

Planting Trees in the Fall

Fall can also be the perfect time to plant trees, specifically between early September and late October.

“The warm and moist soils normally associated with fall encourage root growth,” Upham said.

Root growth in the fall allows the tree to become established earlier, making it better equipped to withstand the stress of summer.

“Unfortunately, certain trees do not produce significant root growth during the fall and are better planted in the spring,” Upham said. A few examples are beech, birch, redbud and dogwood.

Upham reminded Kansans that fall planted trees require special care. Here are his tips:

- Make sure the soil stays moist but not soggy.
- Remember roots are actively growing.
- Mulch can be helpful in minimizing moisture loss and slowing the cooling of the soil to continue root growth.

Kansas Forest Service Tree, Shrub Seedling Sale, September 1 - October 15

For those needing to order trees, contact the Extension Office and pick up an order form.

How to Water Trees

We have a lot of areas of the state that have been dry or are becoming dry. Trees are often a challenge to water. Following are some ideas on possible methods.

Small trees: Make sure the surrounding soil is moistened as well as the root ball to encourage roots to move out of the root ball. Soil should be moistened but not waterlogged. Water the root ball and the surrounding soil to a depth of 12 inches. This can be done in a number of ways.

- Set hose close to tree and run at a slow trickle.
- Drill a small hole near the base of a 5 gallon plastic bucket. Fill the bucket with water so that the trickle of water from the hole slowly moistens the soil.
- Use a rubber soaker hose. I usually do not recommend these because they put out different rates of water along their length. If they are coiled around the tree several times, the rates even out.
- Use a Tree Gator. This is a plastic watering bag that is placed around the tree. The bag is filled with water and slowly trickles out to water the tree.
- Drip irrigation can be used if watering a line or grouping of trees or shrubs.

Larger trees: Large trees are more often more difficult to water because the root system covers a large area. Concentrate on the area under the dripline. Though roots extend much further out than this, the greatest concentration of roots is found under the dripline.

- Sprinklers can be used if lower limbs don't interfere with the pattern.
- Set a hose at a trickle and move when needed.
- Soaker hoses can be used but remember that the application rate varies along the length of the hose. Use a Y-Adapter to hook both the beginning and end of the soaker hose to help even out the flow. You will need a female by female fitting to connect the Y-Adapter to the end of the soaker hose.
- Drip irrigation is my favorite method because you- can make one set and water the tree. Also, the rate of application is uniform. Start at the base of the tree and spiral out to the dripline. Try to keep the tubing within 18 to 24 inches of the last spiral to make sure the entire area has been covered.

There is no set amount for how much to water because soils and application rate vary far too much. Gardeners can easily calculate how much to water for their conditions. Record the time you started watering and check the depth the water reaches periodically. When the 12-inch depth is reached, note how many minutes (or hours) were required. The depth can be checked with a metal rod such as an electric fence post, a wooden dowel or a screwdriver with a long tang. From then on, you can water on the clock. You still may want to double check because the starting soil moisture level will vary. (Ward Upham)

REMINDERS

- Divide perennials such as peonies and daylilies if needed.
- Prune broken and dead branches from trees.
- Remove suckers and watersprouts from fruit trees.
- Fertilize cool-season lawn (Kentucky bluegrass or tall fescue) if haven't done so yet.
- Dig gladiolus when foliage begins to yellow and air dry before storing.
- Buy spring-flowering bulbs while selection is good. Plant in late September through October

Lawn Calendar: K-State expert shares tips for healthy home lawns

Keeping a healthy home lawn can be difficult for those who are not well versed in horticulture and lawn care. Kansas State University horticulture specialist Ward Upham shared his tips for maintaining a healthy lawn in Kansas.

“We live in a transition zone where we are too warm to grow cool-season grasses well, while also being too cold to grow warm season grasses well,” Upham said.

Some examples are fescue and Kentucky bluegrass which are cool-season grasses; and bermudagrass, zoysia and buffalo grass, which are warm-season grasses.

While buffalograss may not always grow well in Kansas, it is one of the most popular turfgrass species in the state, along with tall fescue Upham said.

