Important Information

October 2-11 - Robeson Regional Agricultural Fair: Livestock Shows and Competitions Daily - Call for more information or show times. Visit the website http://www.robesoncountyfair.com/.

October 20 - Livestock Association Meeting: Time and place TBA.

October 28 - Advisory Committee Meeting: Time and place TBA.

October 29 - Healthy Hogs Seminar: The Healthy Hogs Seminar will be held at Sampson Community College in Clinton. The program starts at 8:30 a.m. and preregistration is encouraged. Topics will include Yes, Johnny, Conventional Pig Farming Is Ethical; Which Pigs Must Be Euthanized; and Motivating the Contract Grower. Concurrent afternoon sessions include: Managing a Tractor Trailer Wreck, Improving Reproduction - Focus on the Essentials, or a Ventilation Workshop. The cost of the seminar is $60 or preregister and pay only $50. For an agenda and registration form, call your Extension Agent.

October 30 – Five-County Goat Meeting: There will be a Goat Meeting in Robeson County at the O. P. Owens Agriculture Center, 455 Caton Road (Highway 72 W), in Lumberton. The meeting will start at 6:30 p.m. and a sponsored meal will be served. Topics include How to Perform Fecal Egg Counts, Marketing Meat Goats, and Feeding Small Ruminants. Please RSVP at 910-671-3276 by October 28.

March 2009 - Richmond County Wild Game Cook-Off: Date and time TBA. It is a competition to see who can cook up the best recipe. The public gets to taste each dish after the judging is complete. Richmond County encourages surrounding counties to compete as well as taste. Now is the time to freeze any wild game that has been trapped or hunted by you or given to you by a friend. You can also freeze any plant material, nuts, or fruits that you have collected or been given. Happy Hunting and Gathering!

If you are interested in learning more about any information in this newsletter, contact me at the Extension Center at 671-3276 or E-mail me at Michelle_Shooter@ncsu.edu. For accommodations for persons with disabilities, contact me no later than five business days before the event.

Sincerely,

Michelle M. Shooter
Extension Agent
Agriculture - Livestock

MS/dh

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.
Sludge Compliance Change

As of July 2008, the NRCS Standard 359 was modified with regard to sludge management. In a memo from the 1217 Interagency Animal Waste Committee, the new requirements were outlined. The old standard required that the measured treatment volume below stop pump must have a minimum of 4 feet of depth free of sludge at all times.

Sludge compliance is now based on sludge volume as a percentage of the total treatment volume. Sludge accumulation in the permanent treatment zone must be less than 50 percent of the planned treatment volume. Also, there must be a minimum of 2.5 feet of liquid above the sludge at the pump intake location. If either of these conditions is not met, then sludge must be removed or managed in accordance with an approved Plan of Action for Lagoon Sludge Reduction (POA).

A new sludge survey worksheet has been developed. Producers out of compliance with the old standard may now be in compliance. Producers should complete the new sludge survey worksheet. If a producer is now compliant, they should submit both sludge survey worksheets, OLD and NEW, to DWQ. They will be reviewed, and the producer will be notified of their compliance situation.

State General Permits

The State General Permits expire on September 30, 2009. DWQ is in the process of developing the new permit. When the draft is finalized, it will go to public notice and several public hearings will be held (probably in January). The final permit should be issued by March 2009.

DWQ Website with Recordkeeping Forms

DWQ’s website has access to many recordkeeping forms including IRR 1 and 2, freeboard/daily precipitation, stocking/mortality, Plan of Action Cover Letter, Plan of Action 5-day Drawdown Form, Plan of Action 30-day Drawdown Form, change of OIC, and many other forms. http://h2o.enr.state.nc.us/aps/afou/Forms.htm

Calibration and Sludge Surveys

All farms are required to calibrate their irrigation equipment and perform a sludge survey. General Permit Farms are required to calibrate at least once every two years and perform a sludge survey every year. NPDES farms must complete both every year.

Check your Continuing Education Hours! - Animal waste operators must have six hours of continuing education credit every three years. Call your Extension Agent to check your hours or go to DWQ’s website at http://h2o.enr.state.nc.us/tacu. Click on Renewal Information.

