

## STARTING GARDEN TRANSPLANTS FROM SEED

January is often a cold and dreary month for many gardeners. However, planning for and starting vegetables and flower transplants from seed can make this a much more interesting time of year. Following are the steps needed to be successful in seed starting.

**Purchase Recommended, Quality Seed:** Start by taking a look at our recommended varieties at <http://www.hfrr.ksu.edu/p.aspx?tabid=731>

These plants have proven themselves across the state of Kansas and this is a good place to start when deciding what to plant. However, also talk to your neighbors, friends and garden center about what has worked well for them. Obtain your seeds from a reputable source including garden centers and seed catalogs. If choosing seeds from a business that does not specialize in plants, pay attention to the package date to make sure the seed was packaged for the current year.

**Determine the Date to Seed:** There are two pieces of information that needs to be known in order to determine the date to seed transplants: the target date for transplanting outside and the number of weeks needed to grow the transplant. The target date for transplanting the cool-season crops such as broccoli, cabbage, cauliflower and onions are the end of March to the beginning of April. Warm-season crops and most annual flowers are usually planted about May 10.

**Sowing Seed:** Do not use garden soil to germinate seed as it is too heavy and may contain disease organisms. Use a media made especially for seed germination.

**Keep Seed Moist:** Seed must be kept moist in order to germinate. Water often enough that the media never dries. Using a clear plastic wrap over the top of the container can reduce the amount of watering needed. Remove the wrap after the seedlings emerge.

**Light:** Most plants will germinate in either darkness or light but some require darkness (Centurea, Larkspur, Pansy, Portulaca, Phlox and Verbena) and others require light (Ageratum, Browallia, Begonia, Coleus, Geranium, Impatiens, Lettuce, Nicotiana, Petunia and Snapdragon).

All plants require adequate amounts of light once emergence occurs. South facing windows may not provide adequate amounts and so fluorescent fixtures are often used. Suspend the lights 2 to 4 inches above the top of the plants and leave the lights on for 16 hours each day.

**Temperature:** The temperature best for germination is often higher than what we may find in our homes especially since evaporating moisture can cool the germination media. Moving the container closer to the ceiling (top of a refrigerator) can help but a heating mat is best for consistent germination. After plants germinate, they can be grown at a cooler temperature (65 to 70 degrees during the day and 55 to 60 degrees at night). This helps prevent spindly transplants.

**Plant Movement:** Plants react to movement. Brushing over the plants with your hand stimulates them to become stockier and less leggy. Try 20 brushing strokes per day. However, brushing will not compensate for lack of light or over-crowding. Plants grown under inadequate light will be spindly regardless of any other treatment.

**Hardening Transplants:** Plants grown inside will often undergo transplant shock if not hardened off. Plants are hardened off by moving them outside and exposing them to sun and wind before transplanting occurs. Start about two weeks before transplanting and gradually expose the plants to outside conditions. Increase the number of hours and degree of exposure over the two-week period.

## ***Using Old Garden Seed***

Seed stores best if kept in a cold, dark, dry location. We normally consider seed will remain viable for about 3 years under these conditions though there are exceptions. For example, members of the carrot family (carrots, parsnips and parsley) are short-lived and are usually good for only 1 to 2 years. If you are unsure of viability and have plenty of seed, there is an easy method of determining how good your seed is. Place 10 seeds on a paper towel moistened with warm water and cover with a second moistened towel. Roll up the towels and place inside a plastic bag with enough holes for air exchange but not so many that the towels dry quickly. Place the bag in a warm place such as the top of a refrigerator. Remoisten towels with warm water as needed. After the first week, check for germination. Remove sprouted seed and check again after another week. Add these numbers together to determine the percent germination.

## ***Starting Onion Plants Indoors***

It can be difficult to find specific onion varieties in sets or transplants, so growing from seed may be a preferred option. Onions are one of the first plants to be seeded for transplanting because they take a significant amount of time (6 to 8 weeks) to reach transplant size and because they can be set out relatively early (late March in much of eastern and central Kansas). Therefore, we want to start onions in mid- to late-January. Onion seed should be placed  $\frac{1}{2}$  to  $\frac{3}{4}$  inch apart in a pot or flat filled with a seed starting mix. Place the container in a warm (75 to 80 F) location until young seedlings emerge. Move to a cooler location (60 to 65 F) when the seedlings are 1 to 2 inches tall. Make sure they have plenty of light, using florescent lights if needed. Start fertilizing when the seedlings reach 2 to 3 inches tall using a soluble fertilizer with each or every other watering. Onion seedlings tend to be spindly with the remains of the seed sticking to the end of a leaf for several weeks. Encourage stockiness by trimming the ends of the leaves when the plants reach 4 to 5 inches tall. Start hardening off the onions in early March by moving the plants to a protected outdoor location. You may have to move them inside temporarily to protect them from extreme cold snaps.

## HOW MUCH CAN A VEGETABLE GARDEN SAVE IN FOOD COSTS

Gail Langellotto, Statewide Coordinator of the Oregon State University Master Gardener Program, wrote a blog post a couple years ago summarizing studies regarding the savings a home vegetable garden can provide. Gail looked at 8 studies and summarized the results. Values were adjusted to 2012 values. Overall, gardens had an average value of \$0.74 per square foot of garden and a median value of \$0.62 per square foot. That would equal \$148 for a modest 200 square foot garden using the average value. Most of these studies included the cost of establishing the garden the first year. These costs would certainly be less in the years following. Also, interesting were the crops that provided the greatest return per square foot. Those crops were tomatoes, salad greens, beets, broccoli and potatoes. However, be sure to plant crops that will actually be eaten. Vegetables that will not be used are a waste of time and money. To see much more detail, go to Gail's blog post at <http://osumg.blogspot.com/2012/04/how-much-does-vegetable-garden-costsave.html>

### ***Newer Fluorescent Lights Available for Indoor Gardeners***

Many gardeners use fluorescent lights to start young vegetable and flower plants during the spring or to grow certain houseplants all year long. Traditionally, we have used fixtures with T-12 lamps suspended a few inches above the tops of the plants. However, T-12 lamps are fading away due to newer lamps that are a better choice for indoor gardens. These are known as T-8 and T-5 lamps. The number after the "T" refers to the diameter of the lamp in eighths of an inch. Therefore, a T-12 lamp is 12/8 or 1.5 inches in diameter and are what most people are familiar with. A T-8 is 8/8 or 1 inch in diameter, and a T-5 is 5/8 of an inch in diameter. So, does a smaller diameter mean less light? Not at all. In fact, the T-5 can be the brightest of the three. Another advantage for these newer lamps is they use less electricity per lumen. Our traditional 48-inch T-12 is rated at 40 watts. However, there are newer styles of T-12's that are 34 watts. The T-8 is rated at 32 watts and the T-5 at 28 watts. This sounds too good to be true. Are there drawbacks? Maybe so or maybe not. First is cost if you have to replace T-12 fixtures to convert to a T-8 system. However, newer fixtures may be able to handle either T-12's or T-8's. Therefore, if you purchased fluorescent fixtures in the last few years, check to see if they are rated for T-8's before replacing them. Note that lamp costs are comparable between T-12's and T-8's. The T-5 lamps are significantly more expensive and cost over twice as much as either a T-12 or T-8. The question becomes, is it worth it? If you have a T-12 fixture that is rated for T-12's only and are satisfied with your results, then maybe not. However, if you are investing in new fixtures or have fixtures that can use either T-12's or T-8's, then go with the T-8's. They will use less energy, last longer and provide more light.

### ***Conservation Trees from the Kansas Forest Service***

The Kansas Forest Service offers low-cost tree and shrub seedlings for use in conservation plantings. Plants are one to two years old and sizes vary from 5 to 18 inches, depending on species. Orders are accepted from now through the first full week in May each year, but order early to insure receiving the items you want. Orders are shipped from the second week of March through May 5. Approved uses for these plants include windbreaks, wood lots, riparian

plantings, wildlife habitat and Christmas trees. They may not be used for landscape (ornamental) plantings or grown for resale. All items are sold in units. Each single species unit consists of 25 plants. For example, a unit of Eastern red cedar has 25 trees per unit. Though a single species unit is most commonly purchased, four special bundles are also available including a songbird bundle, quail bundle, pheasant bundle and wildlife mast bundle. Tree planting accessories are also available including marking flags, root protective slurry, rabbit protective tubes, weed barrier fabric and tree tubes. If there have been problems with deer browsing on young trees, the tree tubes are a must. Order forms are available from the local Butler County K-State Research and Extension office at 206 N. Griffith in El Dorado. Order forms are also available on the Kansas Forestry Service website at [https://www.kansasforests.org/public\\_saps/Welcome.aspx](https://www.kansasforests.org/public_saps/Welcome.aspx)

## ***Bird Feeding***

Severe winter weather is not only hard on people but can be a life and death struggle for birds. Though birds require water and shelter, food is often the resource most lacking during cold weather. Many different bird food mixes are available because various species often prefer different grains. However, there is one seed that has more universal appeal than any other: black oil sunflower. If you are new to the bird-feeding game, make sure there is a high percentage of this seed in your mix. White proso millet is second in popularity and is the favorite of dark-eyed juncos and other sparrows as well as the red-winged blackbird. As you become more interested in bird feeding, you may want to use more than one feeder to attract specific species of birds. Following is a list of bird species with the grains they prefer.

- Cardinal, evening grosbeak and most finch species – sunflower seeds, all types.
- Rufous-sided towhee – white proso millet
- Dark-eyed junco – white and red proso millet, canary seed, fine cracked corn.
- Many sparrow species – white and red proso millet.
- Bluejay – peanut kernels and sunflower seeds of all types.
- Chickadee and tufted titmouse – peanut, oil (black) and black-striped sunflower seeds.
- Red-breasted nuthatch – oil (black) and black-striped sunflower seeds.
- Brown thrasher – hulled and black-striped sunflower seeds.
- Red-winged blackbird – white and red proso millet plus German (golden) millet
- Mourning dove – black sunflower seeds, white and red proso plus German millet.

Extended cold periods can also make water unavailable. A heated birdbath can be a tremendous draw for birds during times when all other water is frozen. Energy use is usually less than what most people expect IF the heater has a built-in thermostat. If you would like more information, Chuck Otte, Agriculture Extension Agent for Geary County has a series of backyard birding guides at <http://gearycountyextension.com/NRMW.htm>

## CENTRAL KANSAS MARKET VEGETABLE GROWERS WORKSHOP

Locally grown vegetables are fresh, delicious, and can boost the local economy. The 6th annual Central Kansas Market Vegetable Growers Workshop, sponsored by Sedgwick, Butler, Harvey, and Reno County Extension, will give both beginning and experienced vegetable growers new skills to improve their production methods and marketing skills for selling their local vegetables, while meeting an increasing demand for locally grown produce. The workshop will be held Saturday, February 7, 2015 from 8:45 a.m. to 4:15 p.m. in 4-H Hall at the Sedgwick County Extension Education Center at 21st and Ridge in Wichita. Cost of registration is \$20 by January 31st and \$25 after that. The registration deadline is Thursday, February 5th. Register online at

<http://2015ckmvgw.eventbrite.com/>

or by calling 316-660-0100. The workshop will cover the basic vegetable and fruit production issues, as well as special topics related to beekeeping, growing cut flowers, and wildlife pest control. The Keynote Speaker is Scott Thellman of Juniper Hill Farms in Lawrence, KS. He will be sharing how the farm has grown through selling vegetables in outlets other than the Farmers' Market.

Lunch will be provided.

### ***Bringing Houseplants Down to Size***

We sometimes receive calls from gardeners who wish to donate houseplants that have outgrown their location. In most cases, we don't have room to accept plants and suggest that people bring them down to size by air-layering. Air-layering is a process where a branch or the main stem is encouraged to form roots while still attached to the parent plants. After rooting, the original plant is discarded and the newly rooted one is potted as a replacement. Though this propagation technique cannot be used on all houseplants, it does work well on many that tend to outgrow their boundaries including croton, dracaena, dieffenbachia, Norfolk Island pine, rubber plant and schefflera. Choose wood that is about 1 year old. Older or more immature wood often roots poorly, if at all. Any place on the stem that is of the proper maturity can be used, but a convenient location is often about 12 inches from the tip. Following are the steps required for air-layering:

- Leaves should be removed around the area to be air-layered.

- Wound the stem. This can be done by making a slanting cut upward, an inch or more in length and halfway through the stem. Place a portion of a toothpick in the cut so it cannot close and heal. If the stem is seriously weakened, use a stick "splint" to prevent breakage. Another method that works is to strip the bark completely around the stem in a band ½ to 1 inch wide.

- Apply rooting hormone to the wounded surface of the cut or the stripped portion of the branch.

- Pack a baseball-sized wad of moist, unmilled sphagnum peat moss around the wounded area so it forms a ball. This is where new roots will form. It is important to use the long, stringy unmilled peat moss rather than the more common milled material so peat moss does not fall away from the stem when released. Even unmilled peat moss may need to be secured with string to keep it in place.

- Wrap the ball of sphagnum peat moss with clear plastic wrap. Be sure to use enough wrap so that the plastic overlaps and prevents the ball from drying out. Secure the top and bottom edges of the wrap closed with electrical tape, string or other convenient fasteners.

Roots may appear in as little as a month though it may take much longer for the plant to be ready for transplanting. Check periodically to be sure peat moss remains moist. Water if needed. When roots have filled the peat moss, the plant is ready to be severed from the parent and transplanted.

### ***Fruit Trees and Frost***

Spring in Kansas is often unsettled with apricot and peach tree flowers being the most vulnerable to late frosts. Of course, the tree itself will be fine but there will be no to little fruit for that year. Other species of trees can also be affected but apricots and peaches are by far the most sensitive. Also, the closer a tree is to full bloom, the more sensitive it becomes to frost.

Apricots are more likely to have frost kill flowers than peaches because they bloom a bit earlier. Though there are late-blooming apricot varieties, the differences between full bloom on early- and late-blooming varieties appears to be slight. Research at Virginia Tech in the 90's showed a maximum of a 4-day difference between early and late varieties. However, in some years that may be all that is needed. The trees in the study that were considered late blooming included Hungarian Rose, Tilton and Harlayne.

Peaches are next on the list for being likely to be caught by a late frost. With peaches, two characteristics become important when considering whether they will be damaged by late frosts. Like apricots, bloom time is very important but fruit bud hardiness is also important.

In this case, fruit bud hardiness refers to hardiness to late frosts rather than the ability to survive extreme low temperatures during the winter. Late bloomers included 'China Pearl', 'Encore', 'Intrepid', and 'Risingstar.'

So, are there other considerations when looking at possible frost damage? Location can be very important. Planting on a hill which allows cold air to drain to lower elevations can help. Also, a location in town will be more likely to have a warmer microclimate than an exposed location. Some gardeners will add a heat source under a tree during cold nights if they are close to a building. Heat lamps and charcoal briquettes are sometimes used but safety should be the first consideration.

## TOMATO TEST: FRUIT SIZE

Do you know that there is a largest tomato contest at the Butler County Fair? Top prize is \$25 and second gets \$15 and third gets \$10. That being said, you might want to take a look at this latest data on large tomatoes.

Tom Fowler, Horticulture Specialist with the University of Missouri Extension Service, took data on a large tomato planting in both 2013 and 2014. His study included 47 different varieties in 2013 including those that some of our K-State Research & Extension Master Gardeners test for us. The test was repeated in 2014 but some varieties were lost due to cold weather. Also, not all varieties tested last year were tested this year and so we ended up with 21 that were tested both years. Of those only 16 were slicing tomatoes. This week we will look at individual fruit size.

This is two years of data. Although two years worth of data is better than a single year, more is always better as differing environmental conditions can have a significant impact on yield from year to year. The top ten varieties for fruit size are listed below. I have included the top 10 for when we combined the data from both years. Weight is given in ounces per individual fruit. We had 16 varieties that met these criteria and yet the same 10 varieties were the top ten in fruit size for both years. That doesn't happen often.

### 2013 & 2014

No.	Variety	Weight			
			6	Big Beef	7.4
1	Amana Orange	12.2	7	Red Bounty	7.1
2	German Queen	10.4	8	Black Krim	6.8
3	Beefmaster	7.7	9	Celebrity	6.5
4	BHN 961	7.5	10	Scarlet Red	6.5
5	Florida 91	7.5			

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## ***Caddo Sugar Maples***

Sugar maples often have significant problems with our Kansas weather. Our hot, often dry summers and windy conditions can shorten the life of these trees. However, some sugar maples are better adapted to Kansas conditions than others. Our John C. Pair Horticulture Center has evaluated sugar maples for well more than 20 years and has identified selections that are much better adapted to Kansas. Of particular interest are the Caddo sugar maples which originated from an isolated population in Caddo, County, Oklahoma. These are true sugar maples and are considered an ectotype and are more drought tolerant, better adapted to high pH soils and more resistant to leaf scorch and tatter than the norm. Just how resistant to scorch is impressive. The last three weeks of August in 2003 saw temperatures at our research station over 100 degrees each day with no rain for the month prior. All other sugar maples in the trial had severely scorched leaves. Not a single leaf of any of the caddo maples was scorched. Leaf water potential readings taken pre-dawn showed all other trees in the trial past the wilting point while the Caddo maples were barely stressed. Another interesting characteristic of caddo maples is that they tend to retain their leaves in the winter and therefore have been suggested as screens or for use in windbreaks. Dr. John Pair, the late director of the Horticulture Center, selected and released two Caddo maples over 10 years ago. Both these selections color early and have consistent good red fall color. Drought tolerance and resistance to leaf scorch and leaf tatter are exceptional. However, neither will do well in a heavy clay soil that is frequently saturated. These trees can be damaged or killed if planted in wet sites. A home lawn that is watered more than twice a week would definitely qualify as a 'wet site'. The first selection, 'Autumn Splendor', has the traditional sugar maple growth pattern and needs plenty of room to mature. 'John Pair' is smaller and more compact and more likely to fit a residential landscape. This tree is also noted for a dense, uniform crown. If you are in the market for a sugar maple, consider these before making a final decision.

## HANDLING TIPS FOR VALENTINE'S DAY ROSES

If you are fortunate enough to receive roses from a loved one this Valentine's Day, follow these guidelines to help extend the life of your flowers.

### ***For floral arrangements:***

1) Keep the vase filled or floral foam soaked with warm water. Add fresh, warm water daily. If the water turns cloudy, replace it immediately. If possible, recut stems by removing one to two inches with a sharp knife. Do this under water. This lets the stems to draw in water instead of air.

2) Keep flowers in a cool spot (65 to 72 degrees Fahrenheit), away from direct sunlight, heating or cooling vents, directly under ceiling fans, or near radiators.

3) If a rose starts to wilt, remove it from the arrangement, and recut the stem under water. Submerge the entire rose in warm water. The rose should revive in one to two hours.

### ***For loose stems:***

1) If you can't get your flowers in a food solution right away, keep them in a cool place.

2) Fill a clean, deep vase with water and add the flower food obtained from your florist. Be sure to follow the directions on the package.

3) Remove leaves that will be below the waterline. Leaves in water will promote bacterial growth.

4) Recut stems under water with a sharp knife and place the flowers in the vase solution you've prepared.

## ***Fertilizing Spring-flowering Bulbs***

The best time to fertilize spring-flowering bulbs is when foliage emerges in the spring rather than at flowering. Traditionally, gardeners have applied fertilizer during bloom or a bit after, but because bulb roots start to die at flowering, fertilizer applied at bloom is wasted. Roots are active when the foliage first pokes through the ground. Nutrients applied then help the plant produce flowers the following year. If bulbs have been fertilized in the past, there is often plenty of phosphorus and potassium in the soil. It is best to use a soil test to be certain. If the soil needs phosphorus and potassium, use a complete fertilizer (such as 10-10-10, 9-9-6, etc.) at the rate of 2.5 lbs. per 100 square feet. This would equal 1 rounded teaspoon per square foot. If phosphorus and potassium are not needed, blood meal makes an excellent fertilizer. It should be applied at the rate of 2 lbs. per 100 square feet or 1 teaspoon per square foot. Lawn fertilizers such as a 27-3-3 or 30-3-3 can be used, but cut the rate by a third. Also make sure the lawn fertilizer does not contain a weed preventer or weed killer. Remember to leave the foliage until it dies naturally. The energy in the foliage is transferred to the bulb as the foliage dies and will help bloom next year.

## ***Pruning Overgrown Apple Trees***

Apple trees that are not pruned for several years will often produce so many branches that little energy is left for fruit production. Overgrown apple trees are also difficult to harvest and spray. Gardeners who have such a tree are often at a loss as to how to get it back in shape.

Often the best recommendation for such a tree is to make one pruning cut at ground level and start over with a new tree. However, trees may have sentimental value that will make the fix worth the time and effort. Realize that this will be a multi-year process because no more than 30 percent of the tree should be removed in one year. Here are some steps to follow:

**1. Remove all dead wood.** This does not count toward the 30 percent.

**2. Remove suckers from the base of the tree.**

**3. Choose approximately six of the best branches to keep as scaffold branches.**

Remove all others. Branches should be cut flush to the branch collar. The collar is the natural swelling that occurs where a branch connects to the trunk or to a larger branch. Removing the collar would leave a larger wound that would take additional time to heal. Do not paint wounds. Wounds heal more quickly if left open. Candidates for removal include branches with narrow crotch angles, which are more likely to break in wind and ice storms, and those that cross branches you will save. This may be all that is possible the first year if the 30 percent threshold has been reached.

**4. Thin the branches on each scaffold branch.** Remove crowded branches to open up the tree to light and allow humidity to escape. Shorten each scaffold branch by cutting back to a side branch. When you are through, the tree should have enough wood removed so that a softball can be thrown through the tree. Severe pruning often will cause an apple tree to produce vigorous side shoots from the trunk called water sprouts. Main branches will also produce suckers that grow straight up. The suckers and water sprouts should be removed throughout the growing season so the center of the tree stays open.

### ***Soil Temperature and Vegetables***

One of the most neglected tools for vegetable gardeners is a soil thermometer. Soil temp is a much better measure of when to plant than air temperature or the calendar. Planting when soil is too cool can cause seeds to rot and transplants to sit there. A number of vegetables can germinate and grow at cool temperatures. For example, peas will germinate and grow well at a soil temp of 40 F. Though lettuce, parsnips, and spinach can sprout at a soil temperature of 35 F, they prefer at least 45 F for best germination and growth. Radishes also do well at a soil temperature of 45 F. Warm-season crops such as tomatoes, sweet corn and beans prefer at least 55 F for germination (or transplanting), but others such as peppers, cucumbers, melons and sweet potatoes need it even warmer, about 60 F. Taking soil temperature accurately is a bit of a science. First, use a metal soil thermometer, which is sold in many garden and hardware stores. Take temperature 2.5 inches deep at about 10 to 11 a.m. Temperature variations throughout the day and night affect soil temperature, with lowest readings after dawn and warmest around mid-afternoon. The late-morning reading gives a good average temperature. If taking the soil temperature at this time is not practical, take a reading before you leave for work and a second when you return home and use the average. Also be sure to get a consistent reading for four to five days in a row before planting, and make sure a cold snap is not predicted.

## LEACHING HOUSEPLANTS

Everyone knows that someone stranded in the ocean should not drink the water. The salt content of that water will make a bad situation worse. What many people don't realize is that this same principle can harm plants. Fertilizers are salts. They must be salts in order for the plant roots to take them up. However, salt levels can build up over time and eventually may harm plant roots leading to scorched leaves and unhealthy plants. Though this can happen under field conditions, especially in low rainfall areas, it's particularly critical with houseplants. Houseplants have a certain soil volume that doesn't change until a plant is repotted. Salt build-up can be a crucial concern especially if plants are fertilized heavily. Leaching an overabundance of salts can be an important practice to insure the health of our houseplants. Leaching is not a complicated or difficult process. It consists of adding enough water to wash out excess salts. How much water is enough? Add the amount of water that would equal twice the volume of the pot. This, of course, would need to be done outside or in a bathtub or sink. Water must be added slowly so that it doesn't overflow the rim of the pot. If salt has formed a crust on the surface of the soil, remove it but don't take more than 1/4 inch of the underlying media. This may also be a good time to repot the plant.

## *What Fruit Trees to Plant?*

If you're pondering that question, here are some comments on fruit trees commonly grown in Kansas. Fruit trees are a long-term investment requiring careful thought before purchase. Begin by choosing fruit you will eat, not fruit that appears attractive in the catalog. Other considerations are outlined below.

**APPLES:** Though we can grow a wide variety of apples in Kansas, pest-free fruit requires an extensive spray program. Apples are normally sprayed from March (dormant spray) until about two weeks before harvest. Sprays from April on throughout the growing season are applied at least every two weeks. You need two different varieties of apples to produce fruit. Recommended varieties include Jonathan, Gala, Empire, Delicious, Golden Delicious, Jonagold, and Granny Smith. Recommended apples that are disease resistant include William's Pride, Enterprise, Priscilla, and Redfree. Planting disease-resistant apples will reduce, but not eliminate, the need for pesticide applications. None of the apple varieties listed above are resistant to the summer apple diseases sooty blotch and flyspeck. It may be necessary to periodically apply a fungicide in the summer to suppress these fruit blemishing diseases. Also, all of the varieties listed will require protection from codling moth and other insect pests. The codling moth larva is the most common "worm" in the apple.

**CHERRIES:** Sweet cherries (such as Bing) are not well adapted to Kansas, but sour (pie) cherries are. Cherries are borne in June, so relatively few sprays are needed. Many years you may get by with no sprays at all. Only one tree variety is needed for fruit on sour cherries. Recommended sour cherries are Montmorency, Meteor, and North Star. The latter two are genetic dwarfs with Meteor reaching 10 to 14 feet and North Star growing to 8 to 10 feet.

