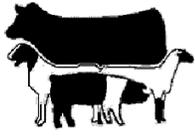


Harnett County Center

Livestock News

May 2022



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Harnett Cattle Group Interest Meeting

June 7, 2022 6:30 pm to 8:30 pm

There was considerable interest in starting a Harnett County Cattlemen's group just before the Covid Pandemic rolled in and stopped gatherings for a while. Harnett cattle producers have voiced interest in getting this group started back up. The group would like to have a planning meeting to listen to producers wants and needs and start getting together on at least on a quarterly basis. Come join us if you can.

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NC State Extension works in tandem with N.C. A&T State University, as well as federal, state and local governments, to form a strategic partnership known as N.C. Cooperative Extension.

Hay Directory

North Carolina Department of Agriculture's Hay Alert is at <http://www.ncagr.gov/HayAlert/>. It lists people selling hay or looking for hay to buy. It is free to list your hay.

For any meeting listed, persons with disabilities may request accommodations to participate by contacting the Extension Office where the meeting will be held by phone, email, or in person at least 7 days prior to the event.

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Potential Seen in Sludge-Drying Systems

Submitted By: Kaelyn Mohrfeld, Livestock Extension Agent, N.C. Cooperative Extension in Greene & Lenoir

The N.C. Foundation for Soil & Water Conservation is partnering with Phinite Inc. and North Carolina State University crop and soil sciences researchers on a low-cost way to dry swine sludge for easy transport and blending for use as fertilizer. If successful, the project could turn a nagging concern into a potential revenue source for producers. It's made possible through a Conservation Innovation Grant from the U.S. Department of Agriculture-Natural Resource Conservation Service to the foundation.

Hog farms now collect and treat manure in anaerobic treatment lagoons. The top liquid layer (effluent) is locally applied on spray fields, but the settled, phosphorus-rich solids accumulate below. This sludge is a source of high stress for farmers and environmentalists. Growers must periodically remove and dispose of the sludge to comply with their permits. The heavy, wet material is expensive to transport and difficult to dispose of locally due to limited application sites. High sludge levels make lagoons less efficient and can increase nuisance issues like odors. "Manure management is a double-edged sword," Steph Kulesza, NCSU assistant professor of nutrient management and animal waste.

"Manure is an excellent source of a variety of nutrients, but swine sludge is incredibly high in phosphorus. An organic, slow-release phosphorus source is of great value to phosphorus-deficient agricultural areas, like the Midwest. N.C. already has a lot of phosphorus in our soils, the nutrients in the bottom of these lagoons could be better utilized elsewhere."

Phinite's innovative system uses a simple low-cost, low-energy solar process to dry the pre-digested, low-odor lagoon sludge into a granular product. The setup uses a robot to handle and mix the drying sludge, virtually eliminating labor costs. The finished, significantly lighter product can be easily transported and blended with other materials into a balanced organic fertilizer for sustainable farming.

"Hog lagoon sludge has been heavily anaerobically digested and contains relatively low levels of ammonia," Jordan Phasey, CEO of Phinite. "It is not an odor risk like raw manure, so complex and expensive odor management systems are not required." And it's fast. Phinite predicts that its air-drying system can remove two years' worth of sludge per year, resulting in total lagoon cleanout in 10-15 years.

"Reducing lagoon sludge volume could significantly improve the local environmental footprint. We can lower the amount of phosphorus applied to effluent spray fields and also improve the resiliency of these animal operations to extreme weather events," Kulesza said. This new manure management system promises to improve lagoon efficiency, reduce environmental risk and create a recurring revenue stream for producers.

"By combining sludge drying with the current push to imple-

ment anaerobic digestion on swine farms, we're on the cusp of being able to recycle absolutely everything that comes out of an animal on the farm. At a profit. This has the potential to completely transform the sustainability of agriculture," Phasey said.

N.C. State's animal waste management team is conducting its own research and evaluating approaches to dry, pelletize or compost sludge. The group's Ag Extension portal provides research updates, fact sheets and information on (state-required) operator certification training. But the recurring hitch is making the process affordable for producers.

Previous manure management systems posed similar benefits but at significantly higher costs. Phinite's air-dryer design promises grower payback in five years. The system could also be installed on a single farm to be used and cost-shared by multiple producers. But the plan's cost efficiency is dependent on the quality and marketability of the resulting fertilizer product.

"We're conducting lab and field trials to evaluate the nutrient availability of the final product," Kulesza said. "We want to understand how this product compares to traditional inorganic fertilizer sources so we can accurately predict rate of use recommendations and how it can be best blended to meet crop nutrient needs."

