

Horticulture Tips

April 2008

Oklahoma Cooperative Extension Service
Division of Agricultural Sciences and Natural Resources
Oklahoma State University

Garden Tips for April

David Hillock

Fruit and Nut

- Don't spray insecticides during fruit tree bloom or pollination may be affected. Disease sprays can continue according to schedule and label directions. ([EPP-7319](#))
- Avoid using Sevin on apple trees until 30 days have passed from bloom or fruit is near the size of a quarter.
- Control cedar-apple rust. When the orange jelly galls are visible on juniper (cedar), following a rain, begin treating apple and crabapple trees with a fungicide. ([EPP-7319](#), [EPP-7611](#))
- Fire blight bacterial disease can be controlled at this time. Plant disease-resistant varieties to avoid diseases.
- Continue spray schedules for disease prone fruit and pine trees.

Tree and Shrub

- Proper watering of newly planted trees and shrubs often means the difference between success and replacement.
- Remove any winter-damaged branches or plants that have not begun to grow. Prune spring flowering plants as soon as they are finished blooming. ([HLA-6404](#), [HLA-6409](#))
- Control of powdery mildew disease can be done with early detection and regular treatment. Many new plant cultivars are resistant. ([EPP-7617](#))
- Leaf spot diseases can cause premature death of foliage and reduce plant vigor.

Flowers

- Most bedding plants, summer flowering bulbs, and annual flower seeds can be planted after danger of frost. This happens around mid-April in most of Oklahoma. Hold off mulching these crops until spring rains subside and soil temperatures warm up. Warm season annuals should not be planted until soil temperatures are in the low 60s.
- Harden off transplants outside in partial protection from sun and wind prior to planting.
- Let spring flowering bulb foliage remain as long as possible before removing it.

Vegetables

- Wait a little longer for it to warm up before planting cucurbit crops and okra.
- Plant vegetable crops in successive plantings to ensure a steady supply of produce rather than harvesting all at once.
- Cover cucurbit crops with a floating row cover to keep out insect pests. Remove during bloom time.
- Watch for cutworm damage and add flea beetle scouting to your list of activities in the vegetable garden.

Garden Planting Guide for Warm-Season Vegetables

<u>Vegetable</u>	<u>Time to Plant*</u>	<u>Days to Harvest</u>	<u>Method of Planting</u>
Bean, Lima	April 15-30	90-120	Seed
Beans, Green or Wax	April 10-30	50-60	Seed
Beans, Pole	April 10-30	60-90	Seed
Cantaloupe	May 1-20	80-100	Seed or Plants
Cucumber	April 10-30 or later	50-70	Seed or Plants
Eggplant	April 10-30	80-90	Plants
Okra	April 10-30 or later	60-70	Seed
Pepper	April 10-30 or later	90-110	Plants
Pumpkin	April 10-30	90-120	Seed
Southern Pea	May 1-June 10	85-100	Seed
Squash, Summer	April 10-30 or later	40-60	Seed or Plants
Squash, Winter	May 15-June 15	110-125	Seed or Plants
Sweet Corn	Mar. 25-April 30	80-100	Seed
Sweet Potato	May 1-June 10	100-120	Plants
Tomato	April 10-30	70-90	Plants
Watermelon	May 1-20	90-120	Seed

*These dates indicate planting times from southeast to northwest Oklahoma. Specific climate and weather may influence planting dates. For cool-season vegetables, the soil temperature at the depth where the seeds are planted should be at least 40°F.

Landscape - General

- Hummingbirds arrive in Oklahoma in early April. Get your bird feeders ready using 1 part sugar to 4 parts water. Do not use red food coloring.
- Keep the bird feeder filled during the summer and help control insects at the same time.
- Lace bugs, aphids, spider mites, bagworms, etc. can start popping up in the landscape and garden later this month. Keep a close eye on all plants and use mechanical, cultural and biological control options first.
- Be alert for both insect pests and predators. Some pests can be hand picked without using a pesticide. Do not spray if predators such as lady beetles are present. Spray only when there are too few predators to be effective.
- Schedule a group tour of the *Oklahoma Gardening Studio Gardens* in Stillwater between the first of May and late October!