**APRICOTS:** Apricot trees are quite ornamental, which is fortunate because late spring frosts usually eliminate fruit. On average, assume you will get fruit about once every 8 to 10 years. Portions of western Kansas may see fruit only once every 30 years. Almost all varieties of apricot are self-fruitful. Recommended varieties include Moorpark, Goldcot, Manchu, and Superb.

**PEACHES:** Usually a relatively short-lived tree (10 to 12 years) that needs a great deal of pruning to keep productive. Peaches have the same problem with late frosts that apricots do but may not be quite as bad. Only one tree is needed for fruit. Try Intrepid, Early Redhaven, Redhaven, Harken, and Reliance. Intrepid blooms later than other peaches and blooms are much more frost resistant.

**PEARS:** Pears are tough and are often one of the few trees that survive on an old homestead. Though trees should be sprayed, the chance of getting good fruit without spraying is much better than it is with apples. Usually, two trees are needed to get fruit. Proven pears include Seckel, Moonglow, and Duchess.

## ***Planting Asparagus***

Though it is too early to plant asparagus, it is not too early to make plans and prepare soil. This crop is a perennial and will survive for many years if given proper care. It prefers full sun and a well-drained soil and is usually placed on the edge of the garden area so that there is no need to till around the area to plant other crops. Proper soil prep is especially important for perennial crops. Take a soil test to insure proper levels of nutrients. Work the soil as early in the spring as possible but do not work wet soil as clods will form. Then add two inches of organic matter to the surface and the fertilizer and work again so the organic matter and fertilizer are blended into the soil. Asparagus can be propagated from seed but is more often started from 1-year-old crowns. These crowns are planted deeply; about 8 inches deep either in a hole for each crown or in a trench. Space plants 18 to 24 inches apart. Fill in the trench gradually over the growing season to encourage growth. March 15 to April 15 is the best planting time. Adapted varieties include Jersey Giant, Jersey King, Jersey Knight, Jersey Supreme and Purple Passion. These are all male hybrids that will produce three times as much as our old Martha or Mary Washington varieties. Males have a number of advantages over females in that they live longer, emerge earlier in the spring, are more productive and eliminate potential volunteer plants that can reduce the productivity of a planting. Weed control is very important. Competition with weeds results in slow establishment. A shallow hoeing should be all that is needed.

## GROWING BLUEBERRIES

Blueberries are not native to Kansas but will grow in the eastern half of the state with good preparation. They are related to azaleas and rhododendrons and require an acid pH, preferably 4.8 to 5.2. Blueberries do not have root hairs, so watering and mulching are important. It is best to start planting preparations a year ahead of time to allow for pH adjustment, weed control, and the addition of organic matter. The first step is a soil test to determine how much the pH needs to be reduced. For a pH up to 5.5, the addition of sphagnum peat moss at the rate of 2 cubic feet per 100 square feet will be adequate. For a pH 5.5 to 6.0, add 1 pound of sulfur per 100 square feet of bed in addition to the peat moss. For a pH 6.0 to 6.5, add 1.5 pounds of sulfur per 100 square feet of bed. For pH levels above 6.5, use 2 pounds of sulfur per 100 square feet of bed and double the amount of sphagnum peat moss suggested earlier. Do not use aluminum sulfate to correct a high pH because excessive levels of aluminum can be toxic to blueberries. For each 0.5 movement up the pH scale from 6.5, add an additional pound of sulfur. Sulfur can be applied as a dust, but pelletized sulfur is much easier to spread. Treat only the row. Row width should be 8 feet. Blueberries are normally spaced about 5 feet within the row. Sulfur takes time to react, so allow as much time as possible between sulfur application and planting. Blueberries will bear more if you plant more than one variety. Recommended varieties vary, but you may want to try Bluecrop

because it is adaptable. Patriot also seems to do well. You may want to try some other varieties.

Blueberries should be mulched. Sawdust is the traditional material, but straw and wood chips will work as well. Mulch to a depth of about 3 inches. Blueberries must be irrigated. Soils should be kept moist but never waterlogged. Adding peat moss to the planting row will elevate the planting bed enough that standing water should not be an issue. An elevated bed will dry out more quickly, so there must be a means of adding water. Trickle irrigation works well. Watering twice a week during the summer with enough water to wet the soil 8 inches deep should be sufficient except under extreme heat. Watering once a week may be enough during the cooler spring and fall weather. As you might guess, there is more to growing blueberries than can be included in a short article. Dr. Art Gaus from the University of Missouri shared this instruction sheet on how to grow blueberries more than 25 years ago. It is still excellent information on blueberry culture. You can access it by going to: <http://www.hfrr.ksu.edu/doc3091.ashx> Blueberries require commitment, excellent preparation and care, anything less won't do.

### ***Blueberries in Containers***

Growing blueberries in containers is becoming more popular. Chosen varieties are usually half-high plants that are a cross between highbush and lowbush blueberry species. Plants can be as small as 18 inches tall and wide (Top Hat), but typically are larger. Here are several tips for producing container grown blueberries:

**Acid soil pH:** Blueberries need an acid pH between 4.8 and 5.2. Sphagnum peat moss is very acid and often used in large quantities in soil mixes for acid-loving plants. In fact, blueberries can be grown in peat moss alone if nutrients are provided but that is an involved process. A 50/50 mix of peat moss and potting soil is recommended. This will provide nutrients and weight so the plant is less likely to blow over in wind.

**Container size:** A container larger than 2 gallons will be more stable in the wind and provide a larger moisture reserve during hot, dry weather.

**Watering:** Blueberries do not have root hairs, so they are not efficient in picking up water. Potting soil should be kept moist. This will be the most challenging aspect of growing in containers. A large container will not need to be watered as frequently as a small one.

**Winter care:** Though plants are winter hardy, the roots are not. Move pots into an unheated, attached garage or bury them in the soil or mulch enough to bury the pot in early November. Water them periodically during the winter. Use your finger to determine if the soil is moist one inch deep. If not, then water until some flows out the bottom of the pot.

**Varieties:** Though blueberries will produce some fruit if only a single variety is grown, two varieties will increase the potential fruit crop. Suggested varieties include Top Hat and Northsky. Each should reach about 18 inches high, though Northsky will likely grow wider than Top Hat. Northblue is another choice that should produce more fruit than either Top Hat or Northsky but should reach 2 to 3 feet high. North Country is intermediate in size at 18 to 24 inches high and should produce a moderate amount of fruit.

**Wind protection:** Wind protection will decrease the amount of water these plants need and reduce the chances of leaf scorch.

**Exposure:** Blueberries do best with a minimum of 6 to 8 hours of sunlight a day. Try a northern or eastern exposure. Shading of the container sides will allow full sun exposure without cooking the root system.

### ***Don't Work Wet Soil***

Resist the temptation to work any soil if it is wet. Doing so destroys the structure of the soil resulting in clods that may not break down all summer. To determine if a soil is too wet to work, grab a handful and squeeze. If water comes out, it is much too wet. Even if no water drips out, it still may not be dry enough to work. Push a finger into the soil you squeezed. If it crumbles, it is dry enough, but if your finger just leaves an indentation, more time is needed. Be sure to take your handfuls of soil from the depth you plan to work the soil because deeper soils may contain more moisture than the surface. If tree planting is in your future, you may want to work the soil as soon as it is dry enough to work. You may then protect that area from becoming too wet by covering with a tarp if rain is forecast near the planting date.

### ***Repotting Houseplants***

As outdoor plants break dormancy and start to grow in response to the longer days and warmer spring temperatures, houseplants usually put on a spurt of growth as well. Eventually, these indoor plants out-grow their containers and need to be repotted. To check if your plants are becoming root bound and need a larger pot, inspect the root system. First, knock the plant out of its pot. Watering several hours before this operation will allow the plant to be removed more easily. On pots that are 8 inches in diameter or less, place one hand over the top of the pot with the stem of the plant passing between two fingers, and turn the plant upside down. Then rap the edge of the pot against a table. The root ball should come away from the pot. On pots that are more than 8 inches in diameter, a bit more encouragement may be needed. Place the pot on its side and rap the top edge of the pot with a rubber mallet. Turn the plant a few degrees, and repeat the procedure until the root ball releases. Once the plant is free, take a look at the root ball. If you see a clear network of roots, the plant needs to be moved to a larger pot. If the original pot is less than 10 inches, move up an inch in size; if 10 inches or larger, increase the size 2 inches. If the pot has one or several large holes in the bottom for drainage, cover the holes with pot shards (pieces of a broken clay pot) or gravel so that the potting mix is not washed out during watering.

It is essential that the plant sit at the same level it was in the old pot. Add enough potting mix to the bottom of the pot to ensure this. This mix will need to be firmed before the plant is placed on top of it so it doesn't settle over time. After the plant is placed, fill in around the original root ball with potting soil. Again, firm this soil with a slender stick, or tap the bottom of the pot on the table. If this firming is not done, new soil will be so light and airy that water will tend to move through it rather than through the whole root ball. Water the plant thoroughly after repotting, but be especially careful not to overwater for about two weeks. The new soil tends to stay wet until roots penetrate. Overwatering can lead to rot. Most plants need to be repotted annually though vigorous growers may need to move up sooner. Slow-growing plants may stay in the same pot for more than a year.

## FRUIT TREE PRUNING WORKSHOP

For those who have fruit trees – or want to have fruit trees – a free community workshop on tree pruning will be held at the Numana Community Garden on Gordy Street, between 6<sup>th</sup> St. and 9<sup>th</sup> St. in El Dorado. The workshop will be held at 10 a.m. Friday, March 6<sup>th</sup>. Larry Crouse, Butler County Extension horticulture agent, will lead this hands-on training. Dress appropriately, there will not be a rain-out date.

Pruning is essential for a tree to thrive and produce abundant fresh fruit. Participants will learn how to set the base structure of an apple or peach tree and the reasons behind pruning. Crouse will discuss pest control problems that fruit growers encounter. After a demonstration, Crouse and other Butler County Master Gardeners will supervise as participants try their hand. Participants will want to bring their own pruning tools, bypass pruners are preferred over anvil type. Hand shears and loppers are the tools of choice.

The apple orchard used in this workshop is part of the Numana Community Garden. These fruit trees will provide fresh fruit for people in need in our community. There is **no cost** for this tree pruning workshop. Any questions about this event can be answered by calling the Butler County Extension office at (316) 321-9660.

### ***Seven-son Flower***

This large shrub is finally starting to receive the recognition it deserves. A native of China, seven-son-flower was first collected in 1907, named in 1916, and then languished in obscurity. Another expedition to China in 1980 resulted in a collection of viable seeds that were propagated and distributed to several botanical institutions and nurseries. Over the years, it has slowly become more widely planted. Numerous characteristics contribute to the attractiveness of this plant. Leaves are a dark, glossy green and are rarely bothered by pests. Creamy, white flowers appear in late summer when few plants are in bloom. The inflorescence is distinctive in arrangement and effect. Though each individual flower is quite small, they are borne in a panicle with six flowers tiered in a whorl with the seventh terminating the inflorescence. Panicles are born on the tips of branches. After the flowers fade, fruit appears with surrounding sepals. Color changes from green to red and persists for 2 to 3 weeks. This plant is actually more attractive in this post-bloom period than in flower. Though often grown as a large shrub, Seven-son Flower can be trained as a small tree and reach 15 to 25 feet in height. Exfoliating (peeling) bark is attractive with the inner bark being lighter. Hardy to Zone 5, seven-son flower prefers moist, well-drained soils.

### ***Cut Back Ornamental Grasses***

March is a good time to remove dead foliage from ornamental grasses. Grasses green up earlier if foliage is removed and are more attractive without a mixture of dead and live leaves. A number of tools can be used including hand clippers, weed whips (if the foliage is of a small enough diameter), weed whips with a circular blade, or even a chain saw. Use the top of the chainsaw bar to cut so the saw doesn't pull in debris and clog. Also, it is often helpful to tie foliage together before cutting so it doesn't interfere and is easier to dispose of. Burning is another option — but only if it is safe and legal to do so. Note that these grasses may not burn long, but they burn extremely hot. Even so, the crown of the plant is not damaged and new growth appears relatively quickly. If the center of the clump shows little growth, the plant would benefit from division. Dig up the entire clump and separate. Then replant the vigorous growth found on the outer edge of the clump.

### ***Pruning Deciduous Shrubs***

Gardeners are eager to get out and do something in the landscape this time of year. One chore that can be taken care of during March is pruning certain shrubs. Often, gardeners approach pruning with trepidation, but it is not as difficult as it may seem. Remember, not all shrubs need to be pruned (i.e., witch hazel), and certain shrubs, which will be identified later in this article, should not be pruned this time of year. Shrubs are pruned to maintain or reduce size, rejuvenate growth, or to remove

diseased, dead or damaged branches. Deciduous shrubs are those that lose leaves each winter. Evergreen shrubs maintain foliage all year and include yews and junipers.

Deciduous shrubs are placed into three groups:

- Those that flower in the spring on wood produced last year;
- Those that flower later in the year on current seasons' growth; and
- Those that may produce flowers, but those flowers are of little ornamental value.

Shrubs that flower in the spring should not be pruned until immediately after flowering.

Though pruning earlier will not harm the health of the plant, the flowering display will be reduced or eliminated. Examples of these types of plants include forsythia, lilac, flowering quince, Vanhoutte spirea, bridal wreath spirea and sweet mockorange. Shrubs that bloom on current seasons' growth or that do not produce ornamental flowers are best pruned in March. Examples include Rose-of-Sharon, pyracantha, Bumalda spirea, and Japanese spirea. Pruning during the spring allows wounds to heal quickly without threat from insects or disease. There is no need to treat pruning cuts with paints or sealers. In fact, some of these products may slow healing. There are three basic methods used in pruning shrubs: thinning, heading back, and rejuvenating. Thinning is used to thin out branches from a shrub that is too dense. It is accomplished by removing most of the inward growing twigs by either cutting them back to a larger branch or cutting them back to just above an outward-facing bud. On multi-stemmed shrubs, the oldest canes may be completely removed. Heading back is done by removing the end of a branch by cutting it back to a bud and is used for either reducing height or keeping a shrub compact. Branches are not cut back to a uniform height because this results in a "witches-broom" effect. Rejuvenation is the most severe type of pruning and may be used on multi-stem shrubs that have become too large, with too many old branches to justify saving the younger canes. All stems are cut back to 3- to 5-inch stubs. This is not recommended for all shrubs but does work well for spirea, forsythia, pyracantha, ninebark, Russian almond, little leaf mock orange, shrub roses and flowering quince.

## MANAGING TURF IN SHADE

Turfgrasses differ in their capacity to grow in shade. Among Kansas turfgrasses, tall fescue is the best adapted to shade though it isn't all that good. Although the fine fescues (i.e., creeping red, chewings, hard and sheep) have better shade tolerance, they lack heat tolerance and typically decline during hot Kansas summers. The warm-season grasses have the poorest shade tolerance, although zoysia does better than Bermuda or buffalo. Where shade is too heavy for fescue, there are other courses of action. The most obvious is to either remove trees, or to prune limbs and thin the tree canopies. Grass will do better under openly spaced trees than under closely spaced trees. Pruned limbs and thinned canopies will allow more sunlight to directly reach the turfgrass. If possible, raise the mowing height in the shade to compensate for the more upright growth of the leaves, and to provide more leaf area for photosynthesis. The thin, weak turf in the shade may tempt you to fertilize more. Remember the problem is lack of light, not lack of fertility. Too much nitrogen in the spring causes the plant to grow faster and may result in weak plants. The nitrogen rate for shaded grass should be cut back to at least half of that for grass in full sun. Late fall fertilization after tree leaves have fallen, on the other hand, is important for shaded cool-season turfgrasses and should be applied at a full rate. Irrigate infrequently but deeply. Light, frequent irrigation may encourage tree feeder-roots to stay near the surface, which increases competition between the trees and the turf. Restrict traffic in the shade if at all possible.

Many times, the best choice for shaded areas is switch from a turfgrass to a more shade-tolerant plant. For example, English ivy and periwinkle (*Vinca minor*) are much more shade tolerant than any turfgrass adapted to our area. Another option is simply to mulch the area where turf doesn't grow well. The trees will love the cool, moist soil and the absence of competition.

## *What's Bugging You This Spring???*

The transitional periods from winter to spring and from fall to winter bring opportunities for some of our six-legged friends to make their presence felt. In the late-winter to spring period we have overwintering insects that are starting to move about after a long hard winter of being hidden in a crack someplace. It is very common for these critters to start to mass on the south side of buildings and other structures as they start to soak up the sun's rays and shake off the winter blues. Most often these are nuisance pests that do little to no harm to us or our belongings. But they are a nuisance none-the-less. The list of insects that commonly become a nuisance this time of year include box-elder bugs, elm leaf beetles, hackberry psyllids, and even the asian lady bug beetle. Most of these insects are overwintering adults that are looking to mate to insure the survival of the species. Because of this they are not real easy to control. We usually control insects by applying a control measure to what ever it is that they are eating, and these insects are not worried about eating, they just want to reproduce and then die. So what to do?

We can gain some measure of control by applying insecticides to hard surfaces that they congregate on or that they have to traverse to get to where they are going. Early spring and fall are the times that we can apply a barrier spray around our homes, up on the foundation, around the window sills and door frames, in the yard around the home and even where pipes or such may come in through the walls. The insecticides that work well for this type of barrier treatment include those that contain Cyfluthrin, Permethrin, or Deltamethrin as the main active ingredient. Of course being sure that our window screens and door thresholds are tight and secure go a long way in winning the battle against invasive pests.

Once inside the home we have little recourse for these critters. One way to eliminate them is to vacuum them up. If you use a vacuum to collect them be sure to empty the vacuum cleaner bag outside immediately or they will just crawl out into the closet that you keep your vacuum in.

### ***Adding Organic Matter in the Spring***

Organic matter is a good way to improve garden soil as it improves a heavy soil by bettering tilth, aeration and how quickly the soil absorbs water. However, organic matter added in the spring should be well decomposed and finely shredded/ground. Manures and compost should have a good earthy smell without a hint of ammonia. Add a 2-inch layer of organic matter to the surface of the soil and work the materials into the soil thoroughly. Be sure soils are dry enough to work before tilling as wet soils will produce clods.

To determine if a soil is too wet to work, grab a handful and squeeze. If water comes out, it is much too wet. Even if no water drips out, it still may not be dry enough to work. Push a finger into the soil you squeezed. If it crumbles, it is dry enough, but if your finger just leaves an indentation, more time is needed. Be sure to take your handfuls of soil from the depth you plan to work the soil because deeper soils may contain more moisture than the surface.

### ***Pruning Raspberries and Blackberries***

Raspberries and blackberries are perennial plants with biennial canes. In other words, a single plant will last many years but an individual cane will only live for two. In a cane's first year, it will grow but will not produce fruit. The second year, it will fruit and then die. Though these canes can be removed after they have finished fruiting, many gardeners wait until now to remove them. Dead canes are not difficult to identify. They are a much lighter color than live canes and are dry and brittle. These canes should be removed and discarded. The remaining canes should be thinned but the type of growth determines exactly how this should be done. Black and purple raspberries and thornless blackberries tend to grow in a clump. Remove all the canes but 5 to 7 of the largest and healthiest in each clump. Cut back the remaining canes to living tissue if there was winter damage. Thornless blackberries will also produce a few suckers that come up some distance from the clump. These should be removed or dug and transplanted to increase the planting. Red raspberries and thorny blackberries sucker badly and will fill the row with new plants. Prune out small canes within the row so that there are strong canes 4 to 6 inches apart. Head back all the remaining canes to about 5 feet. Keep aisles free of new suckers during the summer by mowing. We now have what is called everbearing red raspberries and everbearing thorny blackberries. These are the exception to the rule in that they will bear fruit on first-year canes. Therefore, you can cut all canes to the ground in the winter and still have fruit. Examples include Heritage red raspberry and Prime-Jim, Prime-Jan and Prime Ark 45 blackberries.

## PRUNING HYBRID-TEA ROSES

The best time to prune roses is in the spring before new growth appears and after danger of killing frost. Be sure to remove dead stubs. Otherwise, canker fungi may invade stubs and progress into healthy tissue during the summer. Use sharp shears and make cuts at a 45-degree angle about a quarter-inch above healthy buds. How much to prune after dead wood removal depends on the type of rose. For shrub roses, pruning usually consists of removing dead wood or light pruning for shaping. This article focuses on hybrid tea roses which require much more extensive pruning. With hybrid teas, there are three pruning styles, each with a specific purpose. **Heavy or severe pruning** is done on well-established, vigorous plants to produce large, showy flowers. Prune back to three to four healthy canes with three to six eyes per cane. Canes normally will be 6 to 12 inches long.

**Moderate pruning** is done on well-established, healthy plants and is designed to increase the number of flowers produced rather than increase flower size. Leave five to six healthy canes with at least seven buds per cane. Prune stems to 12 to 18 inches long.

**Light pruning** rejuvenates plants after years of neglect or may be performed on newly established plants. Leave five to seven canes of about 18 inches or more in length. This helps maximize leaf area for energy production and rejuvenates plants. If your plants suffered a significant amount of winter damage, they may need to be cut back more severely than even the heavy-pruning style. This will result in a few large flowers but in this case is your only option.

## ***Wild Garlic, Wild Onion and Star-of-Bethlehem***

Wild garlic (*Allium vineale*) and wild onion (*Allium canadense*) are two closely related plants that can become weed problems in home lawns and landscapes. Though wild garlic and wild onion look much alike, each has an odor that is characterized by its name – wild garlic smells like garlic and wild onion smells like onion. These plants are perennials that can also reproduce by seeds and aerial bulbils. Bulbils form at the top of the stem and are oval and smooth. Wild garlic also reproduces by underground bulb offsets, but wild onion does not. Both species produce a clump of plants that is unsightly in a lawn. Control recommendations are the same though we now have a couple of new additions to our arsenal. Traditionally we have used 2,4-D or 2,4-D + MCPP + Dicamba (i.e., Trimec, Weed-Out, Weed-B-Gon). These products should be sprayed during March on a day that is at least 50 degrees. Newer products are Weed Free Zone and Speed Zone. Both are combination products that contain a formulation of Trimec plus carfentrazone. These will give a quicker response at cooler temperatures near 50 degrees. A spreader-sticker added to the spray should help any of these products be more effective. At times, the spreader-sticker is already mixed into the weed killer; no additional amount is needed. These herbicides are also effective on dandelions. Unfortunately, we have not had a good chemical control for Star-of-Bethlehem. The best products we had were Coolpower (31.3% control) and Turflon Ester (23.8% control). Coolpower is a commercial only product, but Turflon Ester is available to both commercial and homeowner users. But research out of Virginia Tech has improved our outlook. Scientists there did a study in which they gained 96% control of Star-of-Bethlehem one month after treatment by using Quicksilver, a formulation of carfentrazone at the rate of 4 fl. oz/A. Quicksilver is a commercial only product, and therefore is not available to homeowners. However, both Speed Zone and Weed Free Zone contain carfentrazone and would certainly be worth a try if you have this troublesome plant.

## ***Controlling Weeds in Home Garden Asparagus Beds***

The best time to control weeds in asparagus is early spring before the asparagus emerges. A light tilling (or hoeing) that is shallow enough to avoid the crowns will eliminate existing weeds. Many gardeners like to mix in organic matter during the same operation. Herbicides can be used before asparagus emerges. Glyphosate (Roundup, Killzall) will kill weeds that are actively growing, and the preemergence herbicide trifluralin can be used to kill weed seeds as they germinate. Trifluralin is found in several products, but not all of them list

asparagus on the label. Those that do have asparagus on the label include Miracle-Gro Weed Preventer Granules and Monterey Vegetable and Ornamental Weeder. Mulch can also be used to keep weeds from invading. No herbicides can be used during harvest. The end of harvest presents another opportunity. Remove all fern and spears and apply Roundup to control virtually all of the weeds present. Past the harvest season and after regrowth of the asparagus, options are limited. Products that contain sethoxydim can be applied to asparagus to kill grassy weeds. Sethoxydim has no effect on broadleaves including asparagus. Two sethoxydim products available to homeowners and labeled for asparagus are Monterey Grass Getter and Hi-Yield Grass Killer. With broadleaf weeds the only option is to pull them and look forward to next year.

### ***Remove Fern and Fertilize Asparagus***

If you haven't removed last year's growth from asparagus plants, now is the time. Asparagus comes up around the first of April, give or take a week depending on the weather and which part of the state you live in. Also, asparagus benefits from a fertilizer application early spring. Fertilize according to a soil test or add 1 to 2 pounds of a 10-20-10 fertilizer per 20 feet of row before growth starts. If a soil test shows that only nitrogen is needed, apply 1 pound of a 20-0-0 product per 20 feet of row. Incorporate lightly with a tiller or rake in fertilizer before spears emerge. Fertilize again at the same rate after the last harvest.

### ***Frost Proof Vegetable Plants***

Certain vegetables can withstand cold spring temperatures as long as they have been toughened up by gradually exposing them to sunlight and outdoor temperatures. This "hardening off" process usually takes about a week. Reducing watering and temperature is the key to toughening up transplants. If possible, move transplants outside for a portion of each day. Start by placing them in a shady, protected location and gradually move them into a more exposed, sunny location as the week progresses. Hardened off cabbage, broccoli, cauliflower and onions can withstand temperatures near 20 F without being killed. Lettuce plants are not quite as tough but will be okay if exposed to temperatures in the mid 20s. Don't hesitate to put these plants out now if extreme cold is not forecast.

