

David Hallauer
District Extension Agent, Crops & Soils

Poultry Litter as a Fertilizer Source

Kansas isn't necessarily known for its commercial poultry production, but states around us are. The litter produced by those operations can be significant, with some regularly making its way into Northeast Kansas. If you've ever considered poultry litter as a fertilizer source, there are a few things to keep in mind as you make your decision.

First, applications are typically made based on Phosphorous (P) levels because of the high P content of most products. Doing so can help reduce surface water contamination potential.

Second, laboratory analysis is key due to significant variations in moisture and nutrient concentrations. A Southeast Kansas study of litter products found an 'average' analysis to be around 56-53-46 (N-P-K), with a fair bit of variation around that average based on source. Layer litter tends to be high in moisture, but lower in nutrient content, with study averages around 35-40-20. Broiler and turkey litter are lower moisture, with analyses approaching 60-60-55. Not all products are created equal and knowing the nutrient content via laboratory analysis (for nutrient levels *and* the chemical forms of the nutrients) is critical to ensure adequate estimation of nutrient availability and making application rate decisions.

Third, analysis isn't the whole story. Most studies suggest 45-55 percent of the total N will be available in the year of application. Differences in product, handling, and application all affect that number, however. Product incorporated on row crop ground will result in higher availability than the same product surface applied to cool season grasses. Phosphorous availability is typically considered relatively high, with credit for P in the litter often adjusted based on the P soil test levels of the land to which it is applied. Potassium (K) availability should be near 100 percent. Secondary and micronutrients are provided with litter applications as well.

There can be challenges with using poultry litter. In addition to the above considerations, variability can be increased with improperly calibrated application equipment and improper storage. Careful management of the product from source to the field is important to maintain the nutrient value of the product while preventing it from being an environmental nuisance. For additional information on calculating nutrient availability, see Estimating Manure Nutrient Availability from our KSU Bookstore at: <https://bookstore.ksre.ksu.edu/pubs/MF2562.pdf> . For more information, the studies done in SEK, drop me a line. The research encompassed 213 samples and tells an interesting story about the variability of litter products.

Ross Mosteller
District Extension Agent, Livestock & Natural Resources

Cold Weather Chicken Care

Small flock, backyard poultry keeping has gained in popularity in my time in Extension. Those who know me well, know that I'm a closet chicken guy and enjoy my mixed flock. Recent confirmation of a resurgence of Avian Influenza across the state has me thinking about poultry. We've avoided an extremely cold winter thus far, but old man winter will eventually arrive, so today I'd like to review chicken care in winter. The University of Minnesota Extension has an excellent publication on this topic.

Low environmental temperatures can lead to cold stress in poultry. A chicken's body temperature lowers when it loses more heat than it can produce. Huddling together, holding a foot up to their breast, or puffing their feathers are all signs that chickens may be cold. Prolonged cold stress can reduce performance and lead to death. Smaller, lightly feathered breeds OR those with large combs and wattles will likely need extra care to stay warm and keep healthy in cold weather.

A coop is essential to protect your chickens from precipitation, wind, and predators year-round, but becomes especially critical in freezing temperatures. There are several steps you can take to make your coop ready for winter. Provide roosts off the ground, made of material that doesn't promote frostbite, such as wood. Mangle drafts and insulate the coop to help retain heat; safely provide supplemental heat when temperatures fall below freezing. Keep coops ventilated as air exchange within a coop is key to preventing moisture build-up and poor air quality due to ammonia. Manage manure and bedding, cleaning frequently or keeping a deep bedding of four to six inches. "Tight", excessively warm coops can actually cause more issues than well-ventilated, cooler coops.

The importance of quality feed cannot be ignored! Chickens should have access to a balanced diet year-round. A balanced diet plays a key role in feather and egg production. Keep in mind that your flock's feed intake may increase up to twenty five percent during cold weather. Be sure to have extra feed on hand and top off feeders routinely. Grit needs to be provided in winter as limited access to this material outside can cause digestion issues. Limit treats and use high starch scratch grains in moderation as they should never replace a balanced ration.