Lawn

- Warm-season grass lawns can be established beginning late April from sprigs, plugs or sod. ([HLA-6419](#))

- Warm-season grasses can be fertilized four times per season using one pound of actual nitrogen per 1,000 sq. ft. in each of four applications. Apply one pound in April, May, June and September. Water in nitrate fertilizers. [HLA-6420](#))
- Mowing of warm-season lawns can begin now ([HLA-6420](#)). Cutting height for Bermuda and zoysia should be 1 to 1½ inches high, and buffalograss 1 ½ to 3 inches high.
- Damage from Spring Dead Spot Disease (SDS) becomes visible in bermudagrass ([EPP-7665](#)). Perform practices that promote grass recovery. Do not spray fungicides at this time for SDS control.
- Grub damage can be visible in lawns at this time. Check for the presence of grubs before ever applying any insecticide treatments. Apply appropriate soil insecticide if white grubs are a problem ([EPP-7306](#)). Water product into soil.

Planting Fruit Crops

Eric T. Stafne

Most of the fruiting crops that are common in Oklahoma are planted in the spring. Some plants, in some locations, can be put out in the fall, but that is a risky strategy. If the newly planted fruit tree (or vine or bush) is hit by an early freeze or deep mid-winter cold, it could be severely damaged. Therefore, the spring is somewhat safer, although one delays establishment a bit by doing this.

There are two different plant stages to consider when planning a fruit planting: are the plants dormant or are they actively growing? Dormant plants can be set out as early as February or March. These types of plants come from a nursery in a quiescent state and will remain dormant until enough heat units are accumulated for budbreak. Dormant plants do quite well, as long as the root system is not allowed to dry out or get damaged by freezing temperatures. The planting area should be prepared before receipt of dormant plants, as they should be placed in the ground soon after they are received. One can heel in the plants or store them in a cool area until planting occurs (as long as the root system is kept moist).

Actively growing plants have received enough heat units to break bud. At this stage they are highly susceptible to freezing temperatures. Even temperatures as low as 31°F can cause severe damage and temperatures below 28°F could be catastrophic. Therefore, it is imperative that actively growing plants are put out in the field after the frost-free date. For most areas this is about April 15, later in the northern part of the state and earlier in southern areas. Frosts in central Oklahoma have been observed to occur as late as early May, so there is no guarantee that damage won't occur, but for the most part planting after April 15 is a safe bet.

Because the plant is going into a new environment entirely different from the nursery conditions, it will be in shock until it becomes acclimated. Some fruit plants may require pruning after they are set out. This will help to balance the root and above-ground growth. Some fruit plants like blackberry don't necessarily require this, but others like blueberries would find it beneficial.

Also, it is unnecessary to fertilize with nitrogen at planting – allow the plant to get acclimated to its surroundings first. A slow release fertilizer likely won't hurt a newly planted tree or vine, but other formulations might (especially highly sensitive plants like blueberries). So, wait four to six weeks after planting to give a dose of nitrogen fertilizer.

Above all, make sure the newly planted fruit crop has adequate water. Grape and blackberries are generally drought tolerant, but blueberries and strawberries are not. Any stress on a new plant will cause a delay in development and could impact it for its entire life.

Protecting Vegetables from Frost

Kim Rebek

Many gardeners like to get a jump start on their vegetable gardens, setting out plants and sowing seeds as soon as the ground is workable. And although many plants can safely be planted in early spring, fluctuations in temperature still occur. And while we utilize the average last frost dates for our area to schedule planting, late frosts can and do occur throughout April. But that does not mean we must wait to plant. There are a variety of materials that we can use to protect plants from late frosts.

It is important for gardeners to watch the weather reports this time of year and especially keep an eye out for predicted frosts. If a frost is suspected, simply covering plants in the late afternoon or early evening can protect plants from freezing night temperatures. Some covers can be left over plants from the time of emergence until the threat of frosts has passed.