## PREVENTING WEEDS IN FLOWER BEDS

Often mulch does a good enough job in perennial flower beds to prevent weeds but sometimes the mulch needs a little help. In annual beds, judicious hoeing will keep weeds down until the foliage forms a canopy that prevents weed germination. However, a lack of time may have you considering an easier way than hoeing or pulling weeds that come through mulch. Preemergence herbicides can help though you should not expect 100% control.

Preemergence herbicides do not keep the weed seed from germinating but kill the young plant as it starts to grow. It is necessary to water these products in (1/4 inch of water) so that the young weed root will contact the herbicide. Be aware that most of these products are more effective on grassy weeds such as crabgrass rather than broadleaves such as dandelions or spurge.

These herbicides often have no effect on existing plants, so they must be applied before the weed seed germinates. Additionally, preventers do not last forever once applied to the soil. Microorganisms and natural processes begin to gradually break them down soon after they are applied. However, all should last long enough so that you get canopy cover before the herbicide wears off. Read the label for information on when to apply the product. Also, be sure the ornamental plants within the bed area are on the label before purchasing the product. See below for products we can use.

### **Dimension (dithopyr)**

- *Hi-Yield Turf & Ornamental Weed and Grass Stopper*
- *Bonide Crabgrass & Weed Preventer*

### **Treflan (trifluralin)**

- *Hi-Yield Herbicide Granules Weed and Grass Preventer*
- *Miracle Gro Garden Weed Preventer*
- *Preen Weed Preventer*

## ***Asparagus Time***

Asparagus is one of those vegetables where freshness is incredibly important. If you have never eaten asparagus fresh out of the garden, try it. It may convince you to grow some of your own. For those who have an asparagus patch, the new spears should be appearing soon. The first asparagus that comes through the ground always seems to take a long time to reach harvest size. That is because asparagus growth is temperature dependent. The higher the day and nighttime temperatures, the faster it grows. Also, the longer the spear, the quicker the growth. As the season progresses and spears get longer, the growth rate increases. Harvest asparagus by snapping or cutting. Snapping is quick and easy. Simply bend the stalk near the base until it breaks. Snapped ends dry quickly so refrigerate or use soon after harvest. If you cut asparagus, use a sharp knife to detach the spears slightly below ground level. This base is woodier than snapped asparagus, so it doesn't lose water as quickly. Cut off woody ends before cooking. Stop harvesting asparagus when the majority of spears are the diameter of a pencil or smaller.

## ***Proper Timing for Crabgrass Preventers***

Crabgrass preventers are another name for preemergence herbicides that prevent crabgrass seeds from developing into mature plants. Many people have a somewhat foggy idea of how they work. They do not keep the seed from germinating but kill the young germinating plant. Crabgrass preventers are just that – preventers. With few exceptions they have no effect on existing crabgrass plants, so they must be applied before germination. Additionally, preventers do not last forever once applied to the soil. Microorganisms and natural processes begin to gradually break them down soon after they are applied. If some products are applied too early, they may have lost much of their strength by the time they are needed. Most crabgrass preventers are fairly ineffective after about 60 days, but there is considerable variation among products. (**Dimension** and **Barricade** last longer. See below.)

For our area of Kansas, crabgrass typically begins to germinate around April 10<sup>th</sup>, or a little later. April 1<sup>st</sup> is a good target date for applying preventer because it gives active ingredients time to evenly disperse in the soil before crabgrass germination starts. Additionally, weather varies from one spring to the next, and with it the timing of crabgrass germination. It is often better to base timing on the bloom of ornamental plants. The Eastern Redbud tree is a good choice for this purpose. When the trees in your area approach full bloom, apply crabgrass preventer. A follow-up application will be needed about 8 weeks later unless you are using **Dimension** or **Barricade**. Using the product '**Amaze**' will require a followup application after 12 weeks. Products that do require a follow-up application after 8 weeks include **pendimethalin (Scotts Halts)** and **Team (Hi-Yield Crabgrass Control)**. **Dimension** and **Barricade** are the only two products that give season-long control of crabgrass from a single application. In fact, they can be applied much earlier than April 15 and still have sufficient residual strength to last the season. **Barricade** can even be applied in the fall for crabgrass control the next season. **Dimension** can be applied as early as March 1. Because of the added flexibility in timing, these products are favorites of lawn care companies who have many customers to service in the spring. Though **Dimension** cannot be applied as early as **Barricade**, it is the best choice if it must be applied later than recommended. It is the exception to the rule that preemergence herbicides do not kill existing weeds. **Dimension** can kill crabgrass as long as it is young (two- to three-leaf stage). **Dimension** is also the best choice if treating a lawn that was planted late last fall. Normally a preemergence herbicide is not recommended unless the lawn has been mowed two to four times. But **Dimension** is kind to young tall fescue, perennial ryegrass, and Kentucky bluegrass seedlings and some formulations can be applied as early as two weeks after the first sign of germination. However, read the label of the specific product you wish to use to insure that this use is allowed. Lawns established in the fall can be safely treated with **Dimension** the following spring even if they have not been mowed. Note that products containing **Surflan**, **Dimension** and **Barricade** may use the common name instead of the trade name. The common chemical name for **Surflan** is *Oryzalin*, **Dimension** is *dithiopyr* and for **Barricade** is *prodiamine*. Remember, when using any pesticide, read the label and follow instructions carefully. We recommend crabgrass preventers be applied before fertilizer so that the grass isn't encouraged to put on too much growth too early. However, it may be difficult to find products that contain preemergents without fertilizer. Those that don't contain fertilizer are listed below.

#### **Pendimethalin**

- *Scotts Halts*

#### **Team (Benefin + Trifluralin)**

- *Hi-Yield Crabgrass Control*

#### **Dimension**

- *Hi-Yield Turf & Ornamental Weed and Grass Stopper*

- *Bonide Crabgrass & Weed Preventer*

- *Green Light Crabgrass Preventer*

#### **Surflan + Balan**

- *Amaze*

## HOW LOW SHOULD YOU GO?

I am often asked whether it is good to mow lower in the spring. The answer is yes and no. It doesn't hurt to mow lower than normal the first mowing or two. As a matter of fact, it can actually speed green-up by removing old, dead grass and allowing the soil to warm up faster. But the mowing height should be raised to normal after the first or second cutting to discourage crabgrass. Crabgrass seed must have light to germinate, and a high mowing height will shade the soil. Also, root depth and mowing height are related on upright growing grasses such as tall fescue and Kentucky bluegrass — the higher the height of cut, the deeper the root system. A deeper root system means a more drought-resistant turf. So, how low should you go on the first cutting? On tall fescue and Kentucky bluegrass, you can mow as low as 1½ inches. Be careful you don't go so low that you scalp the turf. Normal mowing height for Kentucky bluegrass is 2 to 3 inches and for tall fescue is 3 to 3½ inches.

## ***Brown Coloration on Junipers***

Certain eastern redcedar and various other junipers are showing a brownish cast when viewed from a distance. This may be the male cones. Male cones are on the tips of the foliage and look somewhat like a cross between a miniature hand grenade and a pinecone. Shaking the branches on dry days often releases a cloud of pollen. Most junipers are dioecious, meaning they have both male and female plants. About half the junipers (the males) have this coloration. Female cones are much less obvious. If you are concerned about the brown color, check plants to ensure male cones are the cause. If they are, this is normal and will fade with time.

## ***Laying Plastic Mulch***

Plastic mulch is sometimes used to start vegetables such as tomatoes and melons earlier than normal. Commercial growers use a machine to lay the mulch, but home gardeners must do this by hand. Following are some tips on how this is done.

1. *Fertilize according to soil test.* You won't be able to add fertilizer after the plastic is down.
2. *Work the soil* so that the bed can be easily shaped.
3. Use a *garden hoe* to form a *trench along all edges* of the plastic. The soil should be pulled to the outside of the bed. The trench should be formed six inches in from the edge of the plastic and extend along both sides and both ends. The trench should be deep and wide enough to bury six inches of plastic.
4. *Lay trickle irrigation tube* down the center of the bed. This isn't absolutely necessary but it makes it much easier to water. Overhead watering will hit the plastic and roll off.
5. *Lay the plastic down and cover the edges with soil.* You may need to slit the edge of the plastic where the trickle irrigation tube enters the end of the bed.
6. *Plant when the soil temperature reaches the correct temperature* for the crop (55 degrees for tomatoes and 60 degrees for melons) at a 2.5-inch depth. Check the temperature at about 11:00 a.m. to get a good average temperature. Check for several days in a row to ensure the temperature is stable.

## ***Starting Tomatoes Early***

If you would like to have your tomato plants produce earlier in the year, there are certain things to keep in mind. Most people who try to get a jump on the season set their tomatoes out early and hope they do well. However, that is often not a good plan, as tomatoes have to have certain requirements before they will grow well. Those requirements are an acceptable soil temperature for root growth and an acceptable air temperature for both plant growth and fruit set.

**Root Growth:** Tomatoes need a soil temperature of at least 55 degrees to do well. Plastic mulch is most commonly used to warm the soil. Several days may be needed to raise the soil temperature. Check the soil temperature 2.5 inches deep in the soil at about 11:00 a.m. If that is not possible, check the temperature before leaving for work and again when your return and use the average of the two. You may wish to lay a drip irrigation line before installing the plastic to make watering more convenient. See accompanying article on laying plastic mulch.

**Air Temperature:** Plants must be protected from frost. Hot caps or water teepees are placed over the young plants to provide protection as well as a higher average temperature to encourage growth. Eventually the plants will outgrow the cover and start to develop flowers. But if the temperature goes below 55 degrees at night, tomato flowers may not set.

The plant is not hurt, but the blossom will not set fruit or, if it does set fruit, the fruit is often misshapen. How early can you transplant? Start with a date about 2 weeks earlier than normal.

## ***Herbicides for Home Vegetable Gardens***

Though mulches and hoeing are usually all that is needed for small vegetable gardens, homeowners with large areas may need the help of herbicides to keep ahead of the weeds. One preemergence and one postemergence herbicide can be used on home vegetable gardens. The preemergence herbicide is trifluralin. Preemergence herbicides kill weed seeds as they germinate. They usually have no effect on weeds that have emerged. Therefore, they must be put on either before weeds come up in the spring or after weeds have been physically removed. The **preemergence herbicide trifluralin** is sold under the trade names of Treflan, Preen, Miracle-Gro Garden Weed Preventer, Gordon's Garden Weed Preventer Granules and Monterey Vegetable and Ornamental Weeder.

The **postemergence herbicide is sethoxydim**. This product only kills grasses; broadleaves are not affected. It can be sprayed directly over the top of many vegetables. Sethoxydim is sold as Poast, Monterey Grass Getter, and Hi-Yield Grass Killer. A second postemergence herbicide called fluzifop-p-butyl is labeled for commercial growers as Fusilade, but I haven't found vegetables listed on the homeowner labels, "Over the Top Grass Killer" and "Grass-No-More." Also, the other homeowner products mentioned above often do not have as many vegetables on the label as the commercial products. Even among the homeowner products with the same active ingredient, there may be slight differences among labels. Check product labels to be sure the crop is listed. For example, trifluralin can be used on asparagus, but must be applied before spears emerge.

## GETTING HEALTHY WITH HERBS

### *Learn how to grow and use them!!!*

On Tuesday, April 21<sup>st</sup>, at 6:30 PM at the Rose Hill Methodist Church 19551 SW Butler County Rd, Rose Hill, KS. Kay Neff, owner of Neff Family Farms, will share her vast knowledge of all things herbal. Kay will not only be giving tips on what herbs grow here and how to grow them, she will also be sharing recipes and have a good selection of herbs for sale for those in attendance. We will cover some of the nutritional aspects of including herbs in your diet. We will also be preparing different dishes that are relatively easy to make. So before and after the program people will be able to taste the different offerings to see what might interest them.

Please pre-register for this event, this will help insure that we have enough materials for all attending. The cost to attend is **\$5.00 per person**, and the **registration deadline is Friday, April 17<sup>th</sup>**. To register, come by or call the **Butler County Extension office at (316) 321-9660**. Or you can e-mail the Butler County Extension office using [slewis2@ksu.edu](mailto:slewis2@ksu.edu). Put "Herbs" in the subject line and include your name and phone number in the body of the e-mail. So please come and join us for information on buying, growing, preserving, using and cooking with herbs!

## ***Ants in the Home***

April showers bring spring flowers and ants. Ant home invasions typically start after the weather warms. A few "scout" ants search for food and water. When they find what they are looking for, they will lay down a chemical trail to show others the way. If the homeowner can trace the ants back to a nest, control is simple. Spraying the nest with a labeled insecticide will take care of the problem. Unfortunately, nests are often outside the home and can be extremely difficult to find. Also, ants are so small that finding and caulking all potential entry points is usually not practical. Treating the trails is another tactic that may give temporary relief but normally does not work over the long term; the ants simply find another way.

In the end, homeowners are often left with two strategies: sanitation and baits. Eliminating crumbs, grease, scraps or other food materials will help discourage ant invasions. Ants use the most easily accessible food sources, which leads to use of baits. By using bait materials the ants like, you can trick them into taking the insecticide back to the nest where it is fed to the queen and other members of the colony. Over time the nest will be destroyed. There are a number of commercially available homeowner formulations that contain both the bait and insecticide and come pre-packaged in a child-resistant station. If ant activity increases around the newly set bait station, do not worry. The insecticides are meant to be slow acting so the product can be transported back to the colony before the worker dies. Unfortunately, not all ants are attracted to the same baits. Also, the food preference of ants may change over time. If one bait product isn't attractive, try another.

## ***Butterfly Gardening***

Butterfly gardening is becoming more popular with Kansans. Providing for the basic needs of butterflies, such as food, shelter and liquids, will encourage butterflies to visit this summer.

There are a number of plants that attract butterflies. However, different species of butterflies prefer different plants. Using a variety of plant material that vary in blooming times of day and year helps attract a diverse group of visitors. Plant groups of the same plant together; a single plant is difficult for a butterfly to detect. If trying to attract a certain species of butterfly, learn which plant(s) that butterfly prefers, and then emphasize that plant in your planting. Annuals that attract butterflies include ageratum, cosmos, French marigold, petunia, verbena and zinnia.

Perennials and shrubs can be split into those that bloom early, mid-season and late. Good choices for those that bloom early are allium, chives, forget-me-not and lilac. Bee balm, butterfly bush, black-eyed Susan, buttonbush, butterfly weed, daisy, daylily, gaillardia, lavender, lily, mint, phlox, privet, sunflower and veronica

are fitting picks for mid-season bloom. Late bloomers include aster, glossy abelia and sedum. There are other things you can do to encourage butterflies. Butterflies are cold-blooded and like open areas where they can sun themselves on cool days and shade to cool off when the sun is too intense. Butterflies also need water. A simple way to make a butterfly pool is to take a bucket, fill it with gravel, and bury it to the rim. Now add water, sugar water or sweet drinks so that the butterflies can land on the gravel but still reach the liquid.

### ***Fertilizing the Home Orchard***

Fruit trees benefit from fertilization around the bloom period, but the amount needed varies with the age of the tree. Normally, trees primarily need nitrogen, so the recommendations are for a high nitrogen fertilizer such as a 27-3-3, 29-5-4, 30-3-3 or something similar. Though recommended for lawns, these fertilizers will also work well as long as they do not contain weed killers or crabgrass preventers. Use the following rates:

Trees 1 to 2 years old, apply one-fourth cup of fertilizer per tree;

Trees 3 to 4 years old, apply one-half cup per tree;

Trees 5 to 10 years old, apply 1 to 2 cups per tree;

Trees more than 10 years old, apply 2 to 3 cups.

You may also use nitrate of soda (16-0-0) but double the rate recommended above. If a soil test calls for phosphorus and potassium, use a 10-10-10 but triple the rate. On apple trees, last year's growth should be 8 to 10 inches, cherries should have 10 to 12 inches, and peaches should equal 12 to 15 inches of terminal growth. If less than this, apply the higher rate of fertilizer, and if more, apply the lesser amount. Spread all fertilizer evenly on the ground away from the trunk of the tree and to the outer spread of the branches. Water in the fertilizer.

## ***Remove Blossoms on Newly Planted Strawberries***

Spring-bearing strawberry plants that were set out this spring should have blossoms pinched off. New plants have a limited amount of energy. If blossoms remain on the plants, energy that should go to runner development is used to mature fruit instead. Plants that are allowed to fruit will eventually produce runners, but those runners will not be strong enough to produce a good crop of berries the following year. For an adequate strawberry plant population and a good crop next year, early runner development is necessary. Early runners will produce far more strawberries than runners that form later in the season.

Newly planted everbearing plants also should have fruits removed for the first 4 to 6 weeks after planting so they develop a strong root system.

## ***Ash/Lilac Borer***

Note: Ash/Lilac Borer is different than Emerald Ash Borer. Ash/Lilac Borer has been around for many years while Emerald Ash Borer has been confirmed in only Wyandotte, Leavenworth and Johnson counties in Kansas. If you have had problems with canes or stems of lilac and privet suddenly wilting, or ash trees that show borer holes in the trunk and larger branches, the ash/lilac borer may be to blame. This insect causes the base of infested lilac stems to swell and the bark to separate from the wood. A fine sawdust-like material is present around holes in the canes. Ash and mountain ash also are affected. The borer attacks the trunk, which may cause bark to swell and crack if there are repeated infestations. Ash/lilac borers overwinter as larvae in infested trees and shrubs. Moths generally begin to emerge in mid to late April. Emergence peaks in May, dwindles by mid to late June and ends by the first week of July. However, this varies by year. The moth has clear wings and resembles a wasp. There is one generation per year. Public and commercially managed properties often use pheromone traps to determine the presence of adults. Spray treatments are started seven to 10 days after capture of the first moths. Sprays also can be timed using phenology, the practice of timing one event by another. The first spray for ash/lilac borer should be applied when the Vanhoutte spirea is in full to late bloom. This is often about the third week in April but can be as early as late March and as late as mid-May. Apply a second spray four weeks after the first. Thoroughly treat the trunk and larger limbs of ash or the lower portion of the stems of lilac or privet. Heavily infested ash should be cut and burned during the fall and winter. Infested stems of lilac or privet should be removed as well. Bifenthrin or permethrin (Hi-Yield Garden, Pet, and Livestock Insect Control and 38 Plus Turf, Termite and Ornamental Insect Control) are labeled for control. Though there are a number of homeowner products that contain one or the other of these two active ingredients, the permethrin products listed above are the only ones I've found that specifically lists the ash/lilac borer on the label with directions for control.

## ***Borers on Pines?***

If you see a row of holes on pine trees, the problem is not borers. Borer holes will be randomly spaced over the trunk. Holes that are in a horizontal (most common) or vertical row are caused by the feeding of the yellow-bellied sapsucker. This woodpecker makes shallow holes and then feeds on the sap released from the wounds or on insects attracted to the site. Holes may vary in size as illustrated by the two photos above. Other trees this bird often attacks include apples, maples, and Bradford pear, but about any tree species is a potential target. Surprisingly, certain trees may become favorites to the exclusion of nearby trees of the same species. Damage to mature, established trees are usually slight and temporary though small trees may be girdled and killed. These birds are migratory and are usually present from October to April. Therefore, they should not cause any more damage until next fall. If you feel that damage is severe enough to warrant control, you may want to try one of the following remedies next October.

> ***Wrap the trunk*** with fine wire mesh in the area of damage. This may discourage them if left in place for several months. The mesh **MUST** be adjusted every six months or removed when no longer needed. If the mesh is left in place, the tree will likely be girdled. The mesh may potentially be more deadly than the sapsucker.

> **Use Tanglefoot** on the area of damage. This is a sticky material that is applied to tree trunks to capture insects that crawl up the trunk. Yellow-bellied sapsuckers do not like to put their feet in the sticky material. This material may lose stickiness due to dust or other materials and require additional applications.

### ***Carpenter Bees***

Although carpenter bees look much like bumblebees, they are easy to identify if you know what to look for. Bumblebees have hairy abdomens that are usually yellow and black. Carpenter bees' abdomens are shiny blue-black. Carpenter bees are solitary (do not form colonies) and are nonaggressive unless provoked. Only the female possesses a stinger. The male may act aggressive but is harmless. Carpenter bees get their name from the ability of the female to bore into wood. Holes are about a half-inch in diameter and may be 6 inches deep. The female then builds six to eight cells off the main tunnel and lays an egg in each. Developing larvae feed off of "bee bread" (pollen and nectar) regurgitated by the female bee. Larvae become adults by late August and September, but do not emerge until the following spring. Individual holes may not cause much damage, but cumulative effects of numbers of bees can weaken structures. Painting wood surfaces can make them less attractive to bees. Stains seem to have little effect. Insecticides, such as Sevin, can be used to treat openings. Sprays and dusts are both effective but sprays may only last for 1 to 2 weeks and require retreatment. Dusts are most easily applied with a puffer duster. It is best to treat near sundown when the bees have returned to their tunnel.

### ***Termites or Ants***

Both termites and ants are able to swarm and may have wings during part of their lives. Since these insects are close to the same size, people often misidentify flying ants as termites. Since flying ants do not attack wooden structures like termites, it is helpful to be able to tell the difference. Fortunately, there are several differences that can easily distinguish the two. For example, ants have a thin waist; the waist of a termite is thick. Also, ants' antennae are elbowed, while termites' are not. Thirdly, termites have two pairs of wings that are of equal length. Ants also have two pairs of wings, but theirs are of unequal length. Homeowners who find signs of termite activity should shop for a reputable pest control firm.

## HELP FOR NEW VEGETABLE GARDENERS

Kansans that are new to vegetable gardening often don't know how much of each crop to plant. K-State Research and Extension has a publication that can help. The "Vegetable Garden Planning Guide" gives information on the size of planting needed per person and the average crop expected per 100 feet. Also included is a garden calendar highlighting suggested planting dates and expected harvest dates. Crop specific information is detailed including days to germinate, plants or seeds needed per 100 feet of row, depth of planting, spacing within the row and spacing between rows. You can find the publication at your local county extension office or online at: <http://www.ksre.ksu.edu/bookstore/pubs/mf315.pdf> Another, more in-depth publication titled the "Kansas Garden Guide" is also available. This 77-page booklet has sections on planning a garden, composting, improving soil, seeding and planting, garden care, watering, planting gardens for fall production, insect and disease control, container gardening, season extension and harvesting and storing. This is followed by an extensive section on how to grow specific vegetables and herbs. You can pick this up at the Butler County Extension office at 206 N Griffith in El Dorado.

### ***Fertilizing Strawberries and Brambles***

Most garden soils in Kansas have adequate levels of all nutrients other than nitrogen IF the area has been fertilized in the past. However, it is recommended that a soil test be done to be sure of the nutrient needs of your fruit planting. If the soil test recommends phosphorus and potassium, use a 10-10-10 fertilizer instead of what is recommended below but triple the rate. For example, instead of ½ cup per 10 feet of row, use 1.5 cups per 10 feet of row.

*Strawberries (June-Bearing):* June-bearing strawberries are not fertilized in early spring as this can make the berries soft and more prone to rot. Fertilize at renovation and again in late August to early September. In most cases, strawberries need primarily nitrogen, so the recommendations are for a high nitrogen fertilizer such as a 27-3-3, 29-5-4, 30-3-3 or something similar. Though recommended for lawns, these fertilizers will also work well for strawberries as long as they do not contain weed killers or crabgrass preventers. Apply ½ cup for 10 feet of row.

*Strawberries (Everbearing or Day-Neutral):* Fertilize in the spring as growth starts and again in early August. Use the rates recommended for June-bearing strawberries. Everbearing (dayneutral) strawberries are not renovated.

*Brambles (Blackberries and Raspberries):* In most cases, brambles need primarily nitrogen, so use a high nitrogen fertilizer such as a 27-3-3, 29-5-4, 30-3-3 or something similar unless a soil test directs otherwise. Though recommended for lawns, these fertilizers will also work well as long as they do not contain weed killers or crabgrass preventers. Apply ½ cup for every 10 feet of row. Fertilize in spring as growth begins.

### ***Eliminating Unwanted Fruit From Trees***

We have had several calls recently from people asking how to keep trees, such as crabapples and sweetgum, from bearing unwanted fruit that can be messy and hazardous. Florel is sold in many stores as a fruit eliminator. The active ingredient is ethephon, a chemical that releases ethylene, which causes fruit to drop before it sets. According to the label, a foliar application of Florel will reduce or eliminate undesirable fruit development on many ornamental trees and shrubs such as apple, cottonwood, crabapple, elm, flowering pear, horse chestnut, maple, oak, pine, sweetgum, and sycamore. But how well it works and potential damaging effects depend on the dose and temperature. Activity slows if the temperature is below 60 or above 90 degrees F. Because Florel degrades quickly in water, applications should be completed within four hours of mixing. Timing of the application must coincide with full bloom, a stage that requires close observation with many of our trees. Researchers at K-State's John C. Pair Research Center near Wichita have gotten mixed results using Florel on treated crabapples. With some varieties, fruit was substantially thinned.

Others showed no effect. We cannot make firm recommendations on the use of this product without research results on other tree species.