Water is always a key part of the flock's diet and is necessary for digestion. Without water, chickens will stop eating. Chickens should always have free access to fresh, clean water. During cold weather, you will need to keep the water from freezing. There are several commercially available products that work well. Use caution with electricity and flammable materials, follow instructions! Roasted chicken can be a great dish, but not in a coop fire!

Continue to keep your nest boxes clean throughout the winter. Replace nesting materials as they become soiled, broken down, kicked out or thin. Collect eggs as soon as you can daily. Most chickens finish laying eggs before noon. Eggs are largely made of water and are prone to freezing. Always inspect your eggs when you collect them and discard any with cracked shells to prevent foodborne illness.

Frostbite most often affects a chicken's comb, wattles, and feet. These areas may become black or gray in color and feel brittle. The main causes of frostbite are high moisture and cold temperatures. Controlling moisture through airflow and manure management during the winter is critical. Petroleum jelly can be applied to chicken combs and wattles to help insulate them and prevent frostbite damage. If left untreated, severe frostbite can lead to loss of the comb, wattle, or foot.

Quick review:

- Provide supplemental heat when coop temperatures fall below 35 degrees F.
- Collect eggs as soon as you can and throw away any with cracked shells.
- Make sure your chickens have free access to fresh, clean water.
- Manage manure and provide ventilation to control moisture in your coop.
- Heavier standard and dual-purpose breeds can handle the cold better.

Laura Phillips
District Extension Agent, Horticulture

Watering in the Winter

When plants are dormant, it is easy to assume they do not need water to survive. While dormant plants may look dead, as they typically drop their leaves, they are still alive, just not actively growing. As with all creatures, being alive means water is essential.

One of the most important reason that plants need water in the winter is for their roots. Dormant plants look as if nothing is happening, but their roots underground are still working on maintaining energy and resource stores for the spring. While they are not taking up nearly as much water as they do during the growing seasons, the freeze thaw cycles of our winters, and the dry winds that come with it, can draw water out of roots and soil.

Drought stress in early winter can prevent the plant from undergoing the physiological changes necessary to ensure it can withstand the cold, making it more prone to frost damage. Plants that loose too much water during the winter will have a harder time maintaining and accessing their stored resources and energy to leaf out in the spring. Plants that receive no moisture during the winter are much more likely to be stunted and small in the following growing season.

The risk of winter drought stress is higher in perennials that were planted in the last 2-3 years, as they lack a robust root system and have fewer stored resources. Evergreen trees, like eastern redcedars, are also at a higher risk of winter drought compared to trees that lose their leaves, as dry winds will draw moisture from their needles, exacerbating their drought stress.

To prevent damage to your perennials, you may need to water during the winter, especially if you are not receiving any precipitation. Watering deeply and slowly will allow moisture to reach more of the root systems compared to a light sprinkle. A deep watering once a month should be sufficient for your plants during dry winter weather. If you are unsure whether or not your perennials need water, homeowners can use a metal or wooden rod to push into soil. Dry soil is harder to push into than moist. The father down the rod goes, the more moisture in your soil. If the ground is frozen, this test will not work.

For tree and shrubs planted within the last year, drill a small hole in a five gallon bucket near the bottom, then fill the bucket and let the water dribble out slowly next to the tree. Refill the bucket once so that you apply 10 gallons. Trees planted 2-3 years prior may require more water.

In terms of your older trees and shrubs, we recommend using a soaker hose. For large trees, place the soaker hose in a circle the trunk one-half the distance to the dripline, or the outermost reach of branches. On smaller trees, you may need to circle the tree several times so that only soil which as tree roots will be watered.

For newly established perennial garden bed or foundation plantings, you can hook the beginning and end of a soaker hose to a Y-adapter to equalize pressure, which encourages more uniform watering.