Her group will conduct two-year field trials on corn at two N.C. research stations on multiple soil types to determine the product's effectiveness as a phosphorus fertilizer. The study will evaluate extractable phosphorus and soil carbon as indicators of soil fertility and soil health. Yield and grain quality will also be measured.

Selling dried waste is a path blazed long ago by municipalities. Milwaukee marketed sewage sludge as an organic granular fertilizer under the 'Milorganite' brand for 96 years. It is commonly used by home gardeners and even some golf courses. Phinite participates in entrepreneurial booster AgLaunch's Accelerator program to build market capacity for selling the dried swine fertilizer product.

"This could be a game-changer for our producers. We're starting with swine production, but this is relevant for other manure management or municipal systems too," Kulesza said. "Row crop farmers need this fertilizer to optimize their crop yield and quality. Exporting sludge as a dry product could rebalance N.C.'s nutrient abundance to benefit farmers and the environment."

University, Jennifer HowardNorth Carolina State. "Potential Seen in Sludge-Drying System." *Journal Patriot*, 21 Feb. 2022. https://www.journalpatriot.com/potential-seen-in-sludge-drying-system/article_8eb5e506-84fb-5cc6-bc5f-19aa3b34fa6e.html?utm_medium=social&utm_source=email&utm_campaign=user-share.

Cattle Math

By: Tracy Blake, Livestock Extension Agent with N.C. Cooperative Extension in Montgomery County

It was said at this year's North Carolina Cattlemen's Conference that "the most important tool a cattlemen can have on the farm is a pencil." With rising costs in feed, fertilizer, & fuel, as well as shortages in many commonly used products, it's important to consider what is necessary on your operation and what can wait. It's also important to maximize the use of your current resources and become as efficient as possible.

Stocking rates are a great place to start. Are you fertilizing pastures every year because of overgrazing? How much will it cost to buy or make hay to get your herd through the winter? It might be time to reduce your herd size in order to balance input cost and revenue.

The rule of thumb is 1.5 to 2 acres per cow calf pairing, but not every acre is created equally. Only you know the quality of your forage and the number of days you can successfully graze without hay or grain supplementation. You should also know how many pounds per acre you're generating annually in sales. With those numbers in mind, you can do a simple math equation to see if your stocking rate is appropriate for your pastures.

$$\text{Stocking Rate} = \frac{(\text{total pasture acres}) \times (\text{average pounds generated per acre})}{(.04) \times (\text{average cow weight}) \times (\# \text{ of grazing days})}$$

The .04 in the equation above represents the 4% of body weight that a cow must consume in forage each day. It is important to note, that just because you put 365 days in the equation, does not mean that your cattle can realistically graze for 365. It is possible to graze 365 days depending on soil and pasture management, but that can take years to accomplish. Most operations will graze somewhere between 275-300 days per year and put out hay for the remaining days.

There are some strategies you can try to increase your grazing days in the future. Intensive pasture rotation with temporary fence, bale grazing, and diversification of forage varieties are all excellent management strategies to improve overall pasture health. That being said, this may not be the year to try something new. If you have a system in place that works for your operation, consider your stocking rate and make adjustments accordingly. If you are comfortable trying something new, implement changes slowly to ensure success. Whatever decisions you make this year, make sure you sharpen your pencil and do the math first. For more information on stocking rates and pasture management visit NC State's Amazing Grazing Website (<https://cefs.ncsu.edu/>) or contact NRCS ([nrcs.usda.gov](https://www.nrcs.usda.gov)) for additional resources.

Resources

<https://forages.ces.ncsu.edu/2021/02/video-too-few-or-too-many-grazing-animals-defining-and-adequate-stocking-rate/>

chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1167344.pdf

Pneumonia in Goats and Sheep

By: Taylor Chavis, Livestock Extension Agent with N.C. Cooperative Extension in Robeson County

As summer approaches, the risk of goats and sheep getting pneumonia increase. Most producers think that pneumonia only occurs in the winter months, but with increasing temperatures, humidity, and the chance of wet weather makes for perfect conditions for pneumonia in the summer. Pneumonia can also occur year round and can be devastating to the whole herd.

Not only the drastic change in weather can make animals more susceptible to pneumonia, but management practices can also play a role. Kidding stress, transportation stress, overcrowding, dirty conditions, ventilation issues, lung parasites and changes in feed are also contributors. Making sure to do best management practices will reduce the chance of your animals getting sick.