## ***Poison Ivy Identification and Control***

Learning to identify poison ivy is vital if you wish to avoid the rash that accompanies exposure. Unfortunately, poison ivy can make identification difficult because it occurs in three forms: an erect woody shrub, a groundcover that creeps along the ground, and a woody vine that will climb trees. When poison ivy climbs, it forms numerous aerial roots that give the vine the appearance of a fuzzy rope. The leaves of poison ivy also vary. Though the compound leaf always has three leaflets, the leaf margins may be toothed, incised, lobed or smooth. The size of the leaves also can vary, although usually the middle leaflet is larger than the other two. Also, the middle leaflet is the only one with a long stalk; the other two are closely attached to the petiole (leaf stem). The number of leaves gives rise to the saying: "Leaves of three, let it be!" Poison ivy is often confused with Virginia creeper or Woodbine. Each of these vines, however, has five leaflets rather than three. There are three methods commonly used to eradicate poison ivy. These include pulling or grubbing out the plants by hand, cutting off the vine, and then treating the regrowth, and spraying the plants directly. The method used depends somewhat on the plant's growth form. If the plant is growing as a groundcover, direct spray or grubbing the plant out is often used. If grubbing, wear gloves and a long-sleeved shirt. The soil must be moist for grubbing to work well. Wash the clothes and yourself immediately after you finish. It might also be a good idea to rinse the washing machine. If the plant is in the shrub form, direct spray is the most common control method. If the plant is a woody vine that has climbed a tree, the preferred method is to cut the plant off at the base and treat the sprouts after they emerge. Some triclopyr herbicides also have instructions on treating a freshly cut stump directly. Triclopyr (Brush-B-Gon Poison Ivy Killer, Brush Killer Stump Killer) is most often used for poison ivy control. Other herbicides that can be used include glyphosate (Roundup, Killzall Weed and Grass Killer, Nutgrass, Poison Ivy and VineKiller) or dicamba. Poison ivy is tough. Repeat applications may be necessary.

## ***Fertilizing Blueberries***

Blueberries are sensitive to excess fertilizer. Don't exceed the recommended amount.

**Year of Planting:** Apply fertilizer according to soil test and work into the soil before planting. Every six weeks thereafter apply a high nitrogen fertilizer such as a 27-3-3, 29-5-4, 30-3-3 or something similar. Though recommended for lawns, these fertilizers will also work well for blueberries as long as they do not contain weed killers or crabgrass preventers. Apply 1 teaspoon per plant within a circle within 12 inches of the plant. Do not apply fertilizer past August 15. Urea (46-0-0) may be substituted for the fertilizer recommended above but cut the amount to a rounded ½ teaspoon per plant.

**Second Year:** Double the rates recommended above and increase the area treated to within 18 inches of the plant. Apply the first application when the new growth appears in the spring and continue every six weeks but not after August 15.

**Third Year and Following:** - Apply 1/3 cup of the fertilizer recommended above within three feet of each plant when growth begins in the spring. Bushes should produce 6 to 12 inches of new growth each year. If less than this is produced or if you wish larger plants, apply 1/4 cup of fertilizer every 6 weeks. Do not apply fertilizer after August 15.

## SWEET CORN PRIMER

It used to be simple to decide which sweet corn to plant. You simply chose a cultivar and planted when the soil temperature reached 55 degrees. Now it has become more complicated due to genetic advances in sweet corn. Breeders have found certain genes that improve “standard” sweet corn. Below is an overview of the types commonly available to homeowners.

*Standard (su):* This is our “normal” sweet corn and contains a “sugary gene” (su). Standard sweet corn should be isolated from field corn, popcorn, supersweets and ornamental corn. To isolate one type of corn from another, do not plant one type within 200 to 250 feet or be sure to have a difference of 12 to 14 days in time to maturity. Plant when the soil temperature reaches at least 55 degrees. Recommended varieties include Honey and Cream, Silver Queen, Sterling Silver, Jubilee, or Merit.

*Supersweet (sh2):* Though supersweets have up to three times the sweetness of standard sweet corns and hold their sweetness longer after harvest due to the sh2 gene, they do have some drawbacks such as tougher kernels and a lack of some of that good “corn” flavor. They also need to be isolated from other sweet corn types and are very sensitive to cooler soils. Wait until the soil temperature reaches 65 degrees before planting. Try Candy Store, Florida Staysweet, Sugar Loaf, Sweet Time, or Sweetie.

*Sugar Enhanced (se):* These are probably the most popular type of sweet corn grown due to their tender kernels, good flavor and less sensitivity to cool soils (60 degree soil temperature for planting). They hold their post-harvest sweetness longer than standard types but will not hold sweetness as long as the supersweets. The sweetness from the sugar-enhanced types is due to the “se gene.” If both parents were se types, the variety is known as an se+ or se se. If only one parent was an se type and the other an su type, then the variety will be listed as se. They do not need to be isolated other than from the supersweets. Suggested varieties include Bodacious, Ambrosia, Sweet Temptation, Delectable and Miracle.

*Triplesweet (synergistic):* The newest types of sweet corns blend the su, se and supersweet types with the goal of combining the best characteristics of each. We don't have firm recommendations yet but you may want to try Serendipity, Polka, Avalon or Frisky.

## Field Bindweed Control

Field bindweed is difficult to control, especially for homeowners, but there are options.

**Home Vegetable Gardens:** Weed control requires taking the treated portion of the garden out of production for a time. Glyphosate - Glyphosate is sold under a wide variety of names, the most common being Roundup. Take the garden out of production when treating.

1. Glyphosate is a non-selective herbicide that will kill whatever it hits but is inactivated when it contacts the soil.

2. Glyphosate is most effective when applied to bindweed that is at or beyond full bloom. You can treat earlier but don't skip the late summer to fall application.

3. Do not apply to bindweed that is under moisture stress or not growing well.

**Turf:** Selective herbicides are available. A herbicide with the trade name of Drive (quinclorac) is now packaged in homeowner combination herbicides such as Fertilome Weed-Out with Q, Ortho Weed-B-Gon Max + Crabgrass Control, Monterey Crab-E-Rad Plus and Bayer All-in-One Lawn Weed and Crabgrass Killer. Commercial applicators can also use Drive (quinclorac) as well as Q4 (contains quinclorac). Products with Drive work better than glyphosate and are selective. Note that lawns treated with Drive should not use clippings in compost or as mulch as Drive is very stable on grass clippings. We recommend clippings be returned to the lawn anyway but if they are bagged, they should be discarded. Do not apply products with Drive over exposed roots of trees and ornamentals. It would be best to avoid spraying beneath the canopy of any trees to avoid possible damage. If there are plans to convert a section of lawn to a vegetable garden, do

not use Drive on that area. Eggplants can be damaged if planted within 12 months of areas treated with Drive, and tomatoes can be damaged if planted within 24 months.

**Shrub Beds:** Use a spray of glyphosate between plants. Use a shield if spraying near plants to keep spray from contacting green plant material. Remember, glyphosate will hurt your shrubs if it contacts green tissue. It is possible to control field bindweed by pulling, but you must be extremely persistent.

### ***Asparagus Beetles***

Asparagus is doing well but be on the lookout for asparagus beetles. Both the adult and larvae of asparagus beetles feed on asparagus spears by chewing the tips and spear surfaces, leading to scarring and staining of the spear tips. Asparagus beetles overwinter as adults in trash near the garden. The adults are a blue/black beetle with a red prothorax with yellow spots. The larvae are a soft, greenish grub. Small, elongated, black eggs — sticking out long ways from the side of asparagus spears — are laid on developing spears. Early control of beetles is important to reduce feeding damage later. Sevin will provide control (a one-day wait before harvest is required). Some products with permethrin are also labeled but require a 3-day waiting period.

### ***Fruit Tree Sprays and Rain***

A spreader-sticker should be used in fruit tree sprays to improve the distribution and retention of fungicides and insecticides on fruit and leaves. However, even with a spreader-sticker, a rain can reduce the length of time the materials are effective. Less than one inch of rain since the last spray will not significantly affect residues. One to two inches of rain will reduce the residue by one half. Reduce the number of days until the next spray by one half. More than two inches of rain since the last spray will remove most of the spray residue. Re-spray as soon as possible.

### ***Controlling Wild Violets in Lawns***

One of the most difficult weeds to control in lawns is the wild violet. Even combination products that contain 2,4-D, MCPP and Dicamba such as Trimec, Weed-Out and most formulations of Weed-B-Gon do not do a good job. Products with triclopyr give much better control though more than one treatment will likely be needed. A couple of products that contain triclopyr on the homeowner side are Turflon Ester and Weed-B-Gon Chickweed, Clover & Oxalis. (Note: There are several formulations of Weed-B-Gon but only Weed-B-Gon Chickweed, Clover & Oxalis contains triclopyr.) Both products listed above are labeled for tall fescue and Kentucky bluegrass. Do not use products containing triclopyr on bermudagrass as severe injury will occur. Weed-B-Gon Chickweed Clover & Oxalis is labeled for buffalograss and zoysia (Turflon Ester is not) but lawns will likely show some temporary browning after application.

Spray only on calm days and when temperatures are below 90 degrees to avoid damage to nearby plants.

## RABBITS IN THE GARDEN

Rabbits in gardens are a perennial problem because of the wide variety of plants they can feed on. This time of year, they gravitate to young vegetables and flowers. But there are some vegetables that are rarely bothered including potatoes, tomatoes, corn, squash, cucumbers, and some peppers. The question is how do you protect other, more susceptible plants? Fencing provides a quick and effective control method. The fence does not need to be tall; 2 feet is sufficient for cottontails. But the mesh must be sufficiently fine (1 inch or less) so young rabbits will not be able to go through it. Support for the fence can be supplied by a number of products, but electric fence posts work well. Often fencing is not an acceptable choice because it affects the attractiveness of the garden. Other ways to control rabbits include repellents, trapping and shooting. Repellents are often suggested for control but often do not last long and require frequent application. Also, many are poisonous and cannot be used on plants or plant parts destined for human consumption. Live traps can be used to collect and move the rabbits to a rural area several miles from where they were trapped. A number of baits can be used to entice the rabbit to enter the trap including a tightly rolled cabbage leaf held together with a toothpick. However, rabbits often avoid baits if other attractive food is available. Another possibility is to use a motion-activated sprinkler. These are attached to a garden hose and release a short burst of water when motion is detected. Contech, Orbit and Havahart are suppliers and each is advertised as protecting up to at least 1,000 square feet. Shooting is another possibility when it is safe and legal to do so.

## *Peaches and Apricots*

Many parts of Kansas will have a peach and apricot crop that wasn't badly hurt by late frosts. To take advantage of this good fortune certain things should be done as the fruit matures to ensure a good harvest.

*Control insects and diseases:* Though it is too late to control peach leaf curl, it is possible to control scab and brown rot. Insects of concern are plum curculio, oriental fruit moth, plant bugs, and stink bugs. Use Captan or Immunox to control diseases, and malathion to control insects. Spray every 10 to 14 days. Pay heed to the waiting period between the last spray and harvest.

*Thin peaches:* Thin peaches to 1 every 6 to 8 inches of leafed out branch to maximize fruit size and to decrease the load on the branches. As a general rule, we need about 40 leaves per peach for maximum quality. Peaches are borne in clusters, so calculate how many a branch can support by dividing the length of the branch in inches by 7. As long as there is an average of 7 inches of branch length per peach, it doesn't matter whether the peaches are in clusters or not.

*Water Trees as Needed:* The most critical time for adequate water is during the pit hardening stage which usually lasts between 2 to 4 weeks. Cut open a few peaches to determine when the pit starts to harden or become woody. Irregular watering during this period can lead to split peaches.

*Prop up branches if needed:* Prop up branches if the fruit load is so heavy the tree may break apart. Use boards with a "V" cut in one end to support the branch. Prune the branch back to a smaller side branch next spring (March).

## *Blackspot of Roses*

A common disease of roses is blackspot, a fungus disease that can cause defoliation of susceptible plants. Look for dark, circular lesions with feathery edges on the top surface of the leaves and raised purple spots on young canes.

Infected leaves will often yellow between spots

and eventually drop. The infection usually starts on the lower leaves and works its way up the plant. Blackspot is most severe under conditions of high relative humidity (>85%), warm temperatures (75 to 85 degrees F) and six or more hours of leaf wetness. Newly expanding leaves are most vulnerable to infection. The fungus can survive on fallen leaves or canes and is spread primarily by splashing water. Cultural practices are the first line of defense.

1. Don't plant susceptible roses unless you are willing to use fungicide sprays.
2. Keep irrigation water off the foliage. Drip irrigation works well with roses.
3. Plant roses in sunny areas with good air movement to limit the time the foliage is wet.
4. Remove diseased leaves that have fallen and prune out infected rose canes.

If needed, protect foliage with a regular spray program (10- to a 14-day schedule) of effective fungicides. Recommended fungicides include tebuconazole (Bayer Disease Control for Roses, Flowers and Shrubs), myclobutanil (Immunox, Immunox Plus), triticonazole (Ortho Rose & Flower Disease Control) and chlorothalonil (Broad Spectrum Fungicide, Garden Disease Control, others).

## **17-YEAR CICADAS: 2015 IS THE YEAR**

By the end of May and into June, the “buzz” created by massive numbers of newly emerged 17-year periodical cicadas will create quite a “buzz” mainly amongst citizens of eastern Kansas.

With their distinctive appearance (black body, blood-red beady eyes and orange-veined clear/transparent wings), there can be no mistaking periodical cicadas for any other insect.

Probably the main complaints lodged by people against periodical cicadas have to do with the appearance of emergence holes in the ground, occasionally mud turrets produced by nymphs prior to their emergence, large number of nymphal exuvia (“skins”) from which adult cicadas emerged, and the noise created by the clusters of congregated males. Also, the egg-laying activities can kill tips of branches, thus causing the appearance of dead branch tips which is but an aesthetical brief and inconsequential event.

The female uses her serrated ovipositor to slice into and create cavities in twigs into which she will insert up to 20 eggs. She will repeat this activity as many times as is required for her to deposit her full complement of eggs which may total up to 600. Six to 10 weeks later (a time at which all of the periodical cicadas will have died), the newly hatched nymphs drop to the soil burrow into the ground, feed for 16 years and reappear/emerge in 2032!

## ***Anthracnose on Sycamore***

We are starting to see anthracnose on sycamore. Anthracnose is a fungal disease favored by cool, wet weather. Young leaves may wither and turn black. On older leaves, look for brown areas that follow the major veins of the leaves. In some cases, the petiole (leaf stem) is infected, which causes leaf drop. The leaf may look perfectly fine, so look for browned areas on the petiole. In severe cases, the tree drops heavily infected leaves and may be completely defoliated. Healthy trees will leaf out again in a few weeks. Defoliation this early in the year does not affect overall tree health. Trees have plenty of time to produce new leaves and make the energy reserves needed to survive the winter. Other types of trees that are affected by anthracnose include birch, elm, walnut, oak and especially ash. Anthracnose seldom causes significant damage to trees in Kansas, so chemical controls are usually unnecessary. Also, fungicides do not cure infected leaves. Applying fungicides now is not recommended.

## ***Thinning Excess Fruit***

We seem to have avoided late freezes for the most part around our area. So fruit trees may have a heavy fruit crop this year. At first glance, this might seem to be a good thing. But too many fruit can cause problems that should be alleviated with thinning. For example, a heavy fruit crop can interfere with fruit bud development this summer. This can result in a small to no crop next year. This problem most often appears with apples. Thus, thinning helps ensure that good crops are produced each year. The second benefit of thinning is to promote larger fruit on this year's crop. Fruit trees are limited in how many fruit they can mature. Too many fruit and fruit size goes down. A third problem often caused by too many fruit is limb damage. Sometimes the weight of a maturing fruit crop can literally break branches. Thinning will help limit weight and preserve branches. So how much thinning should we do? Thinning recommendations vary with the type of tree. Guidelines for fruit spacing are as follows:

Apples and pears: 4 to 6 inches apart;

Peaches: 6 to 8 inches apart;

Plums and prunes: 4 to 5 inches apart;

Apricots: 2 to 4 inches between fruit.

These are averages and so you may have several fruit clustered closer than this distance. As long as the average on the branch is close to the recommended spacing, the fruit should size well. Cherries are not thinned and can produce a full fruit load.

## ***Cabbage Worms***

This is the time of year we normally start seeing damage from cabbage worms. The imported cabbage worm is usually the first cabbage worm species to appear and is a fuzzy, elongated green worm. Larvae come from eggs laid by the white butterfly often seen flitting around the plants. Early control is essential to reduce injury. BT (*Bacillus thuringiensis*) and spinosad (Borer, Bagworm, Leafminer and Tent Caterpillar Spray; Captain Jack's Dead Bug Brew) are effective organic products that are labeled for this pest. BT can be found in Dipel, Thuricide and other similar materials. Direct sunlight deactivates BT quickly so it is helpful to spray late in the day or on a cloudy day. Conventional insecticides such as carbaryl (Sevin), malathion and methoxychlor are also effective but will kill natural enemies of these pests. Be sure to hit the underside of leaves where insects feed. Note that hitting the underside of leaves is easier when using a dust applied with a duster than when using a liquid spray.

## ***Cucumber Beetles and Bacterial Wilt***

If you had cucumbers or muskmelons that suddenly turned brown and died last year, you may have had a disease known as bacterial wilt. The cucumber beetle carries this disease. Once a plant is infected, there is no cure, so prevention is the key. Because cucumber beetles overwinter as adults, early control measures are essential. There are two types of cucumber beetles: striped and spotted. The striped cucumber beetle is the most common. The 1/4-inch-long beetles are conspicuously colored: black head and antennae, straw-yellow thorax, and yellowish wing covers with three distinct parallel and longitudinal black stripes. Young plants can be protected with row covers, cones, or other types of mechanical barriers. Edges must be sealed to ensure that the beetles do not find a place to enter. Plants will eventually outgrow these barriers, or they will need to be removed to allow insect pollination of the flowers. Apply insecticides before beetles are noticed in the planting. Continue to spray weekly throughout the season. Homeowners can use permethrin (numerous trade names). Once plants have started flowering, spray in the evening after bees have returned to the hive. Check labels for waiting periods between when you spray and when the fruit can be picked.

## MULCHING TOMATOES

Soils are warm enough now that tomatoes can benefit from mulching. Tomatoes prefer even levels of soil moisture and mulches provide such by preventing excessive evaporation. Other benefits of mulching include weed suppression, moderating soil temperatures and preventing the formation of a hard crust on the soil. Crusted soils restrict air movement into and out of the soil and slow the water infiltration rate. Hay and straw mulches are very popular for tomatoes but may contain weed or volunteer grain seeds. Grass clippings can also be used but should be applied as a relatively thin layer – only 2 to 3 inches thick. Clippings should also be dry as wet clipping can mold and become so hard that water can't pass through. Also, do not use clippings from lawns that have been treated with a weed killer until some time has passed. With most types of weed killers, clippings from the fourth mowing after treatment may be used. If the lawn was treated with a product containing quinclorac (Drive), the clippings should not be used as mulch. If the weed killer used has a crabgrass killer, it likely contains quinclorac.

### ***Recent Rains Trigger Mushroom Development***

The frequent, heavy rains in certain areas of the state have resulted in the appearance of mushrooms in home lawns and landscape beds. Although mushrooms are often spectacular in size and color, most are relatively harmless to plant life. Some of these mushrooms are associated with arc-like or circular patterns in turfgrass called fairy rings. The ring pattern is caused by the outward growth of fungal mycelium. The mycelium forms a dense, mat-like structure in the soil that decomposes organic matter. This decomposition releases nitrate into the soil, which in turn stimulates the growth of the grass at the outer portion of the ring. This results in a dark green appearance of the grass at the margin of the ring. Unfortunately, the thick fungal mat formed by the fungus interferes with water infiltration. The fungus also may release certain byproducts that are toxic to the turf. This can lead to dieback of the turf close to the ring. Fairy rings are difficult to control. You can sometimes eliminate the ring by digging to a depth of 6 to 12 inches and 12 inches wide on both sides of the ring, refilling the hole with non-infested soil. Or you can try to mask the symptoms by fertilizing the rest of the lawn so that it is as dark green as the ring. This often isn't a good idea because it tends to promote other turf problems. Commercial people can use certain fungicides to control fairy rings but these products are not available to homeowners. Some mushrooms in lawns are not associated with fairy rings. These may be mycorrhizal (symbiotic association with tree roots) or saprophytic (live on dead organic matter such as wood, etc.) in the soil. Because some of these mushrooms are beneficial, you don't really want to kill them. Besides, a fungicide spray to the mushroom itself does little good. Remember the mushroom is simply the fruiting structure of the organism. Most of the fungus is below ground and inaccessible to the chemical. If mushrooms are a nuisance, pick them and dispose of them as soon as they appear. Remove sources of large organic debris from the soil. Also, mushrooms tend to go away as soil dries. Patience may be the best control. Some of the mushrooms in the lawn are edible, but others are poisonous. Never eat mushrooms unless you are sure of their identity.

### ***Control of Prostrate Spurge***

Prostrate spurge is one of the more difficult broadleaf weeds to control. It is a summer annual that must come up from seed every year. If caught when young, it is easier, though still difficult, to control. Correct herbicide selection is important. Mature plants are almost impossible to control, even with selected herbicides. Several years ago K-State Research and Extension conducted a study on the phytotoxic effects of certain herbicides on buffalograss. During the application, we noted the presence of a large number of small prostrate spurge plants. As the study progressed, plots were rated for percent control of spurge. The results were interesting. We found that Drive (quinclorac) provided more than 90 percent control. Until recently, Drive was only available to commercial applicators. Now we have additional products that contain Drive. Some of those products are: *Ortho Weed-B-Gon Max + Crabgrass Control*, *Bayer All-in-One Lawn Weed and Crabgrass Killer*, *Drive in Monterey Lawn and Garden Fertilome Weed Out with Q*, *Trimec Crabgrass Plus Lawn Weed Killer*, *Bonide Weed Beater Plus Crabgrass & Broadleaf Weed Killer*, and *Spectracide Weed Stop for Lawns Plus*

*Crabgrass Killer.* If you choose to use any of the above products, do not compost clippings or use them as mulch. The quinclorac can harm certain broadleaf plants. Clippings should be returned to the lawn or discarded. Dimension and Turflon Ester offered more than 80 percent control, and Trimec 78 percent. Dimension results were surprising because it is a preemergence herbicide with some postemergence activity that is commonly used for crabgrass control. Turflon Ester should only be used on cool-season grass such as tall fescue and Kentucky bluegrass; not on warm-season grasses such as bermuda, zoysia or buffalo. Remember that these are very small, immature spurge plants. Larger, more mature plants are much more difficult to control.

### ***Vein Pocket Galls on Oak***

We are seeing a high number of oak galls this year, especially vein pocket gall on pin oak leaves. Vein pocket gall causes abnormal swelling of the leaf near the veins. Actually, there are hundreds of different types of galls, each of which is caused by a specific insect. Insects that can cause different galls on oaks include tiny, non-stinging wasps and flies which cause abnormal growths to develop on the leaves, twigs or branches of oak trees. There are even some mites that can cause galls. These galls can include growths that are round, spiny, flattened, elongated or star-shaped. Galls form in response to a chemical that the insect or mite injects into the plant tissue. Eggs laid by a mature female hatch into legless grubs around which the gall forms. The larvae feed, develop, and pupate inside these galls. The adults may emerge either the same season or may overwinter inside the gall depending on the life history of that specific insect. Generally, these gall insects do not cause significant damage to their hosts, though some of the leaf galls can cause enough deformity to make a tree unsightly. Also, severe infestations of twig galls can cause twig dieback or, rarely, tree death. However, just because a twig is covered with galls does not mean it is dead. I have seen twigs that looked like a solid mass of galls leaf out in the spring.

Insecticide sprays applied when galls are noticed are ineffective because damage has already occurred. Also, larvae are unaffected because of the protection afforded by the gall. Insecticide sprays can kill emerging adult wasps and flies, but long emergence periods and short residuals of most contact insecticides make this impractical. Stem and twig galls can be pruned if this is deemed to be practical and necessary. Fortunately, natural predators and parasites usually bring these insects under control given time. Therefore, the best option is usually to do nothing.

## **TOO WET TO MOW THE LAWN**

What do you do when the lawn can't be cut because of constant rain? The best thing to do is to set your mower as high as possible and bring it down in steps. It is always best never to take more than one third of the grass blade off at one time. If more is taken, the plant reacts by using stored energy reserves to quickly send up new growth. This reduces the amount of energy available for the plant to deal with stress or damage done by insects or disease. However, sometimes it is just not possible to keep the "one-third rule." In such cases, cut as high as possible even though it may mean you are cutting off more than one third of the blade. Bring the height down gradually by cutting at progressively lower heights until you reach the target height.

## ***Thatch Control in Warm-Season Lawns***

Thatch control for cool-season lawn grasses such as bluegrass and tall fescue is usually done in the fall but now is the time we should perform this operation for warm-season turfgrasses such as bermudagrass and zoysiagrass. Because these operations thin the lawn, they should be performed when the lawn is in the best position to recover. For warm-season grasses that time is June through July. Buffalograss, our other common warm-season grass, normally does not need to be dethatched. When thatch is less than one-half inch thick, there is little cause for concern; on the contrary, it may provide some protection to the crown (growing point) of the turfgrass. However, when thatch exceeds one-half inch in thickness, the lawn may start to deteriorate. Thatch is best kept in check by power-raking and/or core-aerating. If thatch is more than 3/4 inch thick, the lawn should be power-raked. Set the blades just deep enough to pull out the thatch. The lawn can be severely damaged by power-raking too deeply. In some cases, it may be easier to use a sod cutter to remove the existing sod and start over with seed, sprigs or plugs. If thatch is between one-half and a 3/4-inch, thick, core-aeration is a better choice. The soil-moisture level is important to do a good job of core-aerating. It should be neither too wet nor too dry, and the soil should crumble fairly easily when worked between your fingers. Go over the lawn enough times so that the aeration holes are about 2 inches apart. Excessive thatch accumulation can be prevented by not over-fertilizing with nitrogen. Frequent, light watering also encourages thatch. Water only when needed, and attempt to wet the entire root zone of the turf with each irrigation.