Floating row covers are a valuable tool in protecting plants from frost. These are made of lightweight polyester and allow light, air and water to pass through. They do not have a large effect on moderating temperature; however they will protect plants from frost. Row covers can be left on throughout a plant's development and are also used to protect plants against certain insect pests, such as flea beetles. Because of their light weight, they do not require a supporting structure, but rather lay directly over the plants. You can continue to cover self-pollinated crops for the entire production period. Crops that are pollinated by insects need to be uncovered during flower production. Agribon, Reemay and Interfacing are examples of commercially available row covers. They cost around \$10 for a 25' by 5' section.

Cloches have long been used to protect plants from frost, cold and wind. Cloche is the French word for bell, as many early cloches were bell-shaped jars. You may remember your grandparents covering tomato seedlings with glass bell jars. This method is still useful for smaller gardens or if you do not wish to invest in row covers or other, more expensive options. But because glass is expensive and breakable, use plastic milk jugs or juice bottles instead – these are free from your recycling pile! Cut the bottoms off the container and place one over each plant, pressing it firmly into the soil. The removable caps make for great ventilation devices, simply remove the cap when the weather is warm, and replace in the evening. You can also re-use empty pickle jars and other large glass containers if you are not concerned about breaking the jars. Remove cloches when the threat of frost has passed. Temperatures beneath the cloche can rise quickly on a warm, sunny day. Be sure to remove cloches in warm weather.

The wall-o-water is a newer product that can be used to get anywhere from a 3- to 6-week jump on spring and produce crops a month early or more. These water-filled plastic rings provide extra warmth to get your warm-season transplants through cool spring nights. They are effective down to temperatures of 16°F. It is recommended you set up the wall-o-water one week prior to planting to warm the soil. Fill the wall-o-water only two-thirds full with water, allowing the top to fold in like a tee-pee. Plant small 3-4 inch transplants within each ring. After several weeks, the plant will reach through the top opening, at which point you fill the remained of the wall-o-water. You can leave the wall-o-water in place up to a month after the last frost, providing extra warmth on cool nights. Each wall-o-water encircles an 18-inch area, costs about \$2-\$3 each, and lasts 3-5 years.

Finally, household items such as sheets and lightweight blankets can temporarily be used to cover plants when frost threatens. These materials do not let light penetrate and may be heavy, thus they should be removed each morning as temperatures warm.

Planting Beneath Walnut Trees

Kim Rebek

Black Walnuts (*Juglans nigra*) and the closely related Butternut (*Juglans cinerea*) produce a chemical called juglone that can be toxic to many plants. This is how the trees manage competition from other plants, ensuring they have ready access to water and nutrients. This type of chemical competition is called allelopathy. The chemical is produced in the trees roots, and so the toxic zone extends throughout the root zone, which can be up to a 60 foot radius around a mature tree.

If you have a black walnut and have lost plants beneath it in the past, juglone is most likely the cause. But luckily, there are many plants that will perform well beneath walnuts. The first thing you need to do is determine whether or not you actually have a black walnut. There are many reasons why plants fail, such as nutrient stress or low light, so you want to make sure you understand the true cause of the problem.

To identify the tree you want to look at the branch and leaf patterns. The pattern of branching is classified as either opposite or alternate. Opposite branches arise directly across from one another, while alternate branches are staggered along the stem. The same terms also apply to how the leaves are arranged along the stem. Walnuts have an alternate branching pattern the branches and leaves are not across from one another, but staggered.

Leaves are either simple or compound. Maples and oaks have simple leaves; the entire leaf is composed of one blade. Walnuts have compound leaves. The leaf is broken into many smaller sections called leaflets. There are two main types of compound leaves, palmate and pinnate. Palmately compound leaves have a fan or palmed shape and all the leaflets attach to a single base point. Pinnately compound leaves have a more linear form, with the leaflets attached to a central axis called a rachis. Walnuts have pinnately compound leaves.

Walnut leaves have an odd number of leaflets, usually between 11 and 23 and each leaflet is toothed or serrated along the edge. You might also find the walnut fruits on mature trees. The fruits have a tough outer husk that starts green and turns to yellow-black when ripe.