What is pneumonia?

Pneumonia is an infection or inflammation of the lungs and can be caused by bacteria, virus, and parasites. It is a common respiratory problem in goats and sheep. It occurs mostly in kids, but can affect adult goats and sheep. Pneumonia causes the lungs to become inflamed and weak and can result in severe damage. There are several types of pneumonia and can be difficult to detect which type the animal may have. It is important to have a good working relationship with a veterinarian to get an accurate diagnosis and the most effective treatment.

What are the symptoms?

There are several types of pneumonia. The most recognizable form of pneumonia usually has symptoms of elevated fevers above 104 degrees Fahrenheit, yellowish-green nasal discharge, and heavy, labored breathing.

Signs of other types of pneumonia are coughing, crackle like sounds, difficulty breathing, eye discharge, nasal discharge, depression, weight loss, off-feed, and death.

Treatment Options

It is important to work with a veterinarian when diagnosing and treating pneumonia. Pneumonia can be devastating to the animals, so prompt treatment is key. A veterinarian only prescribes some medicines. Veterinarians can also provide extra label use.

Medicines that are effective in treating pneumonia include, penicillin, ampicillin, tetracycline, oxytetracycline, tyolsin, florefenicol, and ceftiofur. Trade names of these products may be Nuflor (florefenciol), Naxcel

(ceftiofur), and Excenel RTU (ceftiofur hydrochloride).

It is a good practice to keep a sick animal in a shaded, dry location with access to fresh water and hay or grass. It may be necessary to add electrolytes to the animal's water to replenish lost fluids.

Prevention

Prevention is key. Pneumonia is fast acting and developing a vaccination program with your veterinarian to fight against respiratory illnesses will decrease the likelihood of an animal developing pneumonia. Improving management practices, such as, sanitation and ventilation conditions will also help to prevent the risk of pneumonia. Be sure to always quarantine any new animals brought on to the farm before introducing them to the herd. Always have access to fresh water, hay and minerals. Minerals help to provide and enhance immune function. Be cautious about copper toxicity in sheep.

Remember that pneumonia is fast acting and can cause death pretty quickly. If an animal suddenly dies on your farm, NCDA laboratories can perform necropsies to determine the cause of death. Determining the cause of death will be useful in making management decisions for the rest of the herd.

If you have any questions, please contact your local Livestock Agent.



A necropsy of lobes from the lungs will show hemorrhagic (bloody) secretion, and possibly pus and dead tissue lesions.

Summer Grazing

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

Livestock producers and horse owners who use summer annuals for grazing and/or haying should be thinking about what to plant this year. Though this back and forth weather may have you second guessing yourself, planning now will mean success later this summer and it's getting time to put seed in the ground. Some seed may be hard to locate or even unavailable, which will mean choosing a second option. Most producers will probably choose the old standards, pearl millet or sorghum-sudan hybrids. Some producers are now relying on crabgrass as well. Others may even be trying "unique" forages such as lespedeza. Let's discuss each a little and you can decide what you would like to try.

Pearl millet is probably the annual of choice by most livestock producers. It is leafier than sorghum-sudan hybrids and doesn't present the risk of prussic acid poisoning. Pearl millet grows 5 to 8 feet tall with peak production during the months of June, July, and August. It is excellent quality forage containing 14 to 18% crude protein and 60 to 65% digestibility. Once allowed to head, millet is less palatable and animals consume mainly leaves. The dwarf varieties are easier to manage for grazing as there is less stem with the same number of leaves as the taller types.

The sorghum-sudan hybrids and sudangrass usually yield more than pearl millet on heavier soils. The hybrids grow 4 to 8 feet tall. Sudangrass is shorter with finer stems. Again, peak production is June, July, and August. Forage quality is good, usually 15% protein and about 60% digestibility, with high dry matter intake. Varieties out now known as brown midribbed, or BMR, seem to offer the best forage quality. The potential for prussic acid poisoning does exist from all varieties of sorghum-sudan hybrids and sudangrass. Avoid grazing young seedlings, young regrowth shoots, stunted growth, and frosted plants. There is no danger of prussic acid from feeding hay or silage from these plants.

Getting the most use from these forages can sometimes be a difficult proposition. They need to be grazed from 14 to 24 inches tall down to around 6 or 8 inches. Intensive grazing will help keep them at the proper height, as will mowing and splitting nitrogen applications. Mowing of stalks after grazing may be needed too. If cut for hay, they should be cut when growth is 30 to 40 inches tall. If bermudagrass is available, producers should consider grazing the annual and cutting the bermudagrass for hay.