Finally, where thatch is excessive, control should be viewed as a long-term, integrated process (i.e., to include proper mowing, watering, and fertilizing) rather than a one-shot cure. One power-raking or core-aeration will seldom solve the problem.

## ***Time to Fertilize Warm-Season Grasses***

June is the time to fertilize warm-season lawn grasses such as bermudagrass, buffalograss, and zoysiagrass. These species all thrive in warmer summer weather, so this is the time they respond best to fertilization. The most important nutrient is nitrogen (N), and these three species need it in varying amounts. Bermudagrass requires the most nitrogen. High-quality bermuda stands need about 4 lbs. N per 1,000 sq. ft. during the season (low maintenance areas can get by on 2 lbs.). Apply this as four separate applications, about 4 weeks apart, of 1 lb. N per 1,000 sq. ft. starting in early May. It is already too late for the May application, but the June application is just around the corner. The nitrogen can come from either a quick- or slow-release source. Plan the last application for no later than August 15. This helps ensure the bermudagrass is not overstimulated, making it susceptible to winter-kill. Zoysiagrass grows more slowly than bermudagrass and is prone to develop thatch. Consequently, it does not need as much nitrogen. In fact, too much is worse than too little. One and one-half to 2 pounds N per 1,000 sq. ft. during the season is sufficient. Split the total in two and apply once in early June and again around mid-July. Slow-release N is preferable but quick-release is acceptable. Buffalograss requires the least nitrogen of all lawn species commonly grown in Kansas. It will survive and persist with no supplemental nitrogen, but giving it ½ to 1 lb. N per 1,000 sq. ft. will improve color and density. This application should be made in early June. Buffalograss tends to get weedy when given too much nitrogen. As with zoysia, slow-release N is preferable, but fast-release is also OK. As for all turfgrasses, phosphorus and potassium are best applied according to soil test results because many soils already have adequate amounts of these nutrients for turfgrass growth. If you need to apply phosphorus or potassium, it's best to core aerate first so the nutrients reach the roots.

## ***Excessive Rain Can Cause Leaf Problems***

Leaves Turning Yellow or Red: In Kansas we often see chlorosis (yellowing) of plant leaves due to high pH soils making iron unavailable. However, there can other causes that result in similar symptoms. For example, we have received so much rain in certain parts of the state recently that plants are unable to take up the nutrients needed to maintain a good green color. The cause of this condition is actually a lack of oxygen in the soil due to soil pore space being filled with water. This lack of oxygen to the roots often results in a yellowing of foliage. In certain plants such as oaks and maples, however, it may also lead to a reddening of some of the newer leaves.

Fortunately, color changes due to wet soils will be corrected as soils dry. Plants should regain their color when we return to more normal weather. Trees Shedding Leaves: If trees shed leaves in a general shedding with all parts of the tree losing some leaves, then there is no cause for concern. A general shedding of the leaves is most often due to weather turning hot and dry. The tree drops leaves because the root system can no longer keep up. Dropping leaves helps balance the amount of water available from the root system and the amount needed by the leaves.

However, the same thing can happen if the soil is too wet. A lack of oxygen in the soil compromises the root system so it can no longer support all the leaves. Therefore, the tree drops some leaves to bring the tree roots and leaves back into balance. The tree will retain more than enough leaves to remain healthy.

### ***Trees Not Leafing Out***

We have had numerous reports of trees not leafing out or putting out only a fraction of the leaves normally borne. We believe much of this is due to the quick drop in temperature from November 10 to 11 last year. We went from a high of 69 degrees on November 10 to a low of 19 the following morning. Many trees had not hardened off and were damaged. If a tree hasn't leafed out at all, check the stems. If they are dry and brittle, that part of the tree is dead. However, sometimes the tips of the branches are dead but the tree is alive further back. Take a knife and shave off the outer bark on several small-diameter, young branches. If the tissue underneath is water soaked or dark brown to black in color, then it is likely dead. This cambium layer should be a greenish-white color. As long as the twigs remain supple and the tissue under the bark isn't dark, there is hope. So, what should we do for these trees? Help them avoid stress. This means watering during dry weather so the tree has good sap flow. Trees transplanted within the last couple of years should be watered every week during dry weather. More established trees should be watered every two weeks if there is no rainfall. On young trees, kill all the grass under the tree and mulch. Reducing root competition makes for a healthier tree that is more likely to recover.

And finally, remove any dead wood so that insects and disease do not have a point of entry. Dead wood can be removed any time of year.

## **LITTLE BARLEY IN LAWNS**

Many people mistake little barley (*Hordeum pusillum*) for a little foxtail because the foxtail and little barley seedheads are similar. However, little barley is a winter annual that thrives in the cooler spring temperatures but dies out in the summer. Foxtail, on the other hand, is a summer annual that does well in hot weather. Also, foxtail will not produce seedheads until mid- to late-summer. At this point there is no control for little barley other than a glyphosate product such as Roundup. However, Roundup will kill whatever it hits and cannot be used in a lawn situation. The only preemergence herbicide that I know is labeled for lawn situations is Surflan. Monterey Lawn and Garden also sell it under the name of Weed Impede, and another product on the market that contains Surflan is Amaze. Surflan can only be used on warm-season grasses (bermudagrass, buffalograss, zoysiagrass) and tall fescue grown in warm-season areas. Because it's a winter annual, apply preemergence herbicide in September.

## ***New Potatoes***

Many gardeners look forward to harvesting new potatoes this time of year. New potatoes are immature and should be about the size of walnuts. Pull soil away from the base of the plants to see if the tubers are the desired size. If they are, dig entire plants and allow the skins of the exposed tubers to dry for several hours before gathering. These young potatoes are very tender and prone to the skin "slipping" unless they are given a few hours to dry. Even then these immature potatoes will not store well. Red-skinned varieties are often preferred as they are the earliest to produce.

## ***Do Not Over-Fertilize Tomatoes***

Though tomatoes need to be fertilized to yield well, too much nitrogen can result in large plants with little to no fruit. Tomatoes should be fertilized before planting and sidedressed with a nitrogen fertilizer three times during the season. The first sidedressing should go down one to two weeks before the first tomato ripens. The second should be applied two weeks after the first tomato ripens and the third one month after the second. Common sources of nitrogen-only fertilizers include nitrate of soda, urea, and ammonium sulfate. Blood meal is an organic fertilizer that contains primarily, but not exclusively, nitrogen. Use only one of the listed fertilizers and apply at the rate given below.

- > Nitrate of soda (16-0-0): Apply 2/3 pound (1.5 cups) fertilizer per 30 feet of row.
- > Blood Meal (12-1.5-.6): Apply 14 ounces (1.75 cups) fertilizer per 30 feet of row.
- > Urea (46-0-0): Apply 4 ounces (½ cup) fertilizer per 30 feet of row.
- > Ammonium Sulfate (21-0-0): Apply 0.5 pounds (1 cup) fertilizer per 30 feet of row.

If you cannot find the above materials, you can use a lawn fertilizer that is about 30 percent nitrogen (nitrogen is the first number in the set of three) and apply it at the rate of 1/3 pound (3/4 cup) per 30 feet of row. Do not use a fertilizer that contains a weed killer or weed preventer.

## ***Fruit Reminders***

We should have good fruit crops this year as long as we can avoid severe weather. Keep in mind some tips to help insure healthy trees, vines and fruit.

- \* Remove fruit from heavily loaded apples and peaches (if the flower buds weren't killed by frost) to improve fruit size and prevent limbs from breaking. Apples should be spaced every 4 inches and peaches every 6 to 8. Note that is an average spacing. Two fruit can be closer together if the average is correct.
- \* Remove sucker growth from the base of fruit trees and grape vines.
- \* Remove water sprout growth from fruit trees. Water sprouts grow straight up.
- \* "Comb" new growth on grape vines so these new shoots hang down for greater exposure to sunlight.
- \* Continue disease and insect control to prevent fruit damage.

## ***How Healthy is My Tree?***

One of the most important clues in determining the health of your trees is the amount of new growth that tree produces. A healthy tree should have a minimum of 4 to 6 inches of new growth each year. Check branches with the tips in the open and not shaded by the tree itself. Anything less than 4 inches on the majority of branches suggests the tree is under a great deal of stress. So how do you tell where the new growth stops? Look for a color change in the stem. New growth is often greener than that from the previous year. There is also often an area of what looks like compressed growth where growth transitions from one year to the next. Lastly, look at leaf attachment. Leaves are only produced on current seasons' growth. Therefore, new growth stops where leaves are no longer attached directly to the twig but to side branches. However, pay attention as leaves may appear to be attached directly to last year's growth but are actually borne on short spurs. If you look closely, you can tell the difference. All this clue tells you is whether a tree is under stress or not. It does not tell you what is causing poor growth. This year, the most common cause by far is environmental stress caused by the sharp drop in temperature in November. However, the dry winter and excess moisture this spring has also contributed to stress.

Stress is cumulative. In other words, trees may not have completely recovered from stressful conditions (such as drought) that occurred within the last several years. The accumulating stress may have damaged root systems with further damage occurring due to saturated soils this spring. These trees may struggle as we enter summer. Though the roots were able to keep up with moisture demands during the cooler spring weather, they may not be able to as temperatures rise. Such trees may suddenly collapse and die or slough off branches they can no longer support. If possible, water to a depth of 12 inches every couple of weeks we do not receive rain.

## ***Flooding Damage***

Waterlogged soils push out oxygen that roots need to survive. Every living cell in a plant must have oxygen or it dies. Some plants have mechanisms to provide oxygen to the roots even under saturated conditions but most of our vegetables and flowers do not. The longer these plants are subjected to saturated soils, the more likely damage will occur. Usually, as long as water drains away within 24 hours, the impact on plant health is minimal. However, shallow, stagnant water under hot, sunny conditions can literally cook plants, reducing survival time to as little as a few hours.

***Vegetables:*** What about safety regarding eating produce from a garden that has been flooded? Standing water should not cause a safety problem as long as the aboveground portions of the plant remain healthy. Do not use produce from plants that have yellowed. Also, using produce flooded with water contaminated with sewage (lagoon) or animal manure can also be dangerous.

The safest approach is to discard all garden crops that have been in contact with such water. Certainly, leafy vegetables should always be discarded. However, you may eat fruit from such crops as tomatoes, peppers, eggplants, sweet corn, squash, cucumbers, and similar vegetables that develops after the waters have subsided as long as the fruit is not cracked or soft. Always wash vegetables thoroughly before eating.

***Lawns:*** Under the cool conditions of early spring, turfgrasses can often survive several days of flooding. However, during hot, sunny conditions with shallow, stagnant water, lawns may be damaged quickly, sometimes in a few hours. This situation often occurs when shallow depressions in a lawn allow water to pool. Note such areas and fill in with additional soil once the waters have subsided.

***Trees:*** Trees differ markedly in their ability to withstand flooding. Some trees have mechanisms in place to provide oxygen to the roots of plants with water saturated soils and others do not. However, most trees will maintain health if flood waters recede in 7 days or less. It also helps if water is flowing rather than stagnant as flowing water contains more oxygen. If the roots of sensitive trees are flooded for long periods of time, damage will occur including leaf drop, iron chlorosis, leaf curl, branch dieback, and in some cases, tree death. Another danger of flooding is the deposition of sediment. An additional layer of silt 3 inches or more can also restrict oxygen to the roots. If possible, remove deep layers of sediment as soon as conditions permit. This is especially important for small or recently transplanted trees.

Try to avoid any additional stress to the trees this growing season. Ironically, one of the most important practices is to water trees if the weather turns dry. Flooding damages roots and therefore the root system is less efficient in making use of available soil water. Timely waterings are vital to a tree's recovery. Also be diligent in removing any dead or dying branches which may serve as a point of entry for disease organisms or insect pests. The following information on tree survival came from the US forest Service.

***Trees Tolerant of Flooding:*** Can survive one growing season under flooded conditions.

Red maple, silver maple, pecan, hackberry, persimmon, white ash, green ash, sweetgum, sycamore, eastern cottonwood, pin oak and baldcypress.

***Trees Moderately Tolerant of Flooding:*** Can survive 30 consecutive days under flooded conditions. River birch, downy hawthorn, honeylocust, swamp white oak, southern red oak, bur oak, willow oak and American elm.

***Trees Sensitive to Flooding:*** Unable to survive more than a few days of flooding during the growing season. Redbud, flowering dogwood, black walnut, red mulberry, most pines, white oak, blackjack oak, red oak and black oak.

***After the Flood:*** Soils often become compacted and crusted after a heavy rainfall. This also can restrict oxygen to the roots. Lightly scraping the soil to break this crust will help maintain a healthy root system and therefore, a healthy plant. Be careful not to cultivate too deeply as shallow roots may be damaged. If you think the excessively wet weather will continue, bedding up the rows before planting even just a couple of inches, will improve drainage and allow for better aeration.

## **TOMATO LEAF-SPOT DISEASES**

This time of year, two common leaf-spot diseases appear on tomato plants. Septoria leaf spot and early blight are both characterized by brown spots on the leaves. Septoria leaf spot usually appears earlier in the season than early blight and produces small dark spots. Spots made by early blight are much larger and often have a distorted "target" pattern of concentric circles. Heavily infected leaves eventually turn yellow and drop. Older leaves are more susceptible than younger ones, so these diseases often start at the bottom of the plant and work up. Mulching, caging, or staking keeps plants off the ground, making them less vulnerable. Better air circulation allows foliage to dry quicker than in plants allowed to sprawl. Mulching also helps prevent water from splashing and carrying disease spores to the plant. In situations where these diseases have been a problem in the past, rotation is a good strategy. It is too late for that now, but keep it in mind for next year. Actually, rotation is a good idea even if you have not had problems in the past. But many gardens are too small to make it practical. If you have room, rotate the location of the tomatoes each year to an area that has not had tomatoes or related crops (peppers, potatoes, eggplant) for several years. If rotation is not feasible, fungicides are often helpful. Be sure to cover both upper and lower leaf surfaces, and reapply fungicide if rainfall removes it. Plants usually become susceptible when the tomato fruit is about the size of a walnut. Chlorothalonil is a good choice for fruiting plants because it has a 0-day waiting period, meaning that fruit can be harvested once the spray is dry. Chlorothalonil can be found in numerous products including Fertilome Broad-Spectrum Landscape and Garden Fungicide, Ortho Garden Disease Control, GardenTech Daconil and others. Be sure to start protecting plants when the disease is first seen. It is virtually impossible to control this disease on heavily infected plants. If chlorothalonil doesn't seem to be effective, try mancozeb (Bonide Mancozeb Flowable). Note that there is a five-day waiting period between application and when the fruit can be harvested. You may wish to pick some tomatoes green just before you spray if you use Mancozeb as the tomato fruit will ripen inside.

### ***"Tomatoes" on Potatoes***

Under favorable weather conditions, potatoes produce fruit. These structures are borne on the top of the plant and look much like small tomatoes. (Tomatoes and potatoes are closely related). Potato fruits are not edible. They contain a toxic substance (solanine) that can cause illness if eaten. Also, potato fruits should not be saved for seed because progeny does not come true. Rather, remove and dispose of fruit so children do not eat them.

### ***Squash Bugs***

Squash bugs are the grey, shield-shaped bugs that feed on squash and pumpkin plants. If you have had problems with these insects in the past, you know that they are almost impossible to control when mature. This is because the squash bugs have a hard body that an insecticide has difficulty penetrating. Thus, spraying when the insects are small is important. We are now seeing the nymphs of the first generation. These nymphs will eventually become adults, which will lay eggs that will become the second generation. The second generation can be huge and devastating. Therefore, it is important to control as many squash bugs now as possible. Because squash bugs feed by sucking juice from the plant, only insecticides that directly contact the insect will work. General use insecticides such as permethrin (Bug-B-Gon Multi-Purpose Garden Dust, Green Thumb Multipurpose Garden and Pet Dust, Bug-No-More Yard and Garden Insect Spray, Eight Vegetable, Fruit and Flower Concentrate, Garden, Pet and Livestock Insect Control, Lawn & Garden Insect Killer), malathion, and methoxychlor provide control if a direct application is made to young, soft-bodied squash bugs. This means that you **MUST** spray or dust the underside of the leaves because this is where the insects live.

### ***Rose Rosette***

Rose rosette is a serious problem in Kansas on wild roses (*Rosa multiflora*) in pastures and hedges. It is also found in domestic rose plantings. Infection is thought to start with rapid elongation of a new shoot. The rapid shoot growth may continue for several weeks to a length of two to three feet. Following shoot elongation, a witches' broom or clustering of small branches occurs. The stems develop excessive thorniness and produce small, deformed leaves with a reddish-purple pigmentation. Stems and petioles of *Rosa multiflora* plants may have reddish blotches or streaks. Rose plants infected with the rose rosette virus die rapidly, usually within one to two years. Rose rosette is caused by an aster yellows phytoplasma. Transmission of the disease has been shown experimentally through grafting and through an eriophyid mite, *Phyllocoptes frutiphilus*. Though KnockOut roses are resistant to many diseases, they are susceptible to this one. There is no effective control measure for infected plants. In garden settings, infected plants should be removed and destroyed, including roots. Any roots that remain after plant removal may produce infected shoots which can harbor the disease. If possible, eliminate all multiflora rose plants from the vicinity as they are extremely susceptible and will act as a carrier. Multiflora rose is the wild rose often seen growing in ditches and pastures. Since the disease can be transmitted by pruning shears, disinfect the shears when moving from one plant to another by using rubbing alcohol or a disinfectant such as Lysol.

### ***Get Ready for Bagworms!***

It is time to get ready to deal with that "infamous" insect pest known as the bagworm (Thyridoptery x ephemerae formis). Bagworms are out and about feeding on trees and shrubs, both broadleaf and evergreen. So, how can you alleviate the damage caused by bagworm caterpillars this year? You can initially start by "hand-picking" any bags formed last year, before the overwintering eggs hatch, and place them into a container of soapy water. This is very therapeutic and, if feasible, will quickly remove large populations before they cause significant plant damage. You may want to consider having a "bagworm hand-picking party" with prizes awarded to individuals that collect the most bags. For those less interested in the pleasures of "hand-picking," there are a number of insecticides labeled or registered for the control and/or suppression of bagworm populations including those with the following active ingredients (trade name in parentheses): acephate (Orthene), *Bacillus thuringiensis* subsp. *kurstaki* (Dipel/Thuricide), cyfluthrin (Tempo), lambda-cyhalothrin (Scimitar), trichlorfon (Dylox), indoxacarb (Provaunt), chlorantraniliprole (Acelepryn), and spinosad (Conserve). Many of these active ingredients are commercially available and sold under different trade names or generic products. However, several insecticides may not be directly available to homeowners. The key to managing bagworms with insecticides is to make applications early and frequently enough in order to kill the highly susceptible young caterpillars that are feeding aggressively on plant foliage. Older caterpillars that develop later in the season, in the bags, may be 3/4-inches long, and are typically more difficult to kill. In addition, females tend to feed less as they prepare for reproduction, which reduces their susceptibility to spray applications and any residues. The bacterium *Bacillus thuringiensis* subsp. *kurstaki* is active on young caterpillars; however, the active ingredient must be consumed to be effective, so thorough coverage of all plant parts and frequent applications will be required to avoid having to deal with later stages. This compound is sensitive to ultra-violet light degradation and rainfall, which reduces any residual activity.

Spinosad, which is the active ingredient in a number of homeowner products (including Borer, Bagworm, Tent Caterpillar & Leafminer Spray; Captain Jack's Dead Bug Brew; and Monterey Garden Insect Spray) works by contact and ingestion (stomach poison); however, it is most effective when ingested and it may be used against older or larger bagworm caterpillars. Cyfluthrin, lambda-cyhalothrin, trichlorfon, chlorantraniliprole, and indoxacarb may be used against both the young and the older caterpillars. However, again, thorough coverage of all plant parts, especially the tops of trees and shrubs, where bagworms commonly initiate feeding, and frequent applications are required. The reason why multiple applications will be needed when bagworms are first detected is because bagworms may "blow in" (called 'ballooning') from neighboring plants. If left unchecked, bagworms can cause significant damage, thus ruining the aesthetic quality of plants. In addition, they may actually kill plants, especially evergreens since they don't usually produce another flush of growth, and newly transplanted small plants.

If you have any questions regarding the management of bagworms, contact me at the Butler County Extension office at (316)321-9660.

**THE GRAPEVINE**

**FOR RELEASE: June 25<sup>th</sup>, 2015**

**GRUB CONTROL IN LAWNS**

If you plan on using a grub preventative on your lawn, the first half of July is a good target date for most products. Preventatives are normally used on areas that have had a history of grub problems. Traditional grub insecticides such as Dylox or carbaryl (Sevin) are normally applied in late July after grubs are present or as a rescue treatment once damage is seen. Products that contain Merit (imidacloprid) are considered grub preventers. Actually, these products do not prevent grubs, but rather kill grubs when they are quite small, and long before they cause damage. Merit is safer to use around pets and humans than traditional grub killers. Merit can be found in Bayer's Season-Long Grub Control, Grub No-More and Grub Free Zone. Another grub preventer with the trade name GrubEx contains chlorantraniliprole. Though this product is very effective, it is less water soluble than imidacloprid. It should be applied earlier, preferably April or May, but applications through June should still be effective. Remember, all grub products should be watered in soon after application.

### ***Strawberry Bed Renewal***

Next year's strawberry crop will be affected by what you do to this year's strawberry bed. The sooner after harvest the patch is cleaned up, fertilized and irrigated, if possible, the better the chance of getting a good crop next year. One of the main goals in renovation is to provide a high level of sunlight to plant leaves so they can manufacture the food the plant needs. If leaves have disease spots, remove all the leaves in the bed. Removing these diseased leaves and weeds will cause new, non-diseased leaves to develop and remove competition from weedy plants. Hedge shears or even a mower can be used. Be sure the mower blade is high enough to avoid the strawberry crowns. It is also important to reduce the number of strawberry plants so they do not compete for light, moisture and nutrients. If you have a small bed, you can hoe out or pull some plants so they are spaced about 4 to 6 inches apart. On large beds, adjust a rototiller so you can till between the rows, and cut each row back to about 10 inches wide. The next step is to fertilize the plants with about 3/4 to 1 pound (3 to 4 cups) of a complete fertilizer such as 13-13-13 (nitrogen, phosphorus and potassium) or an equivalent on each 25 feet of row. If a soil test shows adequate levels of phosphorus and potassium, use 3/4 pound (1.5 cups) of a 16-0-0 (nitrate of soda) fertilizer per 25 feet of row instead. If nitrate of soda is unavailable, use the lawn fertilizer that contains about 30% nitrogen such as a 30-0-3, 28-0-3 or something similar. Make sure the lawn fertilizer does not contain a weed killer or preventer. These fertilizers should be used at the rate of 3/4 cup per 25 feet of row. The next step is to irrigate to wash the fertilizer into the soil and provide moisture for the rapid growth of the strawberry plants. When the soil is dry, apply about 1 inch of water. A garden sprinkler can do a good job applying the water. Controlling weeds and watering throughout the summer are important so plants are vigorous when fruit buds begin to develop in September and October.

### ***Vegetables Produce Flowers But No Fruit***

If you have vegetables that are blooming but not setting fruit, you may have a problem with flower pollination. There are several possible reasons for this that usually vary by species. One condition that can affect several species at the same time is overfertilization. Too much nitrogen causes the plant to emphasize vegetative growth, often to the detriment of fruit production. Overfertilization can lead to a delay in flower production and a decrease in fruit set among the flowers produced. Squash, cucumbers, watermelon, and muskmelon can have a couple of other problems. First, the early flowers on these plants are usually all male. The production of both male and female flowers becomes more balanced as time passes. You can easily tell the difference between the two because only the female flower has a tiny fruit behind the blossom. If you have both, have not over-fertilized, and still have a problem, make sure you have pollinators. Look for the presence of bees visiting the plants. If you don't see any, try hand-pollinating several flowers. Use a painter's brush to transfer pollen from the anther of the male flower to the stigma of the female flower. If you get fruit on only those flowers you pollinated, you need more pollinators. Make sure you aren't killing them with overuse of insecticides. Tomatoes are wind pollinated and therefore not dependent on pollinators. But they have another possible problem, which is temperature. Tomatoes normally won't set if the night temperature is below 50

due to sparse pollen production. They also won't set when nighttime temperatures are above 75 degrees F and daytime temperatures are above 95 degrees F with dry, hot winds.

### ***Vinegar as a Herbicide***

We often hear of home remedies that have not been scientifically tested. Vinegar has been suggested as an effective herbicide, but until recently it had not been studied for effectiveness. The USDA's Agricultural Research Service has finally put vinegar to the test. They used concentrations of varying strengths including 5, 10 and 20 percent. Household vinegar is close to a 5 percent solution. Weeds tested included lambs-quarters, giant foxtail, velvetleaf, smooth pigweed and Canada thistle. Weeds were hand-sprayed so that the leaves were uniformly coated with material. Young plants within the first two weeks of life were killed with the 5 and 10 percent solution. Higher concentrations provided 85 to 100 percent kill regardless of the size of the weed. Canada thistle proved to be exceptionally susceptible to vinegar. The 5 percent solution gave 100 percent kill of top growth. Vinegar sold as a herbicide is most often a 20% solution. Note that all weeds tested were annuals except the thistle. Vinegar is not translocated, so it would burn the top growth of perennials but would be unlikely to kill established plants. Vinegar is commonly made from wine, cider or malt, though a wide variety of materials can be used. This study included only vinegar made from fruits or grains, so it conforms to organic farming standards.