To summarize, walnuts have:

- an alternate branching pattern
- pinnately compound leaves
- between 11 and 23 toothed or serrated leaflets

Plants that grow beneath walnuts:

This is just a partial listing of the many plants that grow well beneath the black walnut.

- Vegetables: Corn, squash, beans, melons and carrots
- Bulbs: daffodil, grape hyacinth, tulip, and crocus
- Annuals: *Zinnia* species and fibrous *Begonia*
- Perennials: hosta, Solomon's-seal, Lamb's-Ear, and the clematis cultivar 'Red Cardinal'
- Shrubs and trees: Japanese maple, red bud, and the Rose of Sharon Hibiscus

Lace Bugs

David Hillock

Lace bugs, a pest, should not be confused with lacewings, a beneficial insect. Lace bugs have beautifully sculptured wings that resemble an intricate, lacy network. There are also lacy extensions on the front part of the body and a lacy hood that extends out over the head.

Various species of lace bug exist in all parts of Oklahoma where host plants are present. Some common species found in Oklahoma include the sycamore lace bug, oak lace bug, elm lace bug and hawthorn lace bug.

Lace bugs overwinter as adults in bark crevices, branch crotches or similar protected areas of the host plants. Adults emerge in the spring at the same time the leaves develop on the host plant. The adults attach eggs to the underside of leaves with a sticky black substance. Nymphs hatch in a few days and begin feeding on the foliage by sucking out the plant juices. A complete life cycle occurs in about 30 days; there are several generations per year.

Feeding causes chlorotic (yellow) spots to appear on the upper surface of a leaf, a similar symptom of leafhopper and spider mite damage. A positive ID for lace bug can be confirmed by the presence of shiny black droplets of excrement on the undersides of damaged leaves. The cast skins of nymphs often remain on the underside of leaves too.

There are several natural enemies of lace bug including lacewing larvae, assassin bugs, spiders and predacious mites. These predators often keep infestations under control. Sometimes infestations can get out of control, however, and treatment with an insecticide might be needed. Several ornamental insecticides are available and provide effective control, but thorough coverage, especially to the undersides of leaves is critical.

More Food in Less Space

(Courtesy of National Garden Bureau, original author Liz Ball, edited for Oklahoma)

Back in the 1970s the average backyard vegetable garden was about 1,000 square feet. Now it is typically 200 square feet. New houses tend toward smaller yards, so the farm model of growing food and the generous space it required has become obsolete. Contemporary vegetable gardening borrows the best design ideas from the past, while incorporating new technology and materials to make smaller vegetable gardens easier to manage, and more productive.

Two ways to coax more production from limited space is by borrowing from old cultures the concepts of raised beds and vertical growing. Shifting a garden layout from rows to raised beds almost doubles the available growing area, as most of the ground formerly devoted to paths is dedicated to production. Growing food vertically too exploit the airspace above the garden again almost doubles its effective production area. This configuration facilitates the use of soaker hose and drip irrigation, woven fabric mulches and other space age materials to dramatically reduce the amount of work involved in producing crops.

Raised Beds

Raised beds are permanent, rectangular plots holding soil that remains loose and rich because it is never compacted by foot traffic. Paths between the beds are also permanent. While they require a significant investment of physical labor to dig and box, they do not have to be dug again every year. Raised beds promise years of virtually instant bed preparation and easy planting each spring. Try one bed at first. Dig it in the fall when the weather is cool, then add more beds over time. Because their excellent soil permits intensive planting, it will not be necessary to have as big a garden overall as before.

Making Raised Beds

Lay out the bed's dimensions with stakes and string. A width of 3 to 4 feet is a comfortable reach from either side for most adults. Lengths of 8 or 12 feet (conveniently allowing for evenly spaced trellis supports every 4 feet) are most adaptable to the typical backyard.