Reminder - Animal Waste Operators must send in their $10 renewal fee to DWQ by December 31.

High Freeboard Levels in Lagoons

The Animal Waste Certification Training Manual discusses the steps to take for high freeboard levels. Due to the recent heavy rainfalls, some lagoon levels may be higher than required for structural stability. Farms in this situation must complete a plan of action (POA) to describe how the owner will reduce the lagoon level. There are two scenarios with different plans of action. A cover letter should be submitted with the plan. The POAs are 5-day drawdown and 30-day drawdown.

Plan of Action for High Freeboard – 5-Day Drawdown -
When farms are above the level required to be maintained for structural stability, the owner is required to submit a POA within 24 hours to lower and maintain the lagoon level at a point below that needed for both structural stability and the 25-year, 24-hour rainfall event.

Plan of Action for High Freeboard – 30-Day Drawdown -
When facilities are identified below the level required to be maintained for structural stability but not adequate to also retain the 25-year, 24-hour rainfall event, the producer is required to submit a POA within 48 hours to lower and maintain the lagoon level to a point below that needed for both structural stability and the 25-year, 24-hour rainfall event.

Upcoming Continuing Education Credits

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Location</th>
<th>Package(s)</th>
<th>Registration Fee</th>
<th>Call to Register</th>
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<tr>
<td>October 9</td>
<td>7:30 p.m.</td>
<td>(1 hour)</td>
<td>Bladen County Livestock Association</td>
<td>910-862-4591</td>
<td>to register.</td>
</tr>
<tr>
<td>November 20</td>
<td>9 a.m.</td>
<td>(6 hours)</td>
<td>Lenoir County</td>
<td>252-747-5831</td>
<td>to register.</td>
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<tr>
<td>November 25</td>
<td>10 a.m.</td>
<td>(6 hours)</td>
<td>Sampson County</td>
<td>910-592-7161</td>
<td>to register.</td>
</tr>
<tr>
<td>January 27</td>
<td>10 a.m.</td>
<td>(6 hours)</td>
<td>Richmond County</td>
<td>910-997-8255</td>
<td>to register.</td>
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</tbody>
</table>
Due to the drought of 2007, farmers have been concerned about hay losses and ways to decrease those losses. Hay losses occur during harvest, storage, and feeding. Some losses will occur during harvest, but paying attention to your process will keep losses less than 20 percent. Research from Michigan State University compared wastage from feeding round bales in 4 types of feeders. The research showed losses of 3.5 percent with a cone feeder, 6.1 percent for rings, 11.4 percent for trailers, and 14.6 percent for cradles. Feeding hay without any protection can have up to a 50 percent loss. This article will discuss hay storage options.

A North Carolina research trial at the Mountain Research Station measured storage losses for 5 different storage systems for 2 storage periods. The trial also looked at effective cost under 2 other scenarios - reduced hay cost and reduced barn cost. All farms are not the same, so each farm should evaluate what is best for their farm situation.

Differences in farm condition, initial hay cost (either cost to produce or purchase price), cost and type of storage system, length of storage, and the cost of specific items are all things to consider. The type of costs for the different storage systems varies. Cost can include site preparation, pallets, or other materials to raise bales off the ground and tarpaulin cover for outside storage to cost of the barn for inside storage. When deciding which storage option is best for your farm, include operating, maintenance, ownership, and labor costs.

The 5 different storage systems were on the ground without cover, on pallets without cover, on the ground and covered with a tarp, on pallets and covered with a tarp, and in a barn on pallets. The storage periods were for 7 and 15 months. Total loss was from the initial weight of the bale under each storage system.

The trial also ran 2 scenarios based on situations we commonly see. The first was the cost of hay produced on poultry and swine farms that have animal fertilizer that must be used. The cost goes to the farm that created the storage. The second scenario assumes that barn storage is available and the investment is zero (there are still taxes, insurance, and maintenance costs).