One more comment on millets. Some producers may be considering other millets such as Japanese, Browntop, or Foxtail due to these products being somewhat less expensive than pearl millet. Most of these varieties are also much less productive. Japanese millet will yield roughly 80% of that of Pearl millet with the other being 50% or less. They are lower growing with smaller stems which may be an advantage in certain grazing situations. If you do choose to use one of these millets, all should be grazed before seed head emergence to maintain regrowth potential. **Foxtail millet should not be used for horses as it contains a toxin that can cause kidney and joint problems.** Seeding rates for Japanese millet is similar to those for pearl millet the other should be reduced by about ten pounds per acre.

More producers are using crabgrass as summer forage. Others have made it their forage of choice. Several varieties are now on the market. While it won't tolerate wet feet, crabgrass is well adapted to most soils, is drought tolerant, and responds to

moisture quicker than most other summer annuals. It produces good growth from June to September with yields ranging from 3 to 5 tons per acre. It is highly palatable and usually higher quality than bermudagrass. Digestibility ranges from 62 to 72% and protein from 7 to 18% depending on stage of growth and nitrogen fertilization.

Crabgrass can be seeded into a prepared seedbed immediately after the last spring frost. Disking or other tillage during the dormant season seems to be necessary for productive reseeding. Nitrogen is most efficiently used in split applications at 50 to 75 pounds per acre two or three times during the growing season. An initial pre-emergence nitrogen application is very beneficial to stand development and productivity. Graze when grass is 4 inches tall. If natural reseeding is desired, the stand must be allowed to produce seed sometime during the summer. This works best with rotational grazing.

Annual lespedeza is adapted to most North Carolina soils with the exceptions of deep, dry sands. It tolerates low pH and fertility but will respond to fertilization. However, too much fertilizer will cause the lespedeza to be crowded out by more vigorous, higher yielding plants in the stand. The general growth period is May to October. Peak growth occurs in June, July, and August. It is high in quality with protein levels of 14 to 18% and 60 to 65% digestibility. In fact, early cut hay may be equal to alfalfa hay. Annual lespedeza is readily grazed and has relatively high levels of phosphorus, calcium, and magnesium. Even better, it can be grazed without worrying about bloat problems. On the down side, yields are relatively low at 1.5 to 2 tons per acre in pure stands and 2 to 3 tons when mixed with grasses.

There are two main types, Kobe and Korean. Kobe type does better in the coastal plain. Both perform well in the piedmont. Marion has been the most popular variety but a new variety, called Legend, is out now that seems to be performing well in tests. In some tests, the Legend has out yielded Marion by almost double. Ideally seeds should be planted in February but can be sown February thru April. Seeding rate is 20 to 30 pounds per acre and should be broadcast or put out with a seeder. Drills generally put the seed too deep as they should be no more than an half inch in the ground, one-quarter inch or less being preferred. Grazing should be done in a rotational manner. If cut for hay, lespedeza should be cut in the early bloom stage. One note of caution, annual lespedeza can and will naturally reseed so it could become somewhat of a pest under certain conditions. But don't plan on natural reseeding for the next years grazing!

One last note, don't confuse the annual lespedeza with perennial Sericea lespedeza. It too tolerates low fertility and acid soils but is not nearly as high in quality. It is a perennial. It will spread. It can become a nuisance. Also, if allowed to get over about 18 inches tall, it will become hard, stemmy, woody, unpalatable, quality drops rapidly, tannin levels increase, and livestock will not eat it, except goats. Goats love the stuff. As a bonus, the high tannin levels have been shown to work as a natural dewormer in the goats. If very tall, they will only eat the top out and you'll need to mow the tougher stems that are left. If grazed when 6 to 8 inches tall, it is eaten well by livestock. Sericea should be cut for hay when 12 inches tall and, whether grazed or mowed, should be taken no lower than 3 inches. Lime and fertilizer improve palatability. Seedling vigor is poor and it cannot be used the first year. Sericea is not typically recommended for planting but can be utilized if already on the farm.

Has Your Horse Been Vaccinated?!