Begin digging with the string at one end, cultivating the soil to a depth of at least a foot – deeper is better. If working in a bermudagrass turf area, the grass and other difficult to control weeds should be killed first and removed from the area. Working backward to avoid stepping on newly dug soil, turn over shovelful of soil and mound them in a loose pile within the measured dimensions of the bed. This is a good time to incorporate organic material such as compost, peat moss or chopped leaves into the soil. Overachievers may wish to double dig the bed, but it is not required.

Designate at least 3 feet for path area around the bed. Scrape off the valuable top few inches of topsoil from the paths and mound it on the newly dug bed to increase its height, then spread wood chips or gravel, or lay pavers in the path area to eliminate future problems with mud. Take and level the surface of the mounded soil in the bed and it is ready for planting.

A layer of straw or chopped leaves will protect the soil over the winter and discourage erosion of the mounded soil into the paths. While it is not necessary, boxing each bed with wooden planks, landscape timber, blocks or other materials prevents erosion most effectively, makes beds easier to manage, looks more attractive, and accommodates those with limited abilities. Boxed sides also provide a place to fasten fixtures to permit quick attachment of sturdy vertical supports for various crops. Beds should be a minimum of 6 inches high; however, beds 18 to 24 inches accommodate less agile or physically limited people.

The Value of Vertical

Another way to maximize production in limited space is to exploit the air space above the garden bed. Combined with raised boxed beds the potential for dramatically increased production with vertical growing is enormous. Plants grown vertically can be planted more closely together and produce more in the rich, friable soil of a properly managed raised bed. Because they take up only a few inches of surface soil, there remains lots of bed left to be intensively planted with low-growing vegetable plants. Orienting beds on a north-south axis assures that plant-laden trellises do not block the sun from lower growing plants as it moves from east to west across the yard during the day. Planting tall plants on the north end of the beds also helps maximize sunlight for lower-growing plants.

Erecting vertical supports is always a time consuming problem. Free-standing ones provide flexibility in placement, but are precarious, tending to collapse part way through the season from the weight of maturing crops. The planks that enclose a raised bed offer a convenient place to attach year round fixtures that make setting up and taking down trellises quick and easy. They make it possible to have a flat trellis system that runs along either side of the bed that is stable, yet easily reconfigured to facilitate crop rotation.

Establishing a Trellis System

There are lots of ways to fasten trellis poles to the wooden planks of boxed beds. One tried and true method is to fasten 12 inch lengths of PVC pipe, 1½ to 2 inches in diameter, with plumber's brackets at four foot intervals along the insides of the long sides of the bed. Dig the PVC pipe into the soil so the opening is flush with the top of the board. Sturdy vertical poles, wooden or PVC, up to 8 feet long, fit easily and quickly into the PVC pipe fixtures for instant stability. Since their first 12 inches sit in the fixture below the soil level, the trellis will actually be 7 feet tall, about maximum reach for most adults.

Next, cut 4 foot lengths (the distance between the vertical poles) of furring strips or similar 1 by 2 inch slats to make crosspieces to make panels of trellis, which fasten to the vertical poles at top and bottom. The trellis material itself may be hand-strung wire or twine, or commercial netting made of nylon or plastic. Mesh with 4 to 6 inch holes allows for easy access when picking large vegetables such as tomatoes. Fasten it to the crosspieces with a staple gun to form panels that are easily mounted and removed from the vertical poles, rolled up and stored for next year. Drill holes at the ends of the crosspieces and at the tops and bases of the poles for attaching panels of trellis netting with screw bolts and wing nuts.

Reasons to Use Boxed Raised Beds

- Save space

- Maintain soil texture
- Do not need annual digging
- Heat up earlier in the season
- Use water and fertilizer more efficiently
- Improve soil drainage
- Permit intensive planting
- Are neat and accessible
- Support trellises securely
- Permit use of shade cloth or plastic tents
- Avoids soil compaction due to foot traffic

Benefits to Vegetables of Vertical Growing

- Better air circulation
- Better access to sunlight
- Less exposure to soil pathogens
- Easier to harvest
- Dry off faster after rain
- Less likely to be curled or deformed

For more information about raised bed gardening see OSU Fact Sheet [HLA-6033](#).