Covering hay bales greatly reduces losses and can be accomplished by using plastic, hay tarps, or a shed. Plastic should be 6 mil (usually lasts 1 year). Plastic can allow moisture on the bale surface and can be hard to keep on. Hay tarps are more expensive than plastic, but they will last multiple years (up to 5 years with care), will “breath” to minimize moisture accumulation, and will stay on the hay better than plastic. Storing hay on pallets is more important on clay or poorly drained soils.
Profitability in beef cattle is always walking a fine line. Managed operations have to continuously look for areas where they can improve to stay profitable. One area that I see a lot of cow-calf operations fail to utilize is the use of growth implants. It is surprising the number of farmers who use growth implants ineffectively or even not at all. When I hear farmers casually dismiss this huge profitability tool in a time where we are pinching every penny we can, I continue to find that this decision is made without knowing all the facts about growth promotants. The fact is, next to selective breeding, growth implants give us the greatest return on investment you will find in farming cattle.

Growth promotants work by manipulating the natural hormone levels of beef cattle to increase feed efficiency, weight gain, and carcass quality. The implant gives a time-release dose of either natural or synthetic hormones for around 60-100 days, depending on which product you use. The beef industry is under attack about the use of growth implants in calves and feedlots. The problem with these complaints about beef safety is that they are completely without any scientific merit. Before the Food and Drug Administration approves a product for use, it must undergo extensive research and trials and is proven to be 100 percent safe. The first growth implant was approved for use in beef cattle over 30 years ago. Since then, several additional growth promotants have gone through clinical trials for approval, and all of them have shown a reoccurring trait. The hormone levels in implanted cattle and cattle that are not implanted are indistinguishable. There is no such thing as “hormone-free” meat. Every steak, pork chop, and piece of fried chicken you have ever eaten has hormones in it.

If you are marketing your cattle as all-natural or organic, then certainly you are making that choice as a marketing decision and are receiving prices that reflect this. If you are a commercial cattle producer and marketing your cattle through traditional channels, then the choice to not use growth implants is a huge decision and should be made after you completely understand the economic impact of growth implants.

The first thing to remember about implants is that while they are an excellent management tool, they have to be used in conjunction with proper management. Cattle that are on poor nutrition or cattle that are not healthy will not be able to receive the boost in performance that an implant will provide. For healthy, growing cattle, implants will provide you with the following:

- A 10 - 15 percent increase in Average Daily Gain
- 7 - 10 percent gain if fed efficiently
- 3 - 5 percent increase in weaning weights

For an average cow-calf operation that is castrating bulls at one month or younger, the weight difference seen at weaning could potentially be 35-50 pounds when compared to calves that are not implanted. When you consider that implants cost $1-$2 and take less than a minute to put in a calf, the economic impacts of these products are impressive.

Finally, what are the advantages/disadvantages of using implants in heifers? That depends on what you intend to use the heifers for and how you are going to market them. The short answer is that heifers that are intended for replacement females should not be implanted. The hormones that are used in implants will interfere with the normal sexual development of a growing heifer. If you are selling your heifers at a public sale barn, then it is a common gentlemen’s agreement that your heifers will not be implanted in case someone wants to buy them for replacement females.

Whether you choose to use growth implants or not is up to you. Just make sure you know all the facts about the products and are making the best decision for your operation.
Fall just began, but in no time, winter will be knocking on our doors. Make sure your horse is protected from the harsh winter elements and be aware of changes in nutritional needs. During cold weather, horses require additional energy to maintain internal body temperature and to keep warm. When environmental temperatures (including wind chill) drop below 45°F, a significant amount of energy is used by the horse to maintain body heat. This temperature is referred to as the critical temperature.

The amount of energy required by the horse to meet daily energy needs is measured by digestible energy (DE) in calories. The critical temperature can be used to estimate increased energy needs, which the horse must obtain from the diet. For each degree below the critical temperature, the horse requires a 1-percent increase in DE. Wind chill, moisture, and coat thickness will affect the critical temperature. If the horse’s coat becomes wet, the critical temperature will increase by 10°F to 15°F.