## WHEN TO PICK BLACKBERRIES

The exact time to harvest blackberries varies by cultivar, with thorny blackberries normally ripening earlier than thornless types. But there are some general guidelines to keep in mind when harvesting blackberries. Do not pick blackberries too early or berry size and flavor will be sacrificed. Two major characteristics determining maturity for harvest are fruit color and ease of separation. Blackberries usually develop a dull, black color with plump, juicy fruitlets as they ripen. The berries soften and produce the characteristic flavor. Full color often develops before the berries separate easily. Pick the berries by gently lifting with the thumb and fingers. The receptacle, or center part of the fruit, remains in the fruit when blackberries are harvested, unlike raspberries, which leave the receptacle on the bush. Take care not to crush the berries or expose them to the hot sun. When possible, avoid picking berries when they are wet. They'll probably need picking every second or third day. Cool the berries immediately after harvest to extend shelf life. Keep them refrigerated under high relative humidity and use within three to five days.

### ***Brown Rot of Stone Fruits***

The wet weather we have seen in some areas has caused a great deal of brown rot on stone fruits such as peaches and plums. Affected fruit develop a gray to brown, fuzzy growth on the fruit which may rot in as little as a day or two. It is best to start treating fruit about a month before harvest but spraying is still helpful even if we are within that one month period. Fruit that shows symptoms cannot be saved but should be destroyed to prevent further spread. Use Captan or myclobutanil (Immunox) for control. Many fruit tree sprays contain Captan but check the label to be certain. Apply Captan or Immunox every 7 to 14 days. Both products can be applied up to the day of harvest. Note that though Immunox is labeled for fruit but Immunox Plus is not.

### ***Brown Patch on Fescue***

We have been receiving numerous reports of brown patch showing up on tall fescue. This disease is favored by warm night temperatures and extended periods of leaf wetness. If you go outside in the morning and the lawn is covered with dew and the temperature is in the high 60s or higher, it means that conditions are getting right for brown patch. The fungus is primarily a leaf pathogen and does not attack the roots. During severe outbreaks, the fungus may invade the lower leaf sheaths and crown and kill plants. But in most cases, the turfgrass can recover from brown patch. This recovery may take two to three weeks, depending on weather. There is no way to eliminate brown patch from a lawn. It will persist indefinitely in the soil. Therefore, the disease is not carried from one lawn to another. In almost all cases, the limiting factor for brown patch development is the weather, not the amount of fungal inoculum. Although you can't eliminate the fungus, cultural practices – especially irrigation – can help control it. Don't water in the evening; instead, water early in the morning. This will help decrease the number of hours the leaf tissue remains wet and susceptible to infection. The frequency of irrigation is not as important as the time of day you do it. Don't overfertilize and certainly don't fertilize when brown patch is active. Also, don't get your seeding or overseeding rates too high. Fungicides can be effective in preventing brown patch, but the two most commonly used products (Heritage and ProStar) are expensive and not available in small quantities to the general public. Homeowners do have access to some effective products including triadimefon (Green Light Fung-Away), propiconazole (Bayer Fungus Control for Lawns, Fertilome Liquid Systemic Fungicide II) and myclobutanil (Immunox). Of the three, triadimefon may be the fungicide of choice because it protects the turf longer (3 to 5 weeks rather than 2 weeks). But my suggestion is not to use fungicides unless you want to maintain a blemish-free yard and are willing to pay for it. In those cases, you would need to be on a preventative spray program, which is very expensive, rather than waiting for symptoms and applying as a curative. These products do not cure an infection already present but are only effective as a preventative. Applications should begin in mid-June and continue through August. Remember that more often than not the turf will recover from brown patch.

### ***Harvesting Potatoes***

Potatoes are ready to harvest when the vines are about half dead. Potatoes dug too early have tender skins and are easily bruised. Delaying digging will allow the soil to heat because it is no longer shaded by foliage. High soil temperatures can lead to sprouting potatoes. Allow potatoes to "set" by keeping them in a shady, dry location for a day or so. Move them to a cool, moist environment such as a cellar or cool basement for longer storage.

### ***Pulling Onions***

Onions are ready to harvest when about half the plants have tops that have fallen over. This is a sign that the onions are mature and need to be pulled out of the ground. Bulbs may sunburn without the foliage to protect them. The secret to onions keeping well is to allow the tops to dry completely before storage. Move onions to a shaded, well-ventilated area after harvest. After tops are completely dry, store in a cool, dry location. Large-necked onions take more time to dry than small-necked onions such as Bermuda types. Avoid storage in plastic bags because the lack of air circulation will shorten storage life. Use an open, mesh bag instead.

### ***Sweet Corn Earworm***

Corn earworm tends to be a problem every year on sweet corn in Kansas. The earworm moth lays eggs on developing silks at night. When the egg hatches, the larva crawls down the silk and into the ear. Feeding starts at the tip of the ear and works down. Though several earworms may hatch and attack a single ear, only one is usually present at harvest due to the cannibalistic nature of the insect. Control is challenging as silks continue to grow over a period of time. This means that even if silks are treated, new silk will appear that hasn't been protected. Applications every 2 to 3 days are needed for insecticides to be effective, especially in late June to early July when peak flight of these moths usually appear. There is a three-week period from silking to harvest, but there is only a two-week period from when the silks appear to when they begin to dry. Since moths prefer juicy silks and shun those that have started to dry, insecticides are only needed the first two weeks of silking. Homeowners can use cyfluthrin (Baythroid; Bayer Powerforce Multi-Insect Killer) or spinosad (SpinTor; Captain Jack's Dead Bug Brew; Conserve; Borer, Bagworm, Tent Caterpillar & Leafminer Spray). Spinosad is an organic product. Commercial growers have additional choices including zeta-cypermethrin (Mustang Max), bifenthrin+zeta-cypermethrin (Hero), spinetoram (Radiant) and flubendiamide (Belt). Though more time consuming, mineral or other light horticultural oils may also be used. The oil is placed inside the silk end of the ear with a medicine dropper ( $\frac{1}{2}$  to  $\frac{3}{4}$  of a dropper) after the silks brown. This will coat the earworms already present and likely suffocate them, though some damage to the tip of the ear will likely have occurred. Applying the oil before the silk has browned may interfere with pollination, leading to incompletely filled ears.

## **MASTER GARDENERS ACCEPTING NEW APPLICANTS!!!**

It's that time of year again, time to start thinking about dusting off the Master Gardener applications and spreading the word about the next class.

**WHAT** is a Master Gardener? Do I have to be a gardening expert to take the Master Gardener course? Why would I want to be a Master Gardener? What does a Master Gardener do? These and many other questions come to mind when Master Gardener training is mentioned. Let me try to clarify a few of these points.

A Master Gardener is a person who has a thirst for knowledge about home horticulture, you know, all that stuff growing around your house - the lawn, the shade trees, the shrubs, the garden, the fruit trees, and even your houseplants. It is a person who wants to know things like; which tomato does best in Kansas, what are the best shade trees to plant in a small yard, what kind of fertilizer is best for my fescue, when should I prune my lilac, and how do I get rid of moles that are tunneling throughout my yard. And things like; how many apple trees do I need for good fruit production, how about peaches and pears, will raspberries do any good here, what can I do to improve the soil in my garden/flower beds/yard, do I need to add lime to my soil, what can I do to control ticks, fleas, and chiggers in my yard. Let's not forget about bagworms. What about herbs, and did I mention crabgrass, or dandelions. How many hours of sunshine should you have on your water garden? How much sun does your vegetable garden need?

This is just a small sample of some of the questions that commonly come up in the everyday world of home horticulture. A Master Gardener is not a person who knows all the answers to these questions, but someone who wants to know these answers and wants to learn where to go to find out the answers to other questions just like these.

**WHY** would anyone want to become a Master Gardener? Well, first to gain the aforementioned knowledge, and second, to share this information with friends, neighbors, and other people in the community. Past classes of Master Gardeners have participated in such projects as the landscaping and planting of the courthouse grounds, conducting a tomato taste test at the Butler County Fair, volunteering to assist at the compost site, routing traffic and taking surveys during the Household Hazardous Waste Collection day, and provided assistance during the county fair with the horticulture judging contests and judging of the horticulture exhibits, downtown planting of the planter boxes and establishment and planting of the Extension Demonstration Garden. Most recently the Butler County Master Gardeners have installed a water garden at the demonstration garden, and are currently working on the landscaping of that new feature. There's also the Numana community garden that Butler County Master Gardeners are involved with.

**HOW** do I become a Master Gardener? By simply filling out an application form at the Extension office (we will even mail it to you) and being available to attend twelve training sessions between 9:00 AM and 4:00 PM on Thursdays from September 10<sup>th</sup> to December 10<sup>th</sup>. Thanksgiving is excluded of course, along with the week of October 22<sup>nd</sup>. **IN EXCHANGE** for over 40 hours of comprehensive training in home horticulture you will be asked to give back 40 hours of volunteer service to the horticulture programming efforts of the Butler County Extension office. There is a fee of \$110.00 to cover the cost of the program and educational materials, but what a small price to pay for what you receive. Sessions on landscaping, gardening, fruit and nut production, lawn care, insect and disease control, organic methods, soil management, annuals and perennials, nuisance animals, plant propagation, houseplants and more are all part of the program.

**ANYONE** that thinks they might be interested in taking the Master Gardener training should call 321-9660 or come down to the Extension office at the 206 N. Griffith (the fairgrounds) and pick-up an application.

### ***Bermudagrass Control***

Bermudagrass can make a nice lawn if you don't mind its invasiveness and short growing season. But many people dislike both these characteristics. Warm-season grasses, such as bermudagrass, zoysiagrass and buffalograss, green up later than cool-season grasses such as tall fescue and Kentucky bluegrass. They also go dormant earlier in the fall, which can make a lawn unattractive. Bermuda that invades a cool-season lawn will be brown during much of the spring and fall while the tall fescue portion of the lawn is green. Bermuda is

much more drought and heat resistant than cool-season grasses, so it will take over a cool-season lawn during the summer months if it is in full sun.

So, how do you control bermudagrass that has invaded a cool-season lawn? Research conducted in 1996 showed that glyphosate (Round-up, Kleen-up, Killzall, Kleeraway) is the best herbicide for the job. Glyphosate is a nonselective herbicide and will kill everything— including tall fescue or Kentucky bluegrass. Therefore, you will need to reseed treated areas. The label recommendation for Bermudagrass control is a 3% solution of the maximum strength Glyphosate. To get this add 4 oz of 41% Glyphosate to one gallon of water. Glyphosate works best if bermuda is growing well. The better the bermudagrass is growing, the more chemical is taken up and pushed into the roots. Water and fertilize if needed to get it going and don't mow it for a while, maximum leaf surface is needed for best results. To minimize the amount of time that you have no turf cover in your yard it is best to spray in August. This will allow you time to prepare the ground after spraying and be ready to plant a cool-season grass in early September. Wait two weeks and scalp the lawn (mow as low as possible and remove clippings.) This will prevent dead grass from covering any bermuda that starts to recover. Wait another two weeks and spray again with glyphosate if there is any green. Wait one more week and reseed.

## EL DORADO FARMERS MARKET - FOCUS ON QUALITY!

I finally made it down to the new El Dorado Farmers Market this year. I've been remiss due to a deer stand project that really needs to get finished before that season sneaks up on me. But I digress, this is about the market and not my feeble attempts to put venison in the freezer.

Bright and early last Saturday morning I made my way through the new farmers market. In case you missed it, the City of El Dorado has done some re-modeling to the old Home Lumber store at 121 W. Ash, just one block west of Main between Ash and Olive. Lots of parking, wet ground wasn't a worry and the inside of the building has been cleaned up and bathrooms are going in. Once inside I had to remember that many local growers have had a tough time of it this year due to excessive rain and one doozy of a hail storm.

Four vendors have taken up residence there on Saturday mornings now. The products on display were as nice as any I've seen at any market in Oklahoma, Missouri or Kansas. Very high quality fresh tomatoes, squash, cucumbers, onions and peppers were in abundance. One vendor has locally produced honey and the new local brewing company has a display of products also.

The great thing about this new location is that there are plans to make this a year-round market that will be largely unaffected by the vagaries of the weather. It takes time to build a market and a customer base, and I certainly hope that the community can get behind the good folks that work so hard to bring fresh, locally grown produce to our area. So come on down and check it out, the market is operating on Saturdays from 7 AM to noon and Tuesday evenings from 5 PM to 7 PM.

### ***Master Gardener Applications Now Available!***

It's that time of year again, time to start thinking about dusting off the Master Gardener applications and spreading the word about the next class.

**WHAT** is a Master Gardener? Do I have to be a gardening expert to take the Master Gardener course? Why would I want to be a Master Gardener? What does a Master Gardener do? These and many other questions come to mind when Master Gardener training is mentioned. Let me try to clarify a few of these points.

A Master Gardener is a person who has a thirst for knowledge about home horticulture, you know, all that stuff growing around your house - the lawn, the shade trees, the shrubs, the garden, the fruit trees, and even your houseplants. It is a person who wants to know things like; which tomato does best in Kansas, what are the best shade trees to plant in a small yard, what kind of fertilizer is best for my fescue, when should I prune my lilac, and how do I get rid of moles that are tunneling throughout my yard. And things like; how many apple trees do I need for good fruit production, how about peaches and pears, will raspberries do any good here, what can I do to improve the soil in my garden/flower beds/yard, do I need to add lime to my soil, what can I do to control ticks, fleas, and chiggers in my yard. Let's not forget about bagworms. What about herbs, and did I mention crabgrass, or dandelions. How many hours of sunshine should you have on your water garden? How much sun does your vegetable garden need?

This is just a small sample of some of the questions that commonly come up in the everyday world of home horticulture. A Master Gardener is not a person who knows all the answers to these questions, but someone who wants to know these answers and wants to learn where to go to find out the answers to other questions just like these.

**WHY** would anyone want to become a Master Gardener? Well, first to gain the aforementioned knowledge, and second, to share this information with friends, neighbors, and other people in the community. Past classes of Master Gardeners have participated in such projects as the landscaping and planting of the courthouse grounds, conducting a tomato taste test at the Butler County Fair, volunteering to assist at the compost site, routing traffic and taking surveys during the Household Hazardous Waste Collection day, and provided assistance during the county fair with the horticulture judging contests and judging of the horticulture exhibits, downtown planting of the planter boxes and establishment and planting of the Extension Demonstration Garden. Most recently the Butler County Master Gardeners have installed a water garden at the demonstration garden, and are currently working on the landscaping of that new feature. There's also the Numana community garden that Butler County Master Gardeners are involved with.

**HOW** do I become a Master Gardener? By simply filling out an application form at the Extension office (we will even mail it to you) and being available to attend twelve training sessions between 9:00 AM and 4:00 PM on Thursdays from September 10<sup>th</sup> to December 10<sup>th</sup>. Thanksgiving is excluded of course, along with the week of October 22<sup>nd</sup>.

**IN EXCHANGE** for over 40 hours of comprehensive training in home horticulture you will be asked to give back 40 hours of volunteer service to the horticulture programming efforts of the Butler County Extension office. There is a fee of \$110.00 to cover the cost of the program and educational materials, but what a small price to pay for what you receive. Sessions on landscaping, gardening, fruit and nut production, lawn care, insect and disease control, organic methods, soil management, annuals and perennials, nuisance animals, plant propagation, houseplants and more are all part of the program.

**ANYONE** that thinks they might be interested in taking the Master Gardener training should call 321-9660 or come down to the Extension office at the 206 N. Griffith (the fairgrounds) and pick-up an application.

## **LOOK FOR BAGWORMS NOW**

Most calls on how to control bagworms come in late July to early August when damage appears. Bagworms are difficult to control when they are that large. They are much easier to kill while small. Bagworms overwinter as eggs inside the dead female's bag. Young larvae normally hatch and emerge during mid to late May in Kansas. Now would be a good time to use control measures if you haven't already sprayed. However, make sure the bagworms are present by looking for a miniature version of the mature bagworm. Also, check to be sure the bagworms are alive before spraying. Predators and parasites can sometimes naturally control this pest.

Insecticides commonly used for controlling bagworms include acephate (Orthene), permethrin (numerous trade names), cyfluthrin (Bayer Vegetable and Garden Insect spray), bifenthrin (Bug Blaster II, Bug-B-Gon Max Lawn and Garden Insect Killer), lambda-cyhalothrin (Spectracide Triazicide, Bonide Caterpillar Killer) and spinosad (Conserve; Borer, Bagworm, Leafminer and Tent Caterpillar Spray; and Captain Jack's Dead Bug Brew). Spinosad is an organic control that is very effective on this pest. Thorough spray coverage of foliage is essential for good control with any of these products.

## ***Blister Beetles***

These beetles are notorious for quickly stripping vegetables (especially tomatoes) and ornamentals of their foliage. There are several species of blister beetles which vary in size (often between 0.5-0.75 inch long) and color (such as black, gray or brown-striped), but most are recognized by their elongated, narrow, cylindrical, soft bodies with middle body part (thorax) narrower than the head or wingcovers. Some home gardeners like to use hand picking as a nonchemical method for controlling these large insects. However, wear gloves and use caution because these beetles contain a substance called cantharidin. This chemical is an irritant capable of blistering internal and external body tissues exposed to the chemical. On tender human skin, body fluids of adult blister beetles may cause large, erect, watery blisters. Chemical control of blister beetles is also possible. Cyfluthrin (Bayer Vegetable and Garden Insect Spray) and gamma- or lambda-cyhalothrin (Spectracide Triazicide, Bonide Beetle Killer, Bonide Caterpillar Killer) can be used for control. Cyfluthrin has a 0 day waiting period and lambda-cyhalothrin has a 5-day waiting period on tomatoes.

## ***Watering May be Needed This Summer***

Many areas of Kansas went through an extremely wet spring. Gardeners may assume that little watering may be needed this summer as the soils were completely recharged. However, many will likely need to do more watering than they expect. Rain saturated soils can damage root systems. Excess water drives oxygen out of the soil as pore spaces are filled with water. Every living cell in a plant must have oxygen to live. If there is no oxygen, roots will die. Therefore, many of our plants may need to be babied through the summer. Newly planted trees are especially vulnerable as they have not established the extensive root system needed to absorb enough water during hot, dry, windy summers. Even trees two or three years old should receive special care even if the root system was not damaged by saturated soils. Deep, infrequent watering and mulching can help trees become established. Newly transplanted trees need at least 10 gallons of water per week, and on sandy soils they will need that much applied twice a week. The secret is getting that water to soak deeply into the soil, so it evaporates more slowly and is available to the tree's roots longer. One way to do this is to drill a small hole (1/8") in the side and near the bottom of a 5-gallon bucket and fill it with water. Let the water dribble out slowly next to the tree. Refill the bucket once, and you have applied 10 gallons. Very large transplanted trees and trees that were transplanted two to three years ago will require more water. A perforated soaker hose is a great way to water larger trees, a newly established bed or a foundation planting. See the accompanying article for an inexpensive way to water trees. In sunbaked soil, you may need to rough up the surface with a hoe or tiller to get water to infiltrate easily. It may be helpful to set the kitchen oven timer, so you remember to move the hose or shut off the faucet. If you are seeing surface runoff, reduce the flow. Regardless of method used, soil should be wet at least 12 inches deep. Use a metal rod, wooden dowel, electric fence post or something

similar to check depth. Dry soil is much harder to push through than wet. Record the time that was required to reach 12 inches and then use a time clock for any future waterings.

### ***Squirrel Damage to Trees***

Tree squirrels can cause a couple types of tree damage. Most commonly they clip the tips of branches. The length of severed branches is often 2 to 3 feet though they can be longer or shorter. When squirrels snip off a branch, they cut it at about a 45-degree angle and the cut is rather tattered. This is a nuisance type of damage and normally does not hurt the health of the tree.

More serious damage is caused when squirrels strip the bark off of limbs or rarely, the trunk. Wounds can be quite large and the squirrel can effectively girdle the branch by removing all the bark completely around the circumference. Branches girdled in this way will die and the tree may be ruined if those branches are major. Why squirrels do this is still a bit of a mystery. Some people think it is simply a means to sharpen their teeth or that they are seeking nesting material or water. Other people think that there are certain squirrels that are high-strung and cause this damage out of nervous energy. If the damage is limited to snipping the ends off of branches, it is probably best to ignore the activity as the tree suffers little harm. But if real damage is occurring due to extensive bark removal, try feeding and watering them. If that doesn't work, control may be necessary. Fox and gray squirrels are game animals and can be hunted in season where it is legal and safe to do so. They can also be trapped and moved away from the area they are causing damage.

## **BLOSSOM-END ROT**

Though we normally see this condition most commonly on tomatoes as evidenced by a sunken, brown, leathery patch on the bottom of the fruit, we can also see it on summer squash. Not a disease, this condition is caused by a lack of calcium in the developing fruit. It is often assumed that this means there is a corresponding lack of calcium in the soil. This is not necessarily the case, especially in Kansas. Most Kansas soils have sufficient levels of calcium. So what causes blossom-end rot? Actually, there are a number of possible causes. Let's look at some of them.

- This year, inconsistent amounts of water may be a factor. This can be due to watering practices or may be due to heavy rains followed by dry periods. Try to keep soil moist but not waterlogged. Mulching can help by moderating moisture levels over time.

- Vegetable tops will sometimes outgrow the root system during cooler spring weather. This is especially true of tomatoes. As long as it is cool, the root system can keep up. When it turns hot and dry, the plant has a problem, and water —with the calcium it carries — goes to the leaves and the fruit is bypassed. The plant responds with new root growth and the condition corrects itself after a couple of weeks.

- Heavy fertilization, especially with ammonium forms of nitrogen, can encourage this condition. Heavy fertilization encourages more top than root growth and the ammonium form of nitrogen competes with calcium for uptake.

- Anything that disturbs roots such as hoeing too deeply can encourage blossom-end rot. Mulching helps because it keeps the soil surface cooler and therefore a better environment for root growth.

There are some years you do everything right and the condition still shows up due to the weather. In such cases, remember that blossom-end rot is a temporary condition, and plants should come out of it in a couple of weeks. You may want to pick off affected fruit to encourage new fruit formation. Soils with adequate calcium will not benefit from adding additional calcium. If your soil is deficient in this nutrient, add 1 pound gypsum per 100 square feet. Gypsum is calcium sulfate and will not affect pH. Though calcium raises pH, sulfate lowers it and the two cancel each other out. Even if not needed, gypsum will not hurt anything. We have also found that spraying plants with calcium doesn't work. The fruit's waxy surface doesn't allow absorption of the material and calcium does not move from the leaves to the fruit.

## ***How to Pick a Ripe Melon***

Telling when a melon is ready to be harvested can be a challenge, or it may be quite easy. It all depends on the type of melon. Let's start with the easy one. Muskmelons are one of those crops that tell you when they are ready to be picked. This can help you not only harvest melons at the correct time but also choose good melons when shopping. As a melon ripens, a layer of cells around the stem softens so the melon detaches easily from the vine. This is called "slipping" and will leave a dish-shaped scar at the point of stem attachment. When harvesting melons, put a little pressure where the vine attaches to the fruit. If ripe, it will release or "slip." When choosing a melon from those that have already been harvested, look for a clean, dish-shaped scar. Also, ripe melons have a pleasant, musky aroma at room temperature (not refrigerated).

Watermelons can be more difficult and growers often use several techniques to tell when to harvest.

1. Look for the tendril that attaches at the same point as the melon to dry and turn brown. On some varieties this will need to be completely dried before the watermelon is ripe. On others it will only need to be in the process of turning brown.

2. The surface of a ripening melon develops a surface roughness (sometimes called "sugar bumps") near the base of the fruit.

3. Ripe watermelons normally develop a yellow color on the "ground spot" when ripe. This is the area of the melon that contacts the ground.

Honeydew melons are the most difficult to tell when they are ripe because they do not "slip" like muskmelons. Actually, there is one variety that does slip called Earlidew, but it is the exception to the rule. Ripe honeydew melons become soft on the flower end of the fruit.

The "flower end" is the end opposite where the stem attaches. Also, honeydews should change to a light or yellowish color when ripe, but this varies with variety.

## STILL TIME FOR SALAD GARDEN

Plant salad crops such as lettuce, radishes, spinach, turnips, mustard and other greens from mid-August to early September for a fall harvest. Plant slightly deeper than you did in the spring. This will keep the seed slightly cooler though still warm and the soil should retain moisture longer. Water frequently (if needed) until seedlings start to emerge — which should be fast with our warmer soils. Watering heavy soils can sometimes cause a crust to form. This can be prevented by a light sprinkling of peat moss, vermiculite or compost directly over the row. Reduce watering frequency after plants emerge. Plants may need to be protected from hungry rabbits and insects.

### *Elm Leaf Beetle*

There are normally two generations of this insect in Kansas with this being the second generation. All species of elms are attacked, but Siberian elms (often referred to as Chinese elms) are preferred. Elm leaf beetles are serious nuisance pests of elms. Both adults and larvae feed on the elm leaves. Adult beetles are green-and-yellow striped and about 1/3-inch long. Young larvae are black and hairy but become yellow with two longitudinal dark stripes as they mature. The larvae cause most of the injury by window-feeding on foliage, resulting in a skeletonized appearance. Heavily infested leaves turn brown as if scorched by fire and often will drop prematurely. After several weeks of feeding, the larva crawl down the trunk or fall to the ground where they pupate. Elm leaf beetles overwinter as adults. Active larvae can be controlled with a number of insecticides. However, check to make sure that larvae are still active before spraying. In many cases, the larvae have dropped from the trees and are pupating. Spraying is ineffective and unnecessary once pupation starts. Effective sprays for larvae (and adults) include carbaryl (Sevin), acephate (Acephate, Orthene), spinosad (Conserve; Captain Jack's Dead Bug Brew, Borer; Bagworm, Leafminer & Tent Caterpillar Spray) lambda-cyhalothrin (Scimitar, Spectracide Triazicide, Bonide Beetle Killer).