“Buffalograss has become more popular in recent years due to its reputation as a low maintenance grass,” Upham said.

Upham gave some tips and things to look out for in home lawns in fall, winter, spring and next summer.

Fall

- Get ready to fertilize in September and early November for cool-season grasses.
- If broadleaf weeds are an issue, spray for them in late October. Treat on a day that is at least 50 degrees Fahrenheit and do not irrigate within 24 hours.

Winter

- Winter is the time for dormant overseeding, if there is a need to fill in bare spots that were not overseeded in the fall.
- Dormant overseeding can be effective for cool-season grasses when done in small areas of a lawn from December through February.

Spring

- Crabgrass preventer can be applied between April 1 and April 15. If using a product that contains prodiamine, the preventer should be applied two weeks earlier.
- For crabgrass preventers to work, they must be watered in, meaning the product must be washed into the soil either by rain or watering.
- If broadleaf weeds are still an issue in the spring, spot treatment can be helpful.

Summer

- June is a good time to aerate warm-season lawns.
- Late July through August is the best time to apply a grub killer if experiencing grub damage.

“Summertime is very difficult for cool-season grasses because they do not have the heat or moisture stress tolerance that warm season grasses have,” Upham said.

He added that lawn care in Kansas can be tricky, but K-State Research and Extension has many [helpful publications](#), and [experts](#) to answer questions.

Lawn Seeding Best Done in September

September is the best month to reseed cool-season lawns such as tall fescue and Kentucky bluegrass. See last week's newsletter for information on how to seed or overseed. We usually recommend not planting Kentucky bluegrass past early October. However, you can get by with an early to mid-October planting for tall fescue. October 15 is generally considered the last day for safely planting or overseeding a tall fescue lawn in the fall. If you do attempt a late seeding, take special care not to allow plants to dry out. Anything that slows growth will make it less likely that plants will mature enough to survive the winter

Seedlings done after the cut-off date can be successful, but the success rate goes down the later the planting date. Late plantings that fail are usually not killed by cold temperatures but rather desiccation. The freezing and thawing of soils heave poorly rooted grass plants out of the ground, which then dry and die. Keeping plants watered will help maximize root growth before freezing weather arrives. (Ward Upham)

Test to Prevent Nitrate and Prussic Acid Poisoning

By [Sandy Johnson](#), Extension Beef Specialist, Colby

Many Kansas cattle operations rely on some type of harvested feed to use in the winter months and common among those sources is forage sorghum, sorghum-sudangrass and sudan. Forages in the sorghum family are prone to two different problems for feeding cattle, nitrate poisoning and prussic acid (hydrocyanic acid, HCN) poisoning. They are easy to get confused because both result in a lack of oxygen availability to the animal and are more likely to occur when the plant is stressed (fertility, hail, drought).

Table 1. Key characteristics of nitrate and prussic acid poisoning.

Item	Nitrate	Prussic Acid
Plant parts most affected	Base of plant	Young or new growth
Types of plants	Many, especially sorghum family, pigweed (palmer amaranth, redroot, waterhemp), kochia, oat hay	Many (> 3,000 plant species), sorghums including Johnson grass, white clover, birdsfoot trefoil, Indiangrass, <i>Cyndon</i> spp. (Bermuda)
Grazing problems	Consumption of lower plant, rarely a problem unless extremely high levels or forced to eat entire stem	Consumption of newest growth
Hay	Not impacted by drying	Not impacted by drying
Time of death	Several hours after consumption	Within minutes of consumption, treatment can rarely occur fast enough to save the animal
Blood/Oxygen	Chocolate brown colored blood, hemoglobin converted to methemoglobin and unable to carry oxygen	Blood bright cherry red, hemoglobin contains oxygen, but not available to cells

In dry areas of the state, cattle may be removed from pasture early. Bringing hungry cattle into pens with weeds can be very dangerous as the nitrate concentration may be elevated throughout the plant and animal intake high. Manure in corrals can contribute to the elevation of nitrates in the weeds. Elevated nitrates may not result in death but could cause abortions.