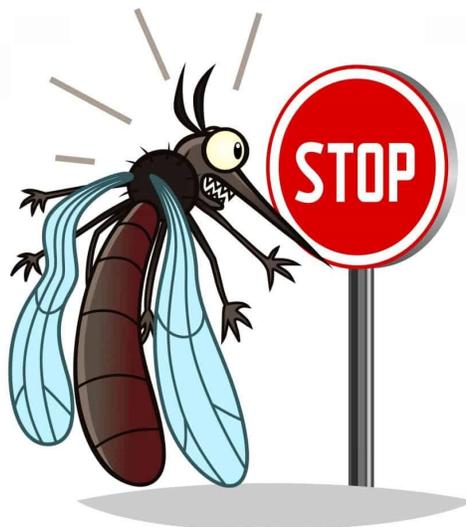
By: Anthony Growe, Livestock and Row Crops Extension Agent with N.C. Cooperative Extension in Richmond County

As we get into the summer months and see higher temperatures, it's inevitable that insect pests, such as mosquitoes will be out looking to snack on the blood of horses, humans and other animals alike. Mosquitoes should be a great concern to horse owners since these insects carry and transmit potentially lethal diseases such as EEE (Eastern Equine Encephalitis) and WNV (West Nile Virus). An unvaccinated horse can show signs of these diseases 5 to 15 days after being bitten by an infected mosquito. Symptoms of WNV include fever, weakness or paralysis of hind limbs, impaired vision, head pressing, seizures and aimless wandering. Typical symptoms of EEE include: muscle spasms, difficulty swallowing, paralysis, staggering, aimless wandering, lack of coordination and eventually death.

There is no cure for either of these diseases and mortality rates range from 30 percent for WNV and over 90 percent for EEE. Unfortunately, horses that contract EEE are often euthanized. This stresses the importance of having your horse vaccinated annually by a large animal veterinarian. Horse owners should talk with their veterinarians about establishing a vaccination schedule to protect horses from these mosquito-borne diseases as well as other diseases, such as rabies. Birds, equine and humans can become infected from a bite by a mosquito carrying the diseases, but there is no evidence that horses can transmit the viruses to other horses, birds or people through direct contact.

There are also some cultural practices horse owners can also utilize to help curb mosquito populations. Mosquitoes can breed in any area of stagnant water that lasts for more than four days, so when possible, remove any source of standing water to minimize their breeding areas. This practice can decrease the chances of exposing animals to both EEE and WNV. Some other management practices such as keeping horses stalled at night, running barn fans, and turning off lights after dusk can also help reduce exposure to mosquitoes. Providing protective gear such as fly sheets and masks can also help deter mosquitoes and other insects from irritating horses, especially at night. Certain insect repellants, containing pyrethrins can be effective if used according to the manufacturer's instructions. Many of these sprays only offer temporary relief so it is important that horse owners manage mosquitoes and other insects using an integrated approach.

Now is the time to get your horses vaccinated. Although there are few, most cases of EEE and WNV in North Carolina usually occur from June through August. If you think your horse or other equine animals may have contracted EEE or WNV contact your veterinarian immediately. If you have any questions concerning livestock, and insect management please contact your local Extension office.

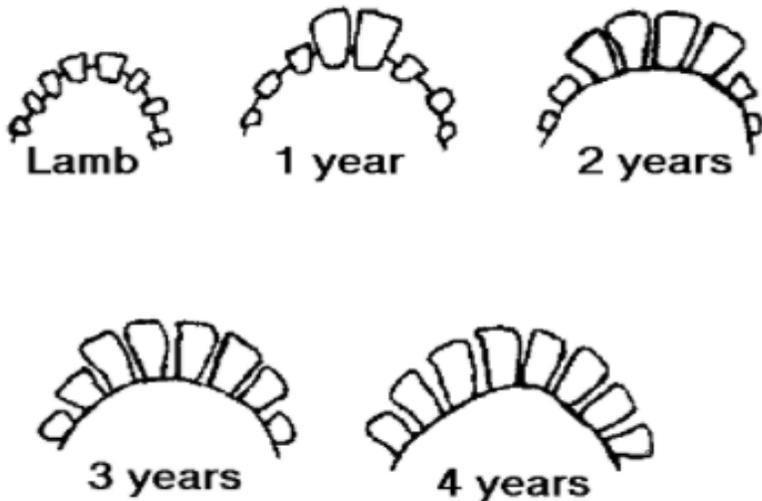


Basic Sheep Information for Youth Livestock Showmen

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

It is widely believed that sheep were first domesticated around 10,000 years ago. Prior to domesticating sheep, the dog and reindeer were domesticated. Sheep were first used for meat, skins, milk and wool. Sheep are still used for these basic purposes plus many more today. Typically, smaller animals do not live as long as larger animals so sheep much like dogs live an average of 10 to 12 years. Some sheep breeds like merino can live longer. Sheep productivity tends to peak between 3 to 6 years of age and declines after 7 years of age. Sheep are gregarious animals, meaning they like to flock together or be in a group. Sheep are defenseless for the most part against predators like coyotes and wild dogs. Sheep are also very selective in their grazing habits. Sheep have a split in their upper lip, with this they are able to pick the preferred leaves off of the plant.