2008 Southern Region Master Gardener Conference – June 18-21, 2008

David Hillock

This year the Oklahoma County Master Gardeners are hosting the Southern Region Master Gardener Conference, which will take the place of our state conference this year. The theme for the conference is *Gardening in Native America*. The conference will be held at the Clarion Meridian Hotel and Convention Center in Oklahoma City. The conference will include pre- and post-conference tours, breakout sessions, a banquet at the National Cowboy and Western Heritage Museum, trade show and other events.

Keynote speakers – Dr. William Welch, Dr. Carl Whitcomb, Steve Owens, Steve Dobbs and Dr. Mike Schnelle – as well as many breakout session speakers and topics will be offered. To see breakout topics and speakers visit our website www.mastergardener2008.com/.

Registration is now officially open! To register and view more information about the conference, go to our conference web site at www.mastergardener2008.com/.

Hope to see you all there! For more information contact David Hillock, Master Gardener Coordinator, Oklahoma State University, Department of Horticulture & Landscape Architecture, 358 Ag Hall, Stillwater, OK 74078; Email: david.hillock@okstate.edu; phone: 405-744-5158.

Plow and Prep Field Day 2008

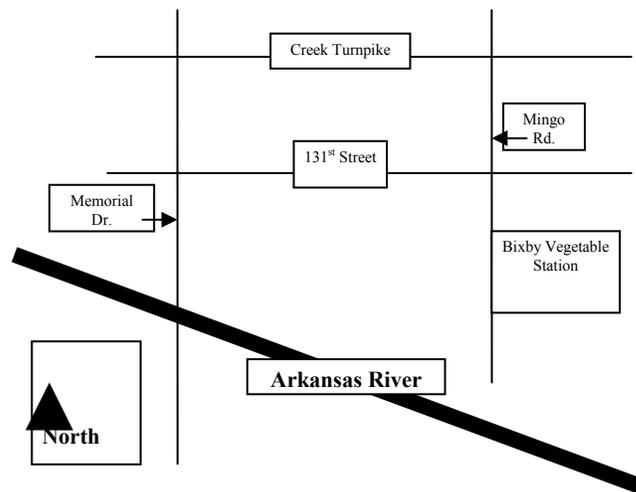
Lynn Brandenberger & Sue Gray

The 2008 Plow and Prep Field Day is set for 1:00 to 3:30 p.m. Saturday, April 12, 2008 at the Vegetable Research Station in Bixby with an alternate rain-day set for Saturday, April 19, 2008. For further information contact Sue Gray Tulsa County Horticulturist at 918-746-3705. That said, what is Plow and Prep Field Day? It's a field day that targets fresh market vegetable growers and County Extension Educators. This year's Plow and Prep Day will again focus on field preparation for fresh market vegetables including soil preparation, plastic mulch application, and lots more including:

- Soil sampling
- Drip irrigation
- Food safety basics
- Weed control basics
- Where to find crop specific information
- How to setup and calibrate small sprayers (hand-pump & others)

Directions to the OSU Vegetable Research Station near Bixby, OK

The Oklahoma State University Vegetable Research Station is located at: 13711 South Mingo Road in Bixby, a map is included for your convenience. The Station phone number is: 918-369-2441.



Upcoming Horticulture Events

**Landscape Plant In-Service Extension Educator Training
May 20, 2008, Sunshine Nursery, Clinton, OK**

For more information, please contact Mike Schnelle at 405-744-7361 or mike.schnelle@okstate.edu.

Landscape IPM Conference
May 28, 2008, OSU Botanical Garden, Stillwater, OK

Bixby Field Day
June 26, 2008, Oklahoma Vegetable Research Station, Bixby, OK

For more information, please contact Lynn Brandenberger at 405-744-5408/
lynn.brandenberger@okstate.edu or the Research Station at 918-369-2441.

Turf and Landscape Field Day
September 17, 2008, OSU Botanical Garden, Stillwater, OK

Greenhouse IPM Conference
November 5, 2008, OSU, Stillwater, OK

For more information about upcoming events, please contact Stephanie Larimer at 405-744-5404
or stephanie.larimer@okstate.edu.