The following formula is used to calculate the increased DE requirements for a horse as a result of cold temperatures and wet, windy conditions:

\[
\text{Example:}
\begin{align*}
\text{Critical temperature} & \quad 45^\circ F \text{ (critical temperature)} \\
\text{Actual temperature} & \quad -25^\circ F \text{ (current temperature)} \\
\% \text{Increase in DE required} & \quad 20\% \text{ increase in DE requirements}
\end{align*}
\]

The Importance of Hay and Fat

Feedstuffs vary in the amount of internal heat produced when digested by a horse. Forages, which are digested by microbes located in the cecum and large intestine, produce more heat than concentration mixes, which are digested by enzymes in the small intestine. The best way to increase internal body heat, while maintaining a safer, more consistent energy intake, is to increase the intake of hay. A horse should consume at least 15 to 17.5 pounds of hay daily to meet critical temperature needs during cold weather. During prolonged periods of cold weather (several days below critical temperature), both the concentrate and forage portion of the diet should be increased in equal proportions.

The Importance of Water in Cold Weather

Maintaining ample water intake is the most critical part of ensuring the health of your horse during cold weather. The horse prefers a water temperature of 45°F to 65°F. Under normal conditions, the horse will consume 1 gallon of water per 100 pounds of body weight. As the water temperature decreases, the horse will consume less water. The same 1,100-pound horse may consume as little as 1 to 3 gallons of water daily when water temperature is 32°F. Low water intake is directly related to increased incidence of impaction colic. Water intake can be encouraged by increasing the amount of forage being fed prior to a drop in temperature. This increased amount of dry matter encourages the horse to drink more water. Concentration mashes should be fed during the actual cold period when water temperature is below 45°F. Feeding 2 to 3 gallons of hot water daily mixed into a mash with a textured or pelleted concentration mix will provide additional water intake. To avoid gas colic, allow the mash to sit for 15 minutes; this will permit the feed to expand prior to feeding. If possible, offer 10 gallons of water (at 65°F or warmer) twice daily. Break and remove ice from water tubs, making certain to provide water that is available free choice. It is important to remember that cold weather affects horses too, especially when the temperature drops below 45°F. A few additional management steps can help your horse stay well this winter. If you have any questions, contact your local Livestock Agent or veterinarian.

Forage Management Tips

* Finish using summer grasses before grazing the cool-season ones.
* Watch for prussic acid poisoning when grazing sudan and sorghum-sudans after the first frost.
* Overseed warm-season grasses with winter annuals.

* Separate lactating and dry cows and give the lactating cows the best quality pastures and hay.
* Winter annual pastures planted in September may be responsive to a nitrogen application (30 - 50 pounds/acre).

November

* Test forages before winter feeding begins.
* Do not graze fall-planted perennial pastures until growth reaches 6 to 8 inches.

* Limit the grazing of winter pastures by feeding hay or restricting acres available to animals.
* Feed hay stored outside before using hay that is stored inside.
Most goat farmers are at the beginning of the breeding season, since meat goats are considered seasonal breeders, and in our region, the breeding season generally extends from September to February. During the breeding season, goats come into heat or estrus about every 18-22 days. For successful breeding, does and bucks should be joined for 40-45 days, which is the length of time necessary for does to complete 2 estrous cycles. A ratio of 20-30 does per buck is recommended for best breeding results. It’s important to understand the signs when a doe is in heat so that you can document it in your record books. You are probably not going to remember 5 months down the road which doe was bred when, and it can be important to know her kidding date in case she has complications. Does in heat become vocal and some bleat very loudly as if in pain. Constant tail wagging from side to side is another sign of heat. In addition, the vulva will appear slightly swollen and reddened, and the area around the tail may look wet and dirty because of vaginal discharge. Other signs of heat include decreased appetite and an increased frequency of urination. Does will also pace restlessly along their enclosure for a way to get to the buck or stand close to the fence. Finally, a doe in heat may mount another doe as if she were a buck or let another doe mount her.

In spite of all these signs, it is still sometimes possible to miss heat. In general, people experiencing most trouble in detecting estrus usually have only 1 or 2 goats. In some instances, it may be very useful to run a teaser (vasectomized) buck with the does to detect estrus.

A vasectomized buck is rendered infertile through surgery by cutting the tubes carrying the sperm from the testes to the penis. However, his libido and interest in mating still remains. Animals used to detect estrus can be fitted with a harness containing a crayon that will mark the females in heat when they are mounted. If the herd is checked twice a day, marked females can then be separated and mated to the appropriate buck.