Our current KSU forage fact sheet on prussic acid poisoning indicates that prussic acid potential dissipates as the forage dries. It goes on to say hay or silage that likely contained high cyanide concentrations at harvest should be analyzed before it is fed. We

tend to forget this second statement and think that when the plant dries, all the cells are ruptured and any HCN is released. To confirm this, we measured dhurrin content in sorghum hay in a study last year. The dhurrin content was stable from 1 to 10 weeks of dry storage. In the plant, dhurrin (the precursor to HCN in sorghum species) and the enzyme that converts it to cyanide, are stored in separate compartments within the cell. When the plant is eaten, the compartments are ruptured, and the cyanide formed and released. Measurement of dhurrin directly is used in some research studies. However, commercial labs do not typically measure dhurrin directly. Rather the procedure includes something to stimulate cyanide release. If hay is made from forages in the sorghum family or other susceptible species, testing for prussic acid in forage that has suffered from drought, hail or fertility issues is advised. Testing is cheap compared to the cost of losing even one animal.

Management recommendations common to both prussic acid and nitrates include:

- Test first, don't gamble. Keep in mind, different labs use different tests that have different scales.
- Feed animals with a known safe feedstuff(s) before introduction to potentially problematic feeds. Don't turn in hungry.
- Ensiling will reduce concentrations of either by about half in well-made silage, but silage put up under less-than-optimal conditions could still contain very high levels. If extremely high before ensiling, a 50% reduction may not be enough to result in safe feed.

If testing before grazing, samples should reflect what the animals are expected to consume, generally leaves and upper portion of the plant. Sample a minimum of 15 sites across a given field. One method is to sample from each corner and the center by walking diagonal lines and sample plants every 50-100 steps or as appropriate for field size.

We expect levels of nitrates and prussic acid to be variable across a field, so more samples are better than less. A rule of thumb is to sample 10 to 20 % of the bales per field or cutting as a minimum. Be aware of areas of the field that exhibited more plant stress than others. If large enough areas, you may want to sample them separately. Your acreage size and feeding methods likely factor into this decision. Use a forage probe that cuts across all plant parts in a bale rather than a grab sample from individual bales or windrows. Most county extension offices can help with sampling procedures and equipment.

For more complete information on these problems see these publications [Nitrate Toxicity](#) and [Prussic Acid Poisoning](#). If you have samples with high prussic acid concentrations, and are willing to share information on variety, growth, fertility, and harvest conditions, it will be helpful as we strive to better understand this issue. For more information contact Sandy Johnson, sandyj@ksu.edu.

New 4-H year is on the horizon

With each new school year comes opportunities for growth in and out of the classroom. For those ages 7-18, now is the time to consider adding 4-H to their hands-on learning experiences, said Beth Hinshaw, Kansas State University Southeast Area Extension specialist.

“Through 4-H, young people have the opportunity to find a project area that they are really interested in, their spark,” Hinshaw said. “We have more than 30 different project areas for students to have hands-on experiences and showcase what they’ve learned in a variety of ways.”

One of those 4-Hers who is closing out on the end of her 4-H career is Annika Wiebers, a member from Riley County and a member of the Kansas 4-H Leadership Council.

“I began sewing with my grandmother when I was 5 years old by making a t-shirt dress and last year, I made my prom dress. My passion for sewing is something I would not have discovered without 4-H and now I absolutely love doing it,” Wiebers said.

She also said that 4-H pushed her into trying new projects, one of which is raising sheep. “I didn’t show any livestock until I was 15 because my friends told me I’d be good at showing sheep, so I tried it,” Wiebers said.

Beyond projects, Wiebers also grew her leadership skills by serving on the Kansas 4-H Leadership Council. In that role she helps connect others to state events such as Citizenship in Action and Kansas Youth Leadership Forum, both of which are hands-on conferences focused on citizenship, leadership and project-based learning.

“My work on projects has given me wonderful networking opportunities and helped lead me to my agricultural communications major at K-State,” Wiebers said.

For those who may be interested in learning more about 4-H, Hinshaw advised visiting the Hodgeman County Extension Office in the Courthouse to find out more about 4-H and the county 4-H clubs. Enrollment for the 2021-2022 year begins Oct. 1.