### *When Are Apples Ready to Pick?*

Apples mature over a long period of time depending on variety. Some varieties such as Lodi can mature in July and others as late as October. Here are some guides to help you decide when to pick your apples.

**Color change:** As apples mature, the skin color in areas of the stem and the calyx basin at the bottom of the apple turns from an immature green to a light-yellow color. Some apples will develop a red skin color before they are ripe, so this is not a reliable indication of maturity.

**Flavor:** This is a good guide if you are familiar with the apples you have and know how they should taste. Even if you do not know the characteristic flavor of the kind of apple you have, you can still sample slices of a few apples and decide if they have a sweet flavor. If they are not ready to harvest, they will taste starchy or immature. If apples have already fallen and taste a bit starchy, store them for a period to see if they become sweeter.

**Flesh color:** As apples mature and starches change to sugars, the flesh changes from very light green to white. When you cut a thin slice and hold it up to the light you can see the difference.

**Days from bloom:** The number of days from bloom is a reliable guide for general maturity time, but weather conditions will have some influence. Some kinds of apples and approximate days from bloom to maturity are Jonathan, 135, Delicious, 145, Golden Delicious, 145, and Winesap, 155 days. This process may be slower than usual due to the cooler weather this year.

**Seed color:** The seeds of most apples change from light green to brown as the fruit ripens. This indicator should be combined with other changes since it is not absolute. The flavor of the apples, the change in color of the stem and calyx basins and flesh color are important in deciding if apples are ready to harvest.

### *Pesticide Effectiveness*

We sometimes receive complaints from homeowners regarding the lack of effectiveness of various pesticides. There can be a number of reasons for this lack of efficacy. Here are some of the common ones:

**1. Lack of good foliage penetration.** This often is a problem when spraying for bagworms on junipers. The spray must penetrate the foliage and reach the bagworms toward the inside of the plant. High-pressure

commercial sprayers are able to get the spray to the insects but homeowner models are much more problematic. With pump-up sprayers, you may have to push the wand through the outer layer of foliage to reach insects toward the inside of the plant.

**2. Not spraying where the insect is.** Many of our insects and mites feed on the underside of leaves. If the plants are sprayed over the top, little to no pesticide reaches the pests. This problem is often seen with spider mites on broadleaf plants and cabbage worms on cabbage, broccoli and cauliflower.

**3. Maturity of pest.** Insects become much more difficult to control when they become adults. For example, Sevin does a good job of controlling young, early instar grasshoppers but is much less effective on adults.

**4. Level of disease pressure.** Most fungicides are better used as preventatives than as curatives. If a disease gets firmly established, it may be difficult to bring it back under control. For example, chlorothalonil is effective in controlling early blight and Septoria leaf spot on tomato if used as a preventative. However, chlorothalonil will not control these diseases on badly infested plants.

**5. Choosing the wrong product.** Homeowners often use a product they have on hand. However, products differ markedly in how well they control specific pests. Make sure the pest you wish to control is on the label. Unfortunately, even labeled products may vary in effectiveness. Check K-State Research and Extension recommendations for products.

**6. High pH spray water.** Certain pesticides are not stable in high or low pH water. Following are some examples.

- \* Captan has a half-life of 3 hours at a pH of 7.0, but only 10 minutes at a pH of 8.0.
- \* Carbaryl (Sevin) has a half-life of 24 days at pH 7.0, but only 1 day at pH 9.
- \* Diazinon is most stable in pH 7 water, with a half-life of 10 weeks; at pH 5, it is 2 weeks.

The half-life of a product is the amount of time it takes for half of the product to be neutralized. For example, if you apply 3 ounces of a product to a gallon of water and the half-life is 8 hours, only half of the product is still active at 8 hours, one-fourth of the product is active 16 hours and 1/8 of the product is still active at 24 hours.

## **FERTILIZE STRAWBERRIES**

An August application of nitrogen on spring-bearing strawberries is important in order to increase the number of strawberries produced next spring. Plenty of daylight and warm temperatures during June, July and August promotes the growth of new runner, or daughter, plants. As daylight hours dwindle and temperatures grow cooler in September and October, fruit buds for the next year's fruit crop develop. To get a good berry crop next spring, it is important for strawberry plants to be vigorous during this period of fruit bud development. Nitrogen, applied mid August, will help promote fruit bud development. A general application rate is ½ to ¾ pound of actual nitrogen per 100 feet of row. The nitrogen may be in the form of a fertilizer mixture such as ammonium phosphate or 12-12-12, or in a fertilizer containing only nitrogen such as urea or ammonium nitrate.

Some specific examples would include:

Iron + (11-0-0) at 6 pounds per 100 feet of row.

12-12-12 at 5.5 pounds per 100 feet of row.

Nitrate of Soda (16-0-0) at 4 pounds per 100 feet of row

Ammonium sulfate (21-0-0) at 3 pounds per 100 feet of row

Urea (46-0-0) at 1.5 pounds per 100 feet of row

After spreading the fertilizer, sprinkle the area applying at least a half-inch of water to move the nitrogen into the strawberry root areas.

## ***Green June Beetle***

These large beetles feed on sweet corn, blackberries, and peaches. They look much like the common May beetle, or June bug, but have a dull, velvety green color. The underside is more of an iridescent green. These beetles have poor navigational skills and seem to fly until they hit something. They also make a buzzing sound somewhat like a bumblebee. Unfortunately, they are also about the size of a bumblebee and so cause concern for many gardeners even though they cannot harm people. As noted above, they may damage crops. A number of general-use insecticides, including malathion, may be used to discourage feeding.

## ***Tomatoes and Stinkbugs***

Stinkbugs are the shield-shaped insects that emit a foul odor when disturbed. This insect injures the tomato by using its mouthparts to probe through the skin of the fruit. Look for tomatoes with golden-yellow, pink or white spots on the fruit as the fruit ripens. Color development is affected where probing occurs, which results in the off color, cloudy spots. Heavy feeding causes spots to spread, so tomatoes may develop a golden color. If you look closely, you can see the pinprick-sized puncture wounds in the middle of the spots. Hard, whitish, callous tissue develops beneath the skin at the area of wounding. By the time you see the spots, stinkbugs are often gone, so control's impossible. Affected tomatoes are safe to eat.

## ***Pay Attention to "Other Crop" on the Grass Seed Label***

Fall planting time is close at hand, so it's time to talk about grass seed. Many people have the idea that all grass seed is basically the same. Big mistake! Choosing quality seed is one of the most important steps in successfully planting or overseeding your lawn. If you don't know what to look for, you may be introducing unwanted intruders into that new stand. In particular, we are concerned with seed contaminated with orchardgrass and/or rough bluegrass (also known by its Latin name, *Poa trivialis*, or *Poa triv* for short). These are both perennial grassy weeds that cannot be selectively controlled once they are in a lawn. Orchardgrass is a problem because it is faster growing and lighter green than our turfgrasses. It is a bunch grass and so doesn't spread, but infested areas are still unsightly due to small tufts of this species pockmarking the lawn. Rough bluegrass is fine-textured and forms circular patches in the lawn. It blends in fairly well until summertime heat causes it to turn brown rapidly. If the rough bluegrass would just die in the heat, it would only be a temporary problem. Unfortunately, it usually just goes dormant, turning green again with cooler temperatures and rain. Buying quality seed starts with knowing how to decipher the seed label. One of the most important things to look for is listed as "% other crop." "Other crop" refers to any species that is intentionally grown for some

purpose. That would include turfgrasses (those species other than the one you are buying) and pasture grasses. Orchardgrass and rough bluegrass both are listed as "other crop" seed. Seed labels are required by law to show the percentage (by weight) of "other crop" in the bag, but unless a species constitutes 5% or more, the label doesn't have to list each species by name. How much "other crop" is too much? That's a difficult question to answer, but the tolerance is very low. It depends on what the "other crop" actually is, and the quality expectations of the buyer. In practice, "other crop" may refer to something relatively harmless, like a small amount of perennial ryegrass in a bag of tall fescue, or it may refer to something bad, like rough bluegrass or orchardgrass. The homeowner really has no easy way of knowing what the "other crop" is, although there are some hints. If it is something bad, less than ½ of 1% can ruin a bag of seed. Obviously, if your expectations are high for the area you are planting, you would want the "other crop" to be as close to zero as possible. Good quality seed will often have 0.01% "other crop" or less.

## **GIVE COOL-SEASON GRASSES A BOOST**

September is almost here and that means it is prime time to fertilize your tall fescue or Kentucky bluegrass lawns. ***If you could only fertilize your cool-season grasses once per year, this would be the best time to do it.*** These grasses are entering their fall growth cycle as days shorten and temperatures moderate (especially at night). Cool-season grasses naturally thicken up in the fall by tillering (forming new shoots at the base of existing plants) and, for bluegrass, spreading by underground stems called rhizomes. Consequently, September is the most important time to fertilize these grasses. Apply 1 to 1.5 pounds of actual nitrogen per 1,000 square feet. The settings recommended on lawn fertilizer bags usually result in about 1 pound of nitrogen per 1,000 square feet. We recommend a quick-release source of nitrogen at this time. Most fertilizers sold in garden centers and department stores contain either quick-release nitrogen or a mixture of quick- and slow-release. Usually only lawn fertilizers recommended for summer use contain slow-release nitrogen. Any of the others should be quick-release. The second most important fertilization of cool-season grasses also occurs during the fall. A November fertilizer application will help the grass green up earlier next spring and provide the nutrients needed until summer. It also should be quick-release applied at the rate of 1-pound actual nitrogen per 1,000 square feet.

### ***Trees Losing Bark and Dying***

Some trees such as sycamore, silver maple and redbuds naturally lose the outer layer of bark, especially during years of good growth. This is a natural process and is not a cause for concern.

However, this year, we are seeing a wide variety of trees losing more than just the outer layer of bark and then dying quickly. I think what is happening is all related to the November freeze last fall. In this area of Kansas, we went from 69 degrees on November 10 to 19 degrees the following morning. Unfortunately, many trees had not hardened off yet and were damaged. The first sign of damage was marcescence where trees that normally drop their leaves in the fall, didn't. Leaves didn't drop because they didn't have enough time to develop an abscission layer at the base of each leaf that allowed it to fall. Though marcescence itself does not harm the tree, it is a clue that further damage may have occurred. So, what happened? I think this is all related to damage to the living tissue under the bark. The sharp drop in temperature killed at least a portion the phloem and the cambium. Remember the phloem carries food made in the leaves to all parts of the plants including the roots. The cambium produces new phloem as well as xylem. Xylem will be discussed later. Now that the phloem is dead and the cambium cannot produce new, living phloem, the roots don't receive the food needed to survive and eventually starve to death. Why didn't these trees die immediately? First of all, a healthy root system has stored energy reserves that it can use to keep the tree alive. When those reserves are depleted, the tree dies very quickly. However, a tree also needs water. Since the living portion of the trunk was killed, wouldn't this stop water flow? Actually, it would not. The reason it would not is due to how a tree grows and, specifically, how xylem works. Xylem is the structure that carries water from the roots to the top portions of the plant. Even in perfectly healthy trees, most of the xylem is dead. This dead xylem forms hollow tubes that carry the vast majority of water and nutrients throughout the plant. Though there are living xylem cells, the contents of those cells make them inefficient in moving water. Therefore, the functional portion of the xylem wasn't hurt by the freeze because it was already dead. Since this xylem system still works, the tree can live for quite a period of time until the roots starve. Does that mean a tree with cracking or lost bark will die? It all depends on how much of the living tissue under the bark was killed. If only a small portion was killed then the tree may recover. If the entire circumference was killed, it is done for and there isn't anything you can do to save it. Any portion of the trunk where the bark comes off and the underlying layer is brown is dead. If you are unsure how much of the trunk was damaged, continue to water the tree as needed until the twigs become brittle. If the twigs become brittle, the tree is dead.

### ***Pear Harvest***

Pears should not be allowed to ripen on the tree. They should be picked while still firm and ripened after harvest. Tree-ripened fruits are often of poor quality because of the development of grit cells and the

browning and softening of the inner flesh. Commercial growers determine the best time to harvest pears by measuring the decrease in fruit firmness as the fruit matures. This varies with growing conditions and variety. A Magness meter is used for testing and measures the pressure needed to push a 5/16-inch tip a specified distance into an individual fruit. Home gardeners can use these other indicators:

1. A change in the fruit ground color from a dark green to light green or yellowish green. The ground color is the "background" color of the fruit.
2. Fruit should part easily from the branch when it is lifted up and twisted.
3. Corking over of lenticels. Lenticels are the "breathing pores" of the fruit. They start out as a white to greenish white color and turn brown due to corking as the fruit nears maturity.
4. Development of characteristic pear aroma and taste of sampled fruit.

Pears ripen in one to three weeks after harvest if held at 60 to 65 degrees F. They can then be canned or preserved. If you wish to store some for ripening later, fresh-picked fruit should be placed in cold storage at 29 to 31 degrees F and 90 percent humidity. Ripen small amounts as needed by moving them to a warmer location and holding them at 60 to 65 degrees F. Storing at too high a temperature (75 degrees F +) will result in the fruit breaking down without ripening.

## ***Harvesting Winter Squash***

Summer squash such as zucchini and scallop are harvested while immature but winter squash such as acorn, hubbard and butternut are harvested later, in the mature stage, after the rind is tough and seeds have developed. We normally think September is the time that winter squash are harvested. Harvesting too early leads to fruit that shrivels and rots. There are two main characteristics that help tell us when winter squash are mature: color and rind toughness.

Winter squash change color as they become mature. Butternut changes from light beige to deep tan. Acorn is a deep green color but has a ground spot that changes from yellow to orange when ripe. Gray or orange is the mature color for hubbard. A hard, tough rind is another characteristic of mature winter squash. This is easily checked by trying to puncture the rind with your thumbnail or fingernail. If it easily penetrates the skin, the squash is not yet mature and will lose water through the skin -- causing the fruit to dry and shrivel. Also, immature fruit will be of low quality. The stem should also be dry enough that excessive water doesn't drip from the stem.

Winter squash should be stored cool with elevated humidity. Ideal conditions would be 55 to 60 degrees F and 50 to 70 percent relative humidity. Under such conditions, acorn squash will usually last about 5 to 8 weeks, butternuts 2 to 3 months and hubbards 5 to 6 months.

## ***Dividing Daylilies***

Daylilies need to be divided every three to four years to maintain vigor. Though they may be divided in early spring before growth starts, it is more common to divide them at this time of year. Many gardeners cut back the tops to about half their original height to make plants easier to handle. Daylilies have a very tough root system that can make them difficult to divide while in place. Dividing in place is practical if it hasn't been long since the last division. In such cases, a spading fork can be used to peel fans from the existing clump. If the plants have been in place longer and are well grown together, it is more practical to divide them after the entire clump has been dug. Use a spade to lift the entire clump out of the ground. Although it is possible to cut the clump apart with a sharp spade, you'll save more roots by using two spading forks back-to-back to divide the clump into sections. Each section should be about the size of a head of cauliflower.

An easier method involves using a stream of water from a garden hose to wash the soil from the clump, and then rolling the clump back and forth until the individual divisions separate.

Space divisions 24 to 30 inches apart, and set each at its original depth. The flowering will be reduced the first year after division but will return to normal.

**THE GRAPEVINE**

**FOR RELEASE: August 27<sup>th</sup>, 2015**

**PEONIES MAY BE CUT BACK NOW**

Peonies often look a little bedraggled by this time of year and gardeners may want to cut them back. That will not be a problem with this perennial. Peonies are essentially dormant by September 1, even though leaves may still be green. Cut leaves off close to the ground and compost or discard.

## ***Spring Flowering Shrubs***

August through September is the time period our spring flowering shrubs set flower buds. Therefore, watering, as needed, at this time can help with next spring's bloom. Examples of spring flower shrubs include Forsythia, Flowering Quince, Almond, Beautybush, Deutzia, Pyracantha, Lilac, Mock Orange, Cotoneaster, Weigela, Viburnum and Witchhazel.

## ***Turf in Shade***

I am often asked, "What's the best shade grass for Kansas?" The answer is simple but requires explanation. Tall fescue is the best shade grass for Kansas. That does not mean that tall fescue is the best shade grass of all those grown. True fine leaf fescues such as sheep's fescue, hard fescue, and creeping red fescue are actually better adapted to shade than tall fescue, but they have difficulty surviving Kansas summers. It might be better to say that tall fescue is the best shade grass adapted to Kansas conditions. Although tall fescue is our best shade grass, that does not mean that tall fescue is all that good in the shade. Large trees that produce deep shade will not allow tall fescue to survive over the long term. I say "over the long term" because fall-planted cool-season grasses will often do well under shade trees through the fall and spring when there is less leaf cover and growing conditions are better (cooler and moister) than in the summer. We often see people plant tall fescue in the shade each fall and then wonder what happens the following summer. The answer is stress from multiple fronts. Sunlight that passes through the leaves of trees has had most of the "good" light that drives photosynthesis stripped out. The grass struggles to make the food it needs for survival and growth. When this poor diet is combined with the additional stresses of drought and heat, tall fescue is unable to survive. So, what should you do if you have too much shade for your turf? You have three choices. Reduce the shade by pruning up the lower branches of your trees so more early and late sun reaches the turf. This is not practical with many trees because it can destroy the desired shape. A second option is to plant a groundcover that is well-adapted to shady sites such as vinca groundcover or English ivy or Wintercreeper Eunonymus. ***(A caveat here though, many groundcovers can be invasive and climb up into the tree where they can adversely affect the health of the tree)***. Another solution would be to mulch the area under the tree.

## ***Power Raking and Core-Aeration***

September is the optimum time to power rake or core-aerate tall fescue and Kentucky bluegrass lawns. These grasses should be coming out of their summer doldrums and beginning to grow more vigorously. This is a good time to consider what we are trying to accomplish with these practices. Power raking is primarily a thatch control operation. It can be excessively damaging to the turf if not done carefully. For lawns with one-half inch of thatch or less, I don't recommend power raking but rather core aeration. For those who are unsure what thatch is, it is a springy layer of light-brown organic matter that resembles peat moss and is located above the soil but below the grass foliage. Power raking pulls up an incredible amount of material that then must be dealt with by composting or discarding. Core-aeration is a much better practice for most lawns. By removing cores of soil, core-aeration relieves compaction, hastens thatch decomposition, and improves water, nutrient, and oxygen movement into the soil profile. This operation should be performed when the soil is just moist enough so that it crumbles easily when worked between the fingers. Enough passes should be made so that the holes are spaced about 2 to 3 inches apart. Ideally, the holes should penetrate 2.5 to 3 inches deep. The cores can be left on the lawn to decompose naturally (a process that usually takes two or three weeks, depending on soil-type), or they can be broken up with a power rake set just low enough to nick the cores, and then dragged with a section of chain-link fence or a steel doormat. The intermingling of soil and thatch is beneficial to the lawn.

## **LITTLE BARLEY IN LAWNS**

Many people mistake little barley (*Hordeum pusillum*) for a little foxtail because the foxtail and little barley seedheads are similar. However, little barley is a winter annual that comes up in late September - October and spends the winter as a small plant. It thrives in the cooler spring temperatures, forms seed heads and dies out usually by July. Foxtail, on the other hand, is a summer annual that does well in hot weather. Also, foxtail will not produce seedheads until mid- to late-summer. So, why are we talking about little barley now? Because now is the time to control it for next year. The best control for little barley is a thick lawn that is mowed high enough that sunlight does not hit the soil. Little barley seed will not germinate in such conditions. Overseeding now can thicken up a fescue lawn and prevent a little barley infestation. However, if you do not plan to overseed, preemergence herbicides can be used to provide at least partial control of this weed. The only preemergence herbicide that I know is labeled specifically for little barley is Surflan. It is also sold under the name of "Weed Impede" by Monterey Lawn and Garden, and it can be found as the Green Light product "Amaze". Surflan can only be used on warm-season grasses (bermudagrass, buffalograss, zoysiagrass) and tall fescue grown in warm-season areas such as Kansas. However, Dimension (dithiopyr), is labeled for barley (*Hordeum* spp.) which would include little barley and therefore can be used to keep this weed under control. Because little barley is a winter annual, apply the preemergence herbicide now and water in to activate. If overseeding, do not apply any preemergence herbicide as it will interfere with the germination of tall fescue.

## ***Dividing Peonies***

Peonies are a favorite perennial of gardeners because of their beauty and low maintenance. In Kansas, peonies provide a beautiful display of flowers each spring before Memorial Day. Though peonies can be left in place indefinitely, many gardeners wish to increase their plantings and use a process known as division to accomplish this. Keep in mind, however, that peonies often take about three years to return to full bloom and size after division. Fall is the traditional time to divide these plants. The first step in division is to remove the foliage. Peonies are essentially dormant by September 1 even though the foliage is still green. Then dig out the entire plant. Shake and wash off as much soil as possible so that the pink buds or "eyes" are visible. Peony roots are tough, and a sharp knife is needed to cut the roots into separate pieces. Make sure each division has three to four buds. Make sure the location chosen for planting receives at least a half-day of full sun. However, the more sun, the better. Space the plants so that there is at least 2 feet between dwarf types and 4 feet between the standard types. Follow the same rules for planting these divisions as you do for new plants. Make sure the pink buds are about 1 inch below the soil surface. If they are set more than 2 inches deep, flowering may be delayed or completely prevented. As you set the plants, firm soil often as it is added around the plant. If the soil is not firmed, it can settle and pull the plant down with it. Water in well after planting and water as necessary through the fall and winter to keep the soil moist. It is often a good idea to add mulch to the new planting to protect it from heaving. The alternate freezing and thawing that commonly occurs during Kansas winters can "heave" weakly rooted plants out of the ground. Add a mulch of straw, leaves, compost or other material after the soil freezes. Remember, it is not the cold that harms these plants but the alternate freezing and thawing of the soil.

## ***Weird Squash***

Occasionally we receive a call from someone who has a squash (or cucumber or melon) that just doesn't look like what was supposedly planted. They often wish to know if that fruit had cross-pollinated with another vegetable close by. In such cases, the gardener is assuming that cross-pollination will affect the fruit. Such is not the case. The characteristics of the fruit are determined by the mother plant and are not affected by cross-pollination. However, there will be a problem if seed is saved for the next year from a flower that was cross-pollinated. All bets are off on what you will get if that happens. So, how do we end up with this weird vegetable? Though it could be that the gardener had forgotten exactly what he planted, more likely is that the seed he bought had been accidentally cross-pollinated before packaging. Another possibility is that the plant came from seed produced by fruit that had rotted in the garden the previous year. Regardless, don't worry

about planting different cultivars of squash or cucumbers or melons close to one another. Though cross-pollination sometimes occurs, the fruit will not be affected.

## ***Storing Apples***

You can enjoy apples from January to June – with the right conditions. Some apple cultivars can be stored for longer periods than others. Some cultivars will stay in firm, crisp condition for about 6 to 8 months with good storage conditions. The approximate length of time cultivars will keep well under refrigerated conditions are as follows:

Wealthy: 60 days, Paulared: 90 days, Gala: 120 days, Jonathan: 120 days, Grimes Golden: 120 days, Golden Delicious: 150 days, Empire: 150 days, Delicious: 160 days, Braeburn: 180 days, Idared: 200 days, Rome Beauty: 220 days, Winesap: 220 days, Fuji: 240 days, Granny Smith: 240 days, Arkansas Black: 240 days

The condition of the apples and how they are stored will strongly influence the storage period.

Some guidelines to help assure good quality and maximum storage life of apples include:

- \* Store only the best quality.
- \* Pick as they are first maturing.
- \* Avoid skin breaks, disease or insect damage, and bruises on individual fruit.
- \* Store in a plastic bag to help retain moisture in the apples. The bag should have a few small holes for air exchange. The bags of apples may be stored in boxes to prevent bruising if they must be stacked or moved from time to time.
- \* Refrigerate at about 35 degrees F. An extra refrigerator works well.
- \* Sort about every 30 to 40 days to remove fruit that may be beginning to rot.

## **HARVESTING SWEET POTATOES**

Sweet potatoes should be harvested no later than the first fall freeze because cold temps can damage the sensitive roots. However, you may want to harvest earlier if you prefer a smaller sweet potato. 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.

### ***Honeydew (not the good kind!)***

If you have ever walked under a tree and noticed the lower leaves and anything else under the tree covered with a shiny, sticky substance, then you have seen honeydew. Honeydew is actually plant sap that has passed through the body of an insect. Though aphids are the usual culprits, other members of the insect order Homoptera also can produce honeydew, including planthoppers, soft scales, mealybugs, whiteflies, psyllids, and some leafhoppers. All these insects have sucking mouthparts and usually have little impact on the landscape. The honeydew they produce is considered a nuisance because of its sticky nature. But the high sugar content of the honeydew encourages the growth of a fungus called sooty mold. Sooty mold turns anything on which it grows a black color, making it much more objectionable to people. We normally do not recommend control of these insects because populations are usually controlled naturally. Adverse environmental conditions, predators, parasites, and fungal diseases often cause populations to crash. But if you feel control is necessary, a heavy spray of water will help remove insects and honeydew from small plants. A wide range of insecticides, such as acephate (Orthene), horticultural oils, and malathion are labeled and can be used on larger plants, but again this is rarely necessary.

