming trapped in the mud. If you are calving, find areas that are relatively dry, free from manure build-up and have a wind break. Consider birthing inside for other animals. Watch animals closely to make sure they are eating enough hay and maintaining body condition. You may need to supplemental feed to keep condition. If weaning soon, consider stress on those young animals. Make sure animals have fresh, clean water.

## Production Practices for Sheep and Goats

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

Most new goat and sheep owners want a year round health calendar, so that they can make sure to do everything they can for their animals. Health plans in goats and sheep are very simple. They need 1 vaccination, need their hooves trimmed, need to be checked for external parasites, and may need to be dewormed. There are a few other production practices that may need to be done, depending on what you plan to do with your animals.

Goats and sheep need to first be given their vaccine at one month of age. The vaccine provides long-term protection against Overeating Disease (Enterotoxemia) and Tetanus. All young and newly purchased adult animals should receive the two-shot series if the vaccination status is unknown. After the original 2 series vaccine is given, they just need one booster every year after that. Pregnant does and ewes should get a booster 4-5 weeks before they are due. Show animals may need this vaccine more often, since they receive a higher level of nutrition. Please check with your veterinarian for local disease information that might lead to further vaccination.

Goats and sheep will need to have their hooves trimmed about every 6-8 weeks. It could be longer or shorter depending on the surface that they normally walk on. If they are walking on rocks or hoof shelters, they may not need to be trimmed as often. As you are trimming their feet, check for foot rot and treat them accordingly.

I saw several farms last spring that had problems with their goat's hair falling out. In most cases, the problem was lice. They are the most common external parasite. If animals are losing hair and scratching, they may have lice. After parting the hair and looking at the skin really closely, you can see the grayish-brown lice moving around. Ticks may also be a problem in some areas, which you can just remove a few by hand or a lot with chemicals. Goats may also be itching from barn mites normally during winter months and may need to be treated.

Goats and sheep are very susceptible to internal parasites, especially *Haemonchus contortus*, also known as

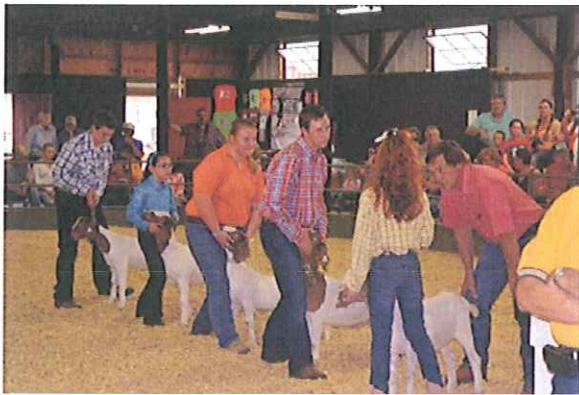
Barberpole worm. This worm feeds on blood and can cause anemia and death. You can get certified in the FAMACHA system, where you compare a color chart to the inner lower eye membrane of each goat or sheep. A white color indicates anemia from a high parasite load. Dewormer resistance is prevented and you save money, because you are only treating the animals that really need it. FAMACHA can indicate anemia that is the result of liver flukes, so you can collect fecal samples to identify which type is causing the anemia. You can then treat the animals with the proper dewormer. It's always a good idea to weigh the goats or sheep, so you know how much dewormer to give them. The metabolism in goats is much higher, so they need a larger amount of dewormer. Farmers need to work with their veterinarian to get any extra labels for products that are not labeled for goats or sheep. Diatomaceous Earth, feed additive dewormers, and deworming blocks have all been found to be ineffective against internal parasites. There are now four classes of dewormers available in the US: Avermectins, Benzimidazoles (deworming pregnant does with Valbazen can cause abortions), and Imidazothiazoles (giving too much of this drug can cause toxicity problems such as staggering or death).

Young kids and lambs may need to be castrated depending on your market. It's a good idea to wait until they are 2 and a half months old so that their urinary systems have developed enough before you castrate them. This can prevent urinary calculi. You may also want to disbud kids within a few days of birth depending on the intended use of the goat. Disbudding prevents human eye injury in dairy goat breeds and it also prevents injury to youth showmanship participants during handling.

If you would like to learn hands-on how to do many of the production practices on goats during a field day, please RSVP with Tiffanee Conrad at 910-997-8255 or email at [Tiff\\_Conrad@ncsu.edu](mailto:Tiff_Conrad@ncsu.edu). The field day will be held in Richmond County at the John McInnis Farm on Monday, April 4th at 6 pm. If you have any questions about production practices of your goats and sheep, please call your local Extension Agent.