Adding Organic Materials Directly to the Garden

If the summer weather has brought an early end to your garden, consider adding organic materials directly to the soil rather than composting. Materials such as residue from lawn renovation, rotted hay, old mulch or rotted silage can be added and then tilled in. Leaves fallen from trees can be added as they become available. Most grass clippings can also be tilled in but avoid grass clipping from lawns that have been sprayed with a crabgrass killer. This product can carry over and harm the garden the following year. Crabgrass preventers applied in the spring are fine but crabgrass killers are not.

Organic materials can be spread to a depth of about 3 inches and tilled or dug in. Coarser materials such as tree leaves or garden residue should be shredded before tilling. A lawn mower with a bagging attachment can be used to shred this material and collect it in one operation. Be sure the soil is not too wet before tilling. During warm weather, the material will decompose quickly and the process can be repeated every two weeks. Later in the fall, it may take longer. This process can be repeated from now until late November to early December.

Remember that organic matter helps almost any soil. It improves clay soil by improving tilth, aeration and how quickly the soil takes up water. In sandy soils, it acts as a sponge by holding water and nutrients. (Ward Upham)

Spring color? Plant bulbs this fall for beautiful garden

Late September through October is an excellent time to plant spring-flowering bulbs such as crocus, tulips, and daffodils. These plants need to develop roots in the fall and must meet a chilling requirement over the winter in order to bloom in the spring.

Choose a planting site that has full sun to partial shade. The ideal soil would be a sandy loam, but even poor soils can be used if organic material such as peat moss, compost, or aged bark is mixed in. For example, a heavy clay can be amended by mixing in one-third to one-half organic material. Soil pH should be between 6.0 and 7.0.

Bulbs need good aeration as well as good drainage for proper development. It is best if the bulbs are given 12 inches of prepared soil. If one-third organic material were added, this would require mixing 4 inches of organic material with 8 inches of soil. Incorporate about 3 pounds of a complete fertilizer such as a 5-10-5 per 100 square feet during preparation or fertilize according to soil test.

Planting depths vary depending on the size of the bulbs. For example, tulips and hyacinths are set about 6 inches deep, and daffodils are put 6 to 8 inches deep. Smaller bulbs are planted shallower. As a rule of thumb, bulbs are planted two to three times as deep as their width. Planting depth is the distance from the bottom of the bulb to the top of the soil. Large bulbs are normally spaced 4 to 6 inches apart, and small bulbs about 1 to 2 inches. Planting in clumps or irregular masses produces a better display than planting singly.

After placing the bulbs at the proper depth, replace half the soil and add water. This will settle the soil around the bulbs and provide good bulb/soil contact. Add the remaining soil and water again. Although there will be no top growth in the fall, the roots are developing, so soil needs to be kept moist but not soggy. Mulch can be added after the soil has frozen to prevent small bulbs from being heaved out of the soil by alternate freezing and thawing. (Ward Upham)

Moving Houseplants Inside for the Winter

Many people with houseplants move some of them outside for the summer to give them better growing conditions and help them recover from the stress of an indoor environment. If the plants haven't been brought inside yet, now would be a good time. Plants that have spent the summer outside should be inspected for insects and disease before bringing them inside. A sharp spray from a garden hose can remove insects or mites from houseplant foliage. Insects in the potting soil can be forced out by soaking the pot in a tub of lukewarm water for about 15 minutes.

Houseplants that have been kept outdoors are accustomed to receiving much more sunlight than they do indoors. So how do we help houseplants acclimatize to the lower light levels inside? Houseplants brought in from outside should be started out in an area of the home that receives plenty of light, and then gradually moved to their permanent, darker location. This process should take four to eight weeks depending on the degree of difference in light levels between the initial and final location of the plant.