Sheep can be aged by their teeth. At birth, lambs have eight baby teeth (milk teeth) or temporary incisors on their lower jaw. They do not have any teeth on their top jaw, only a dental pad. At one year of age the central pair of baby teeth are replaced by a pair of permanent incisors. At age 2, the second pair is replaced by permanent incisors. At 3 and 4 years, the third and fourth pairs of baby teeth are replaced. At four years of age a sheep has a full mouth of teeth. As a ewe ages and has lost some of her teeth she is called a broken mouth ewe. When a ewe has lost all of her teeth she is called a gummer. A sheep with no incisor teeth can still survive because it uses mostly its molars for chewing food. However, it will have a harder time grazing especially short vegetation.



Sheep Terms

Ram- Male of Breeding Age

Ram Lamb- immature male

Lamb- newborn

Lambing- act of parturition (giving birth)

Average Number Born 1.1 to 1.4 lambs per year

Weaning Age 2-3 months

Wether- Castrated Male

Ewe Lamb- immature female

Flock- group of 3 or more

Birth Weight 5-8 lbs.

Pasture Carrying Capacity 5-6 ewes and lambs per acre

Flies and Poultry Farms

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

Complaints about flies have been on the rise recently and poultry farms and the litter generated on them often get the lion's share of the blame. Any livestock operation can be an attractive breeding ground for flies and almost everyone could do something to help reduce fly populations, even homeowners. So what can you do to make sure you are being a good neighbor? The first step is to understand the basic concepts of fly reproduction, which will help identify and eliminate trouble spots.

Flies need moisture and decomposing organic matter in order for their eggs to hatch and the larva grow to adulthood. But since all animals produce manure, an excellent environment for fly eggs and larva, animal waste is usually the place to focus the most attention. For poultry growers and other livestock producers that do not use a liquid waste system, like most hog and dairy farms, the focus is on keeping the manure as dried out as possible. Maintaining litter moisture below about 25%; (which is the target to eliminate ammonia issues and maintain footpad health) will keep most fly eggs from hatching. It is also important to prevent feed spillage and promptly dispose of mortalities appropriately. Composting poultry mortalities is an approved and effective way to dispose of carcasses and if done properly will not increase fly populations. It is imperative that composters are managed to insure they are reaching the proper temperature range of at least 140⁰F so larva and eggs will be destroyed. Proper composting requires the correct carbon to nitrogen ratio, moisture level, and oxygen. Be sure to monitor for leachate from the composter and that any runoff is captured for reuse or treatment as this concentrated liquid can produce fly larva. If you need help composting mortality please contact your area poultry agent or livestock agent with extension.

Another often overlooked area on farms is simply maintaining good drainage by not allowing standing water. This can be especially problematic in a nutrient rich area such as animal pastures or where manure is stored, or spread.

Sometimes despite best management practices there may be high fly populations due to abnormally wet seasons and milder, short winters. Growers may want or need to treat for flies under these conditions. Unfortunately pesticide fly control is very challenging. Since adults have such short life spans, killing adult flies does little to control populations for more than a few days. The fact that they fly and move so frequently makes it difficult to treat adults and we typically have to resort to baits, traps or residual surface treatments all of which are hard to do in poultry houses or most animal areas for that matter. First and foremost we cannot use something that is dangerous to the animals, or that could be passed into the food chain. This factor eliminates many choices for control. Contract growers also have to make sure they are using something approved by the integrator. The other issue with pesticide control is many fly populations have become resistant to most of the products available and they are not very effective. Some poultry farms are turning to a biological control of flies with the introduction of parasitic wasps. There are several native species of parasitic wasps that prey on the common house and stable flies and researchers are studying some from Brazil and other locations to identify other predators that may be more effective at controlling fly populations. The wasps can be purchased from commercial insectaries and released periodically through the season. It is important to communicate with the company you purchase the insects from to identify the best species, and control program for success. To learn more about parasitic wasp fly control check out these sites.



<http://ars.usda.gov/is/ar/archive/aug02/flies0802.htm>
<https://entomology.ca.uky.edu/ef502>