The duration of estrus varies from 12-48 hours. Within that duration, standing heat (the period the doe stands firmly when a buck attempts to mount) lasts approximately 24 hours. Ovulation usually occurs 12-36 hours from the onset of standing heat. At the beginning of estrus, the vaginal discharge is clear and colorless. It becomes progressively whiter and more opaque towards the end of standing heat. Does reach puberty and may be ready to breed at 7-10 months of age. However, does should not be bred until they reach 60 – 75 percent of their expected mature weight, because their growth may be stunted, and they can have difficulty kidding. Therefore, in deciding when to breed does, producers should consider their age and size but also when they were bred last and their body condition. Season should also be taken into consideration, because kids born during the hot spring or summer months do not thrive and experience more health problems than kids born during cooler parts of the year. Fly populations are oftentimes higher at that time and can carry disease around the farm. If you are unsure about your breeding plan, please call your local Extension Agent for help.

Many goat farmers have reported huge death losses this summer because of heavy worm loads. All the rain that we have gotten this year has helped the worm population to thrive. That is why it is really important that you use your FAMACHA card to check the eyelids of your goats for anemia levels more often than you normally do. You can help reduce worm problems by following stocking rate recommendations. The rate for your pasture or paddock can be anywhere from 6-15 goats per acre depending on forage yield. Having too many goats on a small acreage can multiply your problems. Some obvious signs that your goats may have high worm loads are pale gums or eyelids, rough hair coat, diarrhea, low milk production, off feed, lethargy, abnormal temperature, dehydration, chronic coughing, and bottle jaw (swelling under the jaw). If you’re not sure about the proper way to deworm your goats or don’t know how to check if they need it, please call your local Extension Agent for help.
Poultry farmers constantly have biosecurity drilled into their heads from service representatives, veterinarians, Extension personnel, and other sources. As a poultry farmer, you may get tired of hearing about biosecurity, but please do not relax your biosecurity program. Any management practice that reduces the chance of a flock being exposed to some disease-causing organism contributes to the biosecurity of the flock. I think the following information will justify the importance of a sound biosecurity program.

Exotic Newcastle Disease, Avian Influenza, and other highly transmissible diseases are a very real disease threat to poultry farmers in North Carolina. A few years ago, California had an outbreak of Exotic Newcastle Disease that finally got eradicated. All quarantines have been lifted, but the California Department of Food and Agriculture (CDFA) activated a monitoring program that will continue for some time.

The outbreak and eradication process to humanely euthanize and depopulate 2,138 premises (mostly backyard flocks) housing 3,016,000 birds cost taxpayers more than $160 MILLION. Imagine what the cost would be if Exotic Newcastle Disease or any foreign animal disease hit our area. I hope these figures got your attention.

Dr. David Rives, veterinarian for Prestage Farms, presented an outstanding talk titled “Improving Biosecurity on Turkey Farms” a couple of years ago at the N.C. Turkey Industry Days meeting. Below are basic steps any poultry farmer should take to improve biosecurity at the farm level:

1. MAKE IT DIFFICULT FOR UNNECESSARY VISITORS TO ENTER YOUR FARM.
   Install a gate. Post signs alerting visitors of disease risks. Keep doors locked.

2. MAKE IT EASY FOR ESSENTIAL VISITORS TO ENTER YOUR FARM.
   Provide a vehicle wash station. Make disposable boots and other items such as hairnets and coveralls available.

3. AVOID CONTACT WITH OTHER POULTRY.
   This seems obvious, but how many growers have someone working on his or her farm that may have contact with “backyard” birds?

4. MAINTAIN THE PUMP HOUSE AS A “CLEAN” AREA.
   The pump house is often a source of cross contamination between houses, especially on two-age farms. Treat it like a separate house to minimize this problem.

5. PROVIDE A MEANS OF SANITIZING BOOTS BETWEEN HOUSES.
   Dip pans can work but are seldom maintained properly. A hose and siphon valve can be easier to maintain and be more effective. Having separate boots for each house is also an option.

6. HAVE CLOTHING STRICTLY DEDICATED TO FARM USE.
   It is a little extra trouble, but going to lunch at the local grill and then re-entering poultry houses increases the chance of disease introduction.