If you have a fall planted or overseeded lawn, an over head sprinkler will be most effective. Watering to a depth of 12 inches is more difficult with a sprinkler, but try to reach at least six inches deep.

Lastly, do not forget that mulching around your plants will help insulate their roots and retain soil moisture longer. If you have questions about keeping your plants hydrated during the winter, reach out to our office for more guidance.

Teresa Hatfield
District Extension Agent, Family and Community Wellness

Grief and Loss During the Holidays

The years have ticked by since my dad passed away in 1997. His death was unexpected, and it left a hole in my heart. The first Christmas without him was painful. I missed his joy in celebrating with the family. I missed his special egg “concoction” breakfast on Christmas morning. I missed his standard answer to the question, “What do you want for Christmas?” “A harmonica.” The years have passed, but I still miss and love him very much. Facing those first few holidays without your loved one is often difficult.

Everyone deals with grief in different ways. So, as the holidays approach, consider those grieving this holiday season. And if you are grieving, consider ways to take of yourself. Realize that the holidays might be difficult, and that’s normal. But also find a way to be kind to yourself.

- Recognize that things are not going to be the same. Start a new tradition or keep one in memory of your family member. Take a break from Facebook if it is causing stress.
- Support a grieving person in how they choose to participate in the holidays. Refrain from pressuring the family on what you believe they “should do.” But, also be careful not to isolate yourself from others. If you can’t be together in person, look for other ways to communicate, like Zoom, Skype, or Facetime.
- Share special memories of your loved one with others. Share a funny story. Include their name in your conversations. Be a good listener, and don’t be afraid of tears. Memories help our loved ones to live on.
- Support the grieving person by including them in your holiday plans. While sometimes it is difficult to know what to do or say, ensure they are still supported. Offer to help out with chores, shopping, or other holiday preparations. Listen if the person wants to talk about their loved one. Remind them that their loved one is in your thoughts as well. Check on your loved one after the holidays to see how they are doing.

The holidays can be a painful time when dealing with a loss; it’s OK to grieve for the loss of a loved one. They were an essential part of your life and your holiday memories. Cherish the beautiful times you were allowed to spend with them.

Upcoming Classes and Events

Stay Strong, Stay Healthy--Monday and Thursdays starting January 8-March 11, 10:15 a.m., Circleville Christian Church, Circleville, Strength Training for older adults. Classes meet twice a week for 16 sessions. Contact the Meadowlark Extension office at 785-364-4125 for more information; registration is required.

Powerful Tools for Caregivers—Thursdays, starting January 11, 1:30 p.m. to 3:00 p.m., Meadowlark Extension Office, 1615 Branch, Seneca. Classes meet for six weeks. Contact the Meadowlark Extension Office at 785-336-2184 for more information.

Cindy Williams
District Extension Agent, Family & Community Wellness

Do You Have Concerns About Falling?

Many older adults experience concerns about falling and thus restricting their activities. A Matter of Balance is a program designed to manage falls and increase activity levels. A Matter of Balance is a class to help manage concerns about falling and emphasizes practical strategies to help manage falls.

Matter of Balance classes will be held on Wednesday's, starting January 10, 2024 and will be held for 8 weeks, from 1:00 to 3:00 p.m. These classes are FREE!! Registration is required and is limited. Classes will be held at the St. Aloysius Parish Hall, 615 E Wyandotte Street, Meriden, KS.

At these classes you will learn to: view falls as controllable, set goals for increasing activity, making changes to reduce fall risks at home and exercise to increase strength and balance.

Who should attend? Anyone concerned about falls; anyone interested in improving balance, flexibility and strength; anyone who has fallen in the past and anyone who has restricted activities because of falling concerns.

These classes will be taught by Teresa Hatfield and Cindy Williams, Meadowlark Extension District Agents. For more information contact: Cindy Williams, 785-863-2212 or csw@ksu.edu
Class size is limited so register early! The Meadowlark Extension Offices will be closed for Winter Break December 25 to January 1, 2024.