Understanding plant processes allows us to anticipate potential problems. Acclimatization gives houseplants a greater chance of retaining leaves and avoiding the stress of completely replacing them. (Ward Upham)

Root Cellars

Root cellars have been used for centuries to help store food during cold weather. Produce that have traditionally been stored in root cellars include apples, pears, onions, garlic, turnips, squash, carrots, potatoes and various other fruits, nuts and vegetables. Remember that potatoes stored below 40 degrees will often lead to starches being converted to sugars, which will give tubers an undesirable sweet taste. Placing potatoes at room temperature for 2 to 3 days will allow sugars to be converted back to starches and remove the objectionable taste.

What is most important for storing produce? The two variables that are most important to control when using a root cellar are temperature and humidity.

Temperature: For best results, we want to keep the temperature between 32 and 40 degrees. Allowing the temperature to rise above 40 degrees will cause the produce to deteriorate more quickly.

Humidity: Keeping the humidity level between 85 and 95% will keep produce from shriveling due to moisture loss.

There are number of methods and materials used to make root cellars. For example, a root cellar can be made from straw bales, trash cans, buried barrels, drain tiles, trenches, crawl spaces, new septic tanks, earth pits, outbuildings and basements. Building plans are beyond the scope of this article, however, an internet search can provide plenty of ideas. (Ward Upham)

Harvesting Sweet Potatoes

Sweet potatoes should be harvested no later than the first fall freeze because cold temperatures can damage the sensitive roots. However, you may want to harvest earlier than normal. Test dig a hill to see if they are the size you want.

Sweet potatoes should be cured after being dug. The digging process often damages the tender skin, and curing helps these small wounds heal. Place the roots in a warm, humid location for 5 to 10 days immediately after digging. A location with a temperature around 85 to 90 degrees is ideal. A space heater can be used to heat a small room or other area. Raise the humidity by placing moist towels in the room. The curing process not only heals wounds but also helps convert starches to sugars. This process improves the texture and flavor of the roots.

Sweet potatoes should be stored above 55 degrees. Storage at temperatures below that injures the roots, shortens storage life and gives them an off flavor. (Ward Upham)

Rotation of Vegetable Crops

Rotating vegetable crops is a standard way of helping prevent disease from being carried over from one year to the next. Rotation means that crops are moved to different areas of the garden each year. Planting the same crop, or a related crop, in the same area each year can lead to a build-up of disease. Also, different crops vary in the depth and density of the root system as well as extract different levels of nutrients. As a rule, cool-season crops such as cabbage, peas, lettuce and onions have relatively sparse, shallow root

systems and warm-season crops such as tomatoes, peppers and melons have deeper, better developed root systems. Therefore, it can be helpful to **rotate** warm-season and cool-season crops.

As mentioned earlier, it is also a good idea to avoid planting closely related crops in the same area as diseases may be shared among them. For example, tomatoes, potatoes, peppers and eggplant are closely related. Also, broccoli, cauliflower, cabbage and brussels sprouts share many characteristics in common. For example, do not plant cabbage where broccoli was the previous year or tomatoes where the peppers were.

So, why is this important to bring this up in the fall? Now is the time to make a sketch of your garden so that the layout is not forgotten when it is time to plant next year. (Ward Upham)

Ornamental Sweet Potatoes

We often receive the question as to whether ornamental sweet potatoes are safe to eat. The answer is yes. Note that they are chosen for ornamental qualities rather than flavor and so may not have the quality nor the nice shape of our traditional types. See the accompanying article on how to cure them. (Ward Upham)

Garden Spiders

People may become concerned when they see a large, noticeable spider setting up shop in or near the garden. These garden spiders feed on insects and are considered beneficial.

There are actually two common species of garden spiders in Kansas that are active during the day. The yellow garden spider has a black abdomen with yellow to yellow-orange markings. The black legs have a yellow or reddish band.

The banded garden spider has numerous bands on both the abdomen and legs. Those on the abdomen are alternating white and dark bands. The legs have alternating black and orange bands. Both of these spiders are orb weavers that spin large webs with the typical spider web shape.

Though these garden spiders have poor eyesight, they are extremely sensitive to vibrations that pass through the web and use this sensitivity to capture their prey. Since these spiders are beneficial and harmless to humans, it is recommended that they be left alone. (Ward Upham)