## Learning from Livestock Projects

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



4-H youth livestock programs can be extremely rewarding while at the same time extremely frustrating. Youth put so much time and effort into their projects and sometimes things go wrong; it can be a hard lesson to learn. There are many benefits that participants can take from this program that apply not only to livestock animals and shows, but also to their current and future goals.

Trustworthiness and respect are two important traits for livestock showing and for life in general. Honesty, loyalty and courtesy are exhibited by feeding and watering animals daily, adhering to deadlines, listening to advice, and adhering to withdrawal times on drugs and dewormers. Responsibility is one of the key traits that livestock showmen, and 4-H members, need to learn. Not every animal is a winner, and not every child is a perfect showman, but being responsible for the animal every day and putting the time in to work with it are

very important. Sportsmanship, work ethic, and determination are also key values that 4-H participants take away from this program.

The 4-H youth livestock program offers young people the opportunity to build character. The benefit of this program extends beyond the traits listed above and applies to showing livestock, but more importantly, to their future.

A Wayne County parent said that he was proud of his daughter because she “has the fire to make sure she does her best, no matter what.” This 4-H participant works with her animals on a regular basis, regardless of weather.

A long time member said that working with her 4-H youth livestock projects over the years have “changed me from a shy, red haired little girl to a confident, hard-working young lady.” Parents involved in this program can be proud of their children as they learn about life and death, the importance of hard work and perseverance, patience, and the friendships they make.

A former showman, who is currently working on her Master’s in Communication, offered this statement: “4-H youth livestock has given me a passion for agriculture. It has given me lifelong friends, memories, and time with my family. 4-H youth livestock is something I entered and never left, and never will. It is my heart and passion.”



## Is Storm Water Draining your Farm Production?

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

Water is one of our most precious resources and farmers are often more keenly aware of the importance of water than the average citizen. Often when we think of water, it is either availability, not having enough or quality, is it safe to drink or use for our needs. These are important concerns but lately there has been an increase in issues of too much water or it being somewhere it is not desired. One place water should not be, is in the poultry house floor or litter. Poultry growers spend a lot of energy and money ventilating houses to keep litter moisture under control. Dry litter reduces ammonia volatilization, prevents flies from hatching, and reduces bacteria loads. Maintaining dry litter is already challenging enough, but if you have drainage issue that allow your floors to become wet or worse water seeping through sidewalls it becomes an impossible task.

Unfortunately, many times these problems started at construction. Pads were not raised significantly above grade level and porous soft soils were not replaced with heavy clays that pack tightly. Other times drainage ditches and storm water runoff were not properly constructed to handle the volume of water needed to prevent influx into the houses. Even when attention is paid to these details at construction, over time erosion or changes in surrounding topography increase or redirect storm water into houses. These are important issues that every farm needs to address at least by being aware of the impact runoff, erosion, and water infiltration can have on your farming operations as well as water resource quality. Improper storm water drainage can lead to wet floors and litter, foundation and house damage, increased fly and mosquito populations, and violations of waste management control.

If you are already having issues with water in your poultry houses it is important you address the situation promptly even if it only happened that one time when it rained really hard or for a whole week straight. Storm water events are likely to occur again and often there are things that effect their occurrence outside your property or control that signal the need for a change. Keep in mind when nearby land owners make changes to their property may change the amount or location of storm water entering your property. Each situation and farm is different and you may need the help of an ex-

pert such as a grading contractor or engineer. Your local Soil & Water district or NRCS office can be a great resource to start. You may even be able to get some cost-share funds if there is an erosion or conservation issue. Some construction issues, such as a level floor, are not easily changed or addressed. Other problems that developed over time as changes occur with storm water flow or level or because of erosion can be impacted sometimes with fairly simple steps. There are some basic guidelines that everyone should follow and consider as you inspect your poultry operation for storm water and drainage issues. Many of these concepts apply to other farming operations and a good storm water plan should incorporate all farming practices for the entire operation.

- Floor heights should be at least 12inches higher than surrounding areas.
- The ground should slope away from house stem walls between 3-5%.
- A healthy vegetative short ground cover should be maintained (minimizes erosion).
- A gravel/rock apron should extend from the base of the wall to 6" past the roof dripline.
- Drainage ditches should be kept clear of debris and sediment buildup.



- Ditching should remove and keep excess water away from houses and litter areas.