7. MAINTAIN A VIGILANT PEST CONTROL PROGRAM.
   This is a constant battle. Take whatever steps are necessary to keep fly and beetle numbers at a minimum. Keep rodent bait available and rotate when necessary. Keep wire and sidewalls in good repair. Install a hot wire around houses to deter varmints. When houses are empty, keep end doors or summer doors closed when not tilling or cleaning out.

8. INSPECT VEHICLES AND EQUIPMENT COMING ONTO THE FARM.
   Cleanout crews and others who go from farm to farm, including company personnel, are a very real disease threat. Provide a means for cleanup or deny them entry to the farm.
Aflatoxins are toxic byproducts produced by fungi Aspergillus flavus and Aspergillus parasiticus. The Aspergillus fungus can germinate and grow on feed grains at moisture levels of 15 percent or greater in the presence of warm temperatures (70°F - 100°F). The mold produced by this fungus, the aflatoxins, is optimal at moisture levels greater than 17.5 percent and temperatures of 77°F - 92°F. The toxin can infect a variety of grains but is most commonly found in corn. Infection can occur while grain is standing in the field, at and soon after harvest, and during storage. Drought conditions, heavy insect damage, and other crop stress are associated with increased occurrences of aflatoxins in corn. Also, after harvest, delayed drying, inadequate drying, and poor storage conditions can contribute to increased aflatoxin levels.

Swine, and other livestock and poultry, are susceptible to aflatoxins at very low levels. Low levels of aflatoxins in the diet of pigs can lead to decreased feed intake, slower growth rate, and decreased ability to resist disease. In general, younger animals are more susceptible than older animals, and with increasing levels of aflatoxins in the diet, depressions in feed intake and growth rate can become severe. If aflatoxin levels are high enough, liver damage can occur.

Determination of aflatoxins in feed grains can only be accomplished by chemical assay. An original screening test used at grain elevators and buying stations was to visually inspect samples of the corn under an ultraviolet light for the presence of fluorescent particles. This test is capable of detecting the presence of the fungi, but it does not confirm if aflatoxin, the toxin byproduct of the fungi, is present.

When a feedstuff, such as corn, is contaminated with aflatoxins, several strategies have been identified to reduce potential negative affects of using the grain in animal feeds. If the level of contamination is low, the addition of other dietary ingredients, such as protein, mineral, and vitamin supplements, may be able to dilute the toxin level and eliminate negative impacts on animals. Feed containing higher levels of aflatoxins may require blending with other grain sources that are free of aflatoxins to lower the concentration. Segregating aflatoxin contaminated feedstuffs and using it on lower risk animals has also been used effectively.

NCDA&CS is offering to test farmers’ corn for aflatoxins free at the Constable Laboratory in Raleigh. If you cannot deliver your 5-pound to 10-pound bags of corn to Raleigh, you can drop them off at the Border Belt Tobacco Research Station in Whiteville. Some Extension Centers are also offering to collect the corn and deliver it to the station or Raleigh for you. Contact your local center for more information.

### Table 1 - FDA Action Levels for Aflatoxins in Feed and Feedstuffs

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<th>Commodity</th>
<th>Concentration, ppb</th>
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<tbody>
<tr>
<td>Corn for immature animals and dairy cattle</td>
<td>20</td>
</tr>
<tr>
<td>Corn and peanut products for breeding beef cattle, breeding swine, and mature poultry</td>
<td>100</td>
</tr>
<tr>
<td>Corn and peanut products for finishing swine</td>
<td>200</td>
</tr>
<tr>
<td>Corn and peanut products for finishing beef cattle</td>
<td>300</td>
</tr>
<tr>
<td>Cottonseed meal (as a feed ingredient)</td>
<td>300</td>
</tr>
<tr>
<td>All other feedstuffs</td>
<td>20</td>
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Recommendations for the use of agricultural chemicals are included in this newsletter as a convenience to the reader. The use of brand names and any mention or listing of commercial products or services does not imply endorsement by North Carolina Cooperative Extension nor discrimination against similar products or services not mentioned. Individuals who use agricultural chemicals are responsible for ensuring that the intended use complies with current regulations and conforms to the product label. Be sure to obtain current information about usage regulations and examine a current product label before applying any chemical. For assistance, contact your county Cooperative Extension agent.