### ***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 of our traditional types.

### ***Harvesting and Roasting Sunflower Seeds***

Sunflowers are usually ready to be harvested beginning in mid-September and into October. Seed heads can ripen on the plant, but they will need protection from birds. Try covering the heads with a paper sack or cheesecloth once the petals start turning brown. Use a twist tie or rubber band to secure the covering. This will help keep birds out and help prevent ripened seeds from dropping out of the head. Check for maturity by looking for the following signs:

- Florets in the brown center of the flower disk should be shriveled.
- Heads should have turned down.
- The backside of the head should be lemon yellow.

The ultimate check, of course, is to pull a few seeds to see if they have turned black with white stripes, the typical color. Empty shells usually indicate a lack of pollination earlier in the year. If heads are to remain uncovered, harvest when a few seeds start turning black and white. The flavor won't be as good as when seeds ripen on the plants, but fewer seeds will be lost.

Cut the heads and place in a paper sack. Some people prefer to cut the heads with about a foot of stem attached and hang them upside down in a dry, well-ventilated area. A paper bag or cheesecloth can be placed over the heads to prevent seeds from dropping as they dry. Seeds can be easily removed from dry heads by rubbing gently.

### ***Roasting Seeds***

Raw, mature seeds may be prepared at home by covering unshelled seeds with salted water (2quarts of water to 1/4 to 2 cup salt). Bring to a boil and simmer 2 hours, or soak in the salt solution overnight. Drain and dry on absorbent paper.

Put sunflower seeds in a shallow pan in a 300-degree F oven for 30 to 40 minutes or until golden brown, stirring occasionally. Take seeds out of the oven and add 1 teaspoon of melted butter or margarine, or cooking oil per 1 cup of seeds if they are to be eaten immediately. Stir to coat. Put on an absorbent towel. Salt to taste.

## ***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.

## ***Reblooming Christmas and Thanksgiving Cacti***

Christmas Cactus (*Schlumbergera bridgesii*) and Thanksgiving Cactus (*Schlumbergera truncate*) are popular flowering holiday plants. Both are epiphytes native to the jungles of South America. Epiphytic plants grow on other plants and use them for support but not for nutrients. Though these cacti are different species, they will hybridize and produce varying stem shapes. Christmas cactus normally has smooth stem segments. Thanksgiving Cactus has hook-like appendages on each segment. Flowering will not occur unless induced by temperature and light treatment. If the temperature is held at 50 to 55 degrees F, flowering will occur regardless of day length. But flowering usually is not uniform. Temperatures below 50 degrees F prevent flowering. Nights greater than 12 hours long and temperatures between 59 and 69 degrees also can generate flowers. Twenty-five consecutive long nights is enough for flower initiation. Nights will naturally become greater than 12 hours close to the fall equinox, which is on September 23 this year. A plant receiving natural sunlight but no artificial light during night hours, will have this 25-day requirement met about October 20. It takes an additional nine to 10 weeks for flowers to complete development and bloom. Both of these cacti like bright indirect light. Too much sun may cause leaves to turn yellow. Common household temperatures are fine. Keep soil constantly moist but not waterlogged. These plants seem to flower best if kept a little pot bound. If you need to repot, try waiting until spring.

## **LAWN SEEDING DEADLINE NEARS**

September is the best month to reseed cool-season lawns such as tall fescue and Kentucky bluegrass. 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. Seedings 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.

## ***Planting Trees in the Fall***

The fall season can be an excellent time to plant trees. During the spring, soils are cold and may be so wet that low oxygen levels inhibit root growth. The warm and moist soils associated with fall encourage root growth. Fall root growth means the tree becomes established well before a spring-planted tree and is better able to withstand summer stresses. However, certain trees do not produce significant root growth during the fall and are better planted in the spring. These include beech, birch, redbud, magnolia, tulip poplar, willow oak, scarlet oak, black oak, willows, and dogwood. Fall-planted trees require some special care. Remember, that roots are actively growing even though the top is dormant. Make sure the soil stays moist but not soggy. This may require watering not only in the fall but also during the winter months if we experience warm spells that dry the soil. Mulch also is helpful because it minimizes moisture loss and slows the cooling of the soil so root growth continues as long as possible. Evergreens should be moved earlier in the fall than deciduous plants. They need at least six weeks before the ground freezes for the roots to become established.

## ***Adding Organic Materials Directly to the Garden***

If the severe 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, or rotted silage can be added and then tilled in. Coarser materials such as tree leaves or garden residue should be shredded. A lawn mower with a bagging attachment can be used to shred this material and collect it in one operation. Organic materials can be spread to a depth of about 3 inches and tilled in. 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.

## ***Garlic Planting Time***

October is a good time to plant garlic (*Allium sativum*) if you want large quality cloves next summer. Apply 3 pounds of 10-10-10 fertilizer per 100 square feet and mix into the soil before planting or fertilize according to soil test. Plant individual cloves point up and spaced 6 inches apart and 1 to 2 inches deep. The larger the clove planted, the larger the bulb at harvest. Water in well and mulch with straw to conserve soil warmth and encourage good establishment. Harvest will not occur until next summer. Test dig when the lower 1/3 of the foliage is yellow. If the cloves have segmented, it is time to harvest. If they haven't segmented, wait another week or two.

Elephant garlic (*Allium ampeloprasum*) should also be planted now. It is a plant with a milder garlic flavor and is actually a closer relative to the leek than to true garlic.

## ***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. But as fall approaches and night temperatures approach 50 F, it is time to think about bringing plants inside for the winter. 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 used to receiving much more sunlight than they do indoors. So how do we help houseplants adjust 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.

## **TIME TO PLANT SPRING-FLOWERING BULBS**

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 wet. 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.

### ***Twig Girdler***

If you look at a twig girdler, you can see that it is well-equipped for the girdling task. The head is compressed from front to back, and somewhat elongate from top to bottom ---- just right for allowing it to fit into the V-shaped girdle it creates. Under magnification, their mandibles resemble the "jaws-of-life" rescue equipment ---- stout and strong, ready to cut/girdle branches ranging in size from 6 to 13 mm in diameter. Depending on the size of the individual female beetle whose legs are uniquely positioned, her 4 front legs encircle/grasp and her hind legs are positioned rearward and utilized to anchor against. The girdling process is not a complete shearing of branches. Rather, the smooth cut stops, but an intact central core remains, thus preventing the branch from dropping. However, because girdling severs vascular elements, the portion of the branch beyond the girdle dies and dries out. This results in the central core becoming brittle. It is at this point the weight of the branch (with or without the aid of the wind) overcomes the ability of the core to support the branch. The core snaps and the branch falls to the ground. Twig girdlers have a wide host range including hickory, pecan, dogwood, honeylocust, oak, maple and hackberry. While hackberry is listed as "high" on the list of hosts, in Kansas, most reports of littered lawns occur beneath elms. This preference for elm over hackberry was exemplified in an observation of side-by-side girdled elms and untouched hackberry trees. For homeowners, twig girdlers are more of a nuisance in causing the aforementioned branch litter. The recommendation is to gather up and dispose of branches. This will eliminate those beetles which emerge the following year. However, this does not mean that twig girdlers won't appear the following year. Look up and you may see many more dead branches still attached or caught up in tree canopies.

### ***Why Do Houseplants Lose Leaves After Being Brought Inside?***

Newly bought houseplants or those brought in from outside often lose their leaves. In order to understand why this occurs, we need to look at how these plants are grown and what the plant needs to do to adapt to its new environment. Houseplants are normally produced either under shade outdoors in southern states or in greenhouses. Also, many homeowners move their houseplants outside during the summer. Regardless, the plants receive much more sunlight than they do in an indoor environment. Research done in Florida in the late 1970s revealed that tropical plants grown under high light conditions produce "sun leaves" while those grown under low light conditions have "shade leaves." These leaf types differ structurally in that sun leaves have less chlorophyll (the substance that plants use to convert sunlight to energy) and the chlorophyll that is present is located deeper inside the leaf. Sun leaves also tend to be thick, small and numerous while shade leaves are

more thin, larger, and fewer in number. When plants are moved from one light condition to another they need time to adjust. This process is known as acclimatization. If they are forced to acclimatize too quickly, they will drop their sun leaves and produce a new set of shade leaves. If the acclimatization process is slower and less drastic, the plant can convert their sun leaves to the shade leaves that do better under low light. If going from shade to sun, this process is reversed. Some houseplants are acclimatized before they are sold but many are not. So how do we help our new houseplants or those moved inside acclimatize to their new home environment? Houseplants should start 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 4 to 8 weeks depending on the degree of difference in light levels between the initial and final location of the plant. Remember, plants need to be acclimatized whether they are moved from a sunny location to one that receives less light or from shade to sun. Understanding plant processes allows us to anticipate potential problems. Acclimatization gives our houseplants a greater chance of retaining leaves and avoiding the stress of completely replacing them.

### ***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. Therefore, 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.

October is the month that existing beds of spring-flowering bulbs such as daffodils and tulips are fertilized. If bulbs have been fertilized in the past, there is often plenty of phosphorus and potassium in the soil though it is best to take a soil test to be certain. If the soil needs phosphorus and potassium, use a complete fertilizer (such as 10-10-10, 9-9-6, etc.) at the rate of 2.5 lbs. per 100 square feet. This would equal 1 rounded teaspoon per square foot. If phosphorus and potassium are not needed, blood meal makes an excellent fertilizer. It should be applied at the rate of 2 pounds per 100 square feet or 1 teaspoon per square foot. Turf fertilizers such as a 27-3-3 or 30-3-3 can be used, but cut the rate by a third. If there is difficulty in determining exactly where the bulbs are planted due to the lack of foliage, fertilizing in the spring rather than the fall is acceptable. However, it is important that the plants are fertilized when the foliage first shows. Waiting until the bulbs are flowering is too late as the roots have already begun to shut down.

### ***Preventing Sunscald on Thin-Barked Trees***

Many young, smooth, thin-barked trees such as honey locusts, fruit trees, ashes, oaks, maples, lindens, and willows are susceptible to sunscald and bark cracks. Sunscald normally develops on the south or southwest side of the tree during late winter. Sunny, warm winter days may heat the bark to relatively high temperatures. Research done in Georgia has shown that the southwest side of the trunk of a peach tree can be 40 degrees warmer than shaded bark. This warming action can cause a loss of cold hardiness of the bark tissue resulting in cells becoming active. These cells then become susceptible to lethal freezing when the temperature drops at night. The damaged bark tissue becomes sunken and discolored in late spring. Damaged bark will eventually crack and slough off. Trees often recover but need TLC — especially watering during dry weather. Applying a lightcolored tree wrap from the ground to the start of the first branches can protect recently planted trees. This should be done in October to November and removed the following March. Failure to remove the tree wrap in the spring can prove detrimental to the tree.

### ***Questions on Ornamental Grasses***

Is it best to cut back ornamental grasses in the fall or spring? As a rule, ornamental grasses should not be cut back while green because they need time to move the energy found in the foliage into the roots. Even when browned by cold weather, most gardeners will leave the foliage until spring because of the interest it adds to winter landscapes. Early March is the preferred time to cut back these plants. However, dry foliage is extremely flammable and should be removed in the fall from areas where it is a fire hazard. Another question we often receive is whether we can divide ornamental grasses in the fall. Spring is the preferred time because divisions done in the fall may not root well enough to survive the winter.

### ***Fruit Planting Preparation***

If you plan to develop or add to your fruit garden next year, now is a good time to begin preparing the planting site. Grass areas should be tilled so grass does not compete with the fruit plants for soil moisture and nutrients. Have the soil analyzed for plant nutrients. Your local K-State Research and Extension agents have information to guide you in taking the soil sample. From that sample, the agent can provide recommendations on what and how much fertilizer to add to correct nutrient deficiencies. Organic materials such as compost, grass clippings, leaves, hay, straw or dried manure, can be tilled into the soil to help improve its condition. Time and weather conditions generally are more suitable in the fall than in the late winter and spring for preparing soil. If fruit plants can be set by early April, they will have developed a stronger root system to support plant growth than they would if planted later. If there are only a few plants to be planted, consider tarping each planting area to guard against a wet spring, delaying planting after plants are shipped and received. Also, fruit tree planting can be done in the fall but plants may need to be watered during the winter if the weather is warm and dry.

### ***Soil Tests and Plant Growth***

Though soil tests are useful for identifying nutrient deficiencies as well as soil pH, they do not tell the whole story. We often receive soils from gardeners that are having a difficult time growing crops even though the soil

test shows that nothing is deficient. Here are some factors that can affect plant growth that are not due to nutrient deficiencies or pH.

**Not enough sun:** Plants need a certain minimum amount of sun before they will grow well. As a general rule, flowering (and fruiting) plants need at least 6 to 8 hours of full sun per day. There are, of course, exceptions such as impatiens that bloom well in shade. Move sun-loving plants out from the shade or use plants that are better adapted to shady conditions.

**Improper watering:** Roots develop where conditions are best for growth. Shallow, frequent watering leads to roots developing primarily near the surface of the soil where the soil is moist. Such shallow root systems are easily damaged by heat and any interruption in the watering schedule. It is better to water less frequently and to a greater depth to encourage a deeper root system that is less sensitive to heat and water stress. Watering during the evening can also be detrimental to plants if the irrigation wets the foliage. Many diseases are encouraged by free water on the leaves. Watering late in the day often will keep the foliage wet until dew forms. Dew will keep the foliage wet until it evaporates the next morning. It is better to water early in the morning so leaves do not stay wet as long. If you must water late in the day, use drip irrigation if practical (such as in a vegetable garden).

**Too much phosphorus:** Most Kansas soils are naturally low in phosphorus. However, soils that have been fertilized for a number of years may have phosphorus levels that are quite high. As a matter of fact, the majority of soil tests we receive show phosphorus levels in the "high" category. Too much phosphorus can interfere with the uptake of some micronutrients such as iron, manganese and zinc. High phosphorus soils should only be fertilized with fertilizers that have relatively low amounts of phosphorus.

**Poor soil physical characteristics:** Roots need oxygen as much as they need water. A tight clay soil can restrict soil oxygen levels as well as make root penetration of the soil difficult. Increasing the organic matter content of clay soils can help break them up. Add a 2-inch layer of organic matter and till it in.

**Walnut trees:** Walnuts give off a natural herbicide that interferes with the growth of some plants such as tomatoes. Vegetable gardens should be at least 50 feet away from walnut trees if possible.

**Tree roots:** Trees not only compete with other plants for sun but also for water and nutrients. Extra water and nutrients may be needed.

**Shallow soils:** When new homes are built, the topsoil is often stripped off before the soils are brought to grade. Though the topsoil should be replaced, it sometimes is not or is not replaced to the same depth as it was originally. You are left with a subsoil that usually does not allow plants to grow well due to a lack of soil structure. Adding topsoil to a depth of 8 to 12 inches would be best but this often is not practical. In such cases, try to rebuild structure by adding organic matter and working it into the soil.

## **LAST TOMATOES OF THE SEASON**

Cold nights are increasing in frequency now that we are into October. If you have tomatoes, you may have some that are approaching maturity. Leave them on the vine until mature or until a frost is forecast. Tomatoes will ripen off the vine but must have reached a certain phase of maturity called the 'mature green stage.' Look for full-sized tomatoes with a white, star-shaped zone on the bottom end of the green fruit. When harvesting fruit before a frost, separate tomatoes into three groups for storage: those that are mostly red, those that are just starting to turn, and those that are still green. Discard tomatoes with defects such as rots or breaks in the skin. Place the tomatoes on cardboard trays or cartons but use layers of newspaper to separate fruit if stacked. Occasionally a tomato may start to rot and leak juice. The newspaper will keep the juice from contacting nearby or underlying fruit. Store groups of tomatoes at as close to 55 degrees as possible until needed.

### ***Peppers from the Garden***

Peppers are able to be stored fresh much longer than tomatoes. They can usually keep in a crisper drawer of a refrigerator for several weeks if kept moist but not wet. For longer storage, freezing works well. Though mushy when thawed, the flavor still comes through in cooked foods. Try dicing them into small pieces and then freezing on a cookie sheet. The frozen pieces can then be poured into a plastic bag for later use. Measuring is much easier as the pieces are not frozen together in a clump. This method works equally well for hot peppers.

### ***Fall Colors of Trees***

Part of the allure of fall foliage is color variation. There are trees that turn red, purple, yellow, orange and brown. Specific plant pigments determine individual colors. Foliage derives its normal green color from chlorophyll, the substance that captures the energy of the sun. Other pigments produce fall colors. Reds and purples are caused by anthocyanins, yellows by xanthophylls, and oranges by a combination of carotenes and xanthophylls. Browns are the result of tannins present in the leaf. Most of these substances are present throughout the growing season but are masked by the green color produced by chlorophyll. Anthocyanins are the exception and are produced after the chlorophyll is destroyed in the fall. If you have ever seen pictures of New England in the fall, you have probably wondered why trees in Kansas usually do not color as well. This difference is partly because of the tree species prevalent in New England. Certain oaks and maples naturally produce good color. Coloring also is influenced by the weather. Warm, sunny days and cool nights are ideal for good color. The sunny days encourage photosynthesis and, thus, sugar accumulation in the leaves. As fall progresses, each leaf develops an abscission layer at the base of the petiole, or leaf stem, that prevents these sugars from being transported down the trunk to the roots for storage. This high sugar content in the leaves produces more intense colors. Cloudy days and warm nights prevent some of the sugar accumulation in the leaves and results in less vibrant colors. Weather during other parts of the growing season also can have an effect. Heavy rains in the early spring or hot, dry weather during the summer can both have a deleterious effect on fall color. The length of time a tree maintains fall color also depends on weather. Reds, yellows and oranges are short-lived when trees undergo freezes.

### ***Oak Leaf Itch Mite***

Whereas scratching an itch sometimes provides satisfying (almost pleasurable) relief, at other times scratching an itch can be painful and distressing. The latter situation is attributable to the mite, *Pyemotes herfsi* (Oudemans). Unlike chiggers which have been long-recognized for producing annoying but fleeting bouts of itchiness, mysterious "bites" causing raised quarter-sized reddened areas each with a centralized pinhead-size blister were of widespread occurrence in 2004 in various Midwestern states. Through investigative studies, the *Pyemotes herfsi* mites were identified as being responsible for the mysterious bites. Although the existence of these mites had been well known for multiple decades, the correlation between them and reported widespread occurrences of human discomfort was unknown. The severity of the 2004 outbreaks resulted in cooperative efforts between K-State and the University of Nebraska entomologists, the resultant

being the identification of *Pyemotes herfsi* as responsible for the stressful skin disorders. *Pyemotes herfsi* were recovered from marginal fold galls on (primarily) pin oak leaves. Marginal galls are associated with the larvae/maggots of tiny midges. That is, *Pyemotes herfsi* prey upon the midge larvae. The following side-by-side close-up images show an intact marginal gall, and a dissected gall revealing female *Pyemotes herfsi*. Despite their small size, they become readily visible due to their bulbous abdomens which can contain up to 200 offspring. Due to their minuscule size compared to that of midge larvae, *Pyemotes herfsi* possess a potent neurotoxin used to paralyze their maggot hosts. This toxin is that which is responsible for initiating the skin irritations which cause discomfort in individuals upon which *Pyemotes herfsi* happens to come in contact with. Because *Pyemotes herfsi* are associated with the midge larvae responsible for marginal galls on oak leaves, *Pyemotes herfsi* have been given the common name, Oak Leaf Itch Mite. It is believed that oak leaf itch mites also prey upon the larvae of another closely related midge species responsible for the formation of vein pocket galls on the undersides of oak leaves. A full description of the oak leaf itch mite life cycle is available online by accessing Kansas State University Extension Publication MF2806.

The good news is that oak leaf itch mite populations may be extremely low or absent for years-on-end ----- people can enjoy the outdoors without having to contend with oak leaf itch mite encounters. The bad news is that the appearance of oak leaf itch mite populations is unpredictable. More bad news: Each female oak leaf itch mite produces many progeny. And the developmental cycle is reported to be just 7 days. The resultant is the production of uncountable numbers of oak leaf itch mites which ultimately leave the confines of leaf galls. Passive dispersal via air currents is the bane to people, especially those in neighborhoods where pin oaks constitute the main trees species. The bad news continues: There is a wide time frame during which encounters with oak leaf itch mite might occur. It is not only the initial late summer encounters, but the presence of oak leaf itch mites extending well into the fall when people are raking leaves and kids having fun playing in leaf piles. And if this is not enough negativity regarding oak leaf itch mites, there is little to be done (well, actually nothing to be done) in treating and reducing/eliminating their populations. The people who are most likely to encounter oak leaf itch mites will be those in living in areas/neighborhoods where oaks (again, especially pin oaks) are the dominant tree species. When oak leaf itch mite populations are excessive, restricting outdoor activities is one method of reducing the risk of exposure. While the use of repellents may work against annoying insect species which actively seek a host, repellents have little effect against oak leaf itch mites which are passively dispersed, and lack the ability to alter their course/direction. It has been suggested that susceptible individuals (yes, some people do not have negative reactions to oak leaf itch mite bites) spend as little outdoor time as possible. And showers immediately upon returning indoors might eliminate/wash off mites before they bite and cause reactions. Individuals experiencing oak leaf itch mite encounters might utilize medications and lotions so designed to provide relief from itching discomfort as well as secondary infections of excoriated areas.

## **WHY LATE LAWN SEEDINGS OFTEN FAIL**

We normally recommend that Kentucky bluegrass and tall fescue be seeded in September but no later than October 15. Though plantings later than October 15 can be successful, the odds of success diminish as time passes. The problem with late plantings is not that the seed will not come up or that young grass plants are sensitive to cold. Most often, the problem is with rooting. Unless the young grass plants have a fairly extensive root system, the freezing and thawing that takes place during winter heaves plants out of the ground, and they dry out and die. Regardless of when planted, be sure the new lawn is kept watered through the fall. More mature lawns will need less frequent watering but all should go into the winter with moist soil.

## ***Winter Storage of Summer Bulbs***

As winter approaches, we need to start thinking about storage of the bulbs that will not survive Kansas winters. The bulbs of gladiolus, caladium, dahlia, tuberous begonia, calla lily, and canna lily need to be dug and stored so they can be planted next year. Actually, the storage organ of the above plants is not a true bulb. Canna and calla lilies are rhizomes, caladium, and tuberous begonias are tubers, gladiolus is a corm, and dahlia is a tuberous rooted plant. All of these plants should be dug after frost has browned the foliage. Then, allow them to dry for about a week in a shady, well-ventilated site such as a garage or tool shed. Remove any excess soil and pack them in peat moss, vermiculite, or perlite. Make sure the bulbs don't touch so that if one decays, the rot doesn't spread. Dusting them with fungicide before storage will help prevent them from rotting. Caladium should be stored between 50 and 60 degrees F. The other bulbs mentioned should be stored near 40 degrees F. Finding a good spot to store the bulbs may be difficult. Some people place them against a basement wall farthest from the furnace and insulate them so the wall keeps them cool.

## ***Fall is a Good Time for Soil Testing***

Though we often think of soil testing as a spring chore, fall can actually be a better time. Soil-testing laboratories are often very busy during the spring resulting in a longer turnaround from submission to recommendations. Also, soils in the spring are often waterlogged, making taking samples difficult. If your soil test suggests more organic matter, fall is a much better season because materials are more available than in the spring, and fresher materials can be used without harming young tender spring-planted plants. Begin by taking a representative sample from several locations in the garden or lawn. Each sample should contain soil from the surface to about 6 to 8 inches deep. This is most easily done with a soil sampler. Many K-State Research and Extension offices have such samplers available for checkout. If you don't have a sampler, use a shovel to dig straight down into the soil. Then shave a small layer off the back of the hole for your sample. Mix the samples together in a clean plastic container and select about 1 to 1.5 cups of soil. This can be placed in a plastic container such as a resealable plastic bag. Take the soil to your county extension office to have tests done for a small charge at the K-State soil-testing laboratory. A soil test determines fertility problems, not other conditions that may exist such as poor drainage, poor soil structure, soil borne diseases or insects, chemical contaminants or damage, or shade with root competition from other plants. All of these conditions may reduce plant performance but cannot be evaluated by a soil test.

## ***Work Garden Soil in the Fall***

Fall is the preferred time to prepare garden soil for next spring's vegetable garden. Spring is often wet making it difficult to work soil without forming clods that remain the rest of the season. Fall usually is drier allowing more time to work the soil when it is at the correct soil moisture content. Even if you work wet soil in the fall and it form clods, the freezing and thawing that takes place in the winter will break them down, leaving a mellow soil the following spring.

Insects often hide in garden debris. If that debris is worked into the soil, insects will be less likely to survive the winter. Diseases are also less likely to overwinter if old plants are worked under. Also, garden debris will increase the organic matter content of the soil. Working the debris into the soil is easier if you mow the old vegetable plants several times to reduce the size of the debris. Fall is also an excellent time to add organic

matter. Not only are organic materials usually more available in the fall (leaves, rotten hay or silage, grass clippings) but fresher materials can be added in the fall than in the spring because there is more time for them to break down before planting. As a general rule, add 2 inches of organic material to the surface of the soil and till it in. Be careful not to over till. You should end up with particles the size of grape nuts or larger. If you work garden soil into the consistency of flour, you have destroyed the soil structure.

### ***Amending Soils with Sand***

Sand is sometimes suggested as an amendment material for clay soils. However, there is good reason to be cautious about using sand. In order for sand to be effective in breaking up a clay soil, sand grains must touch one another so there are pore spaces between grains that can hold air and/or water. If the grains do not touch, the clay fills in all the voids between the sand particles leaving no room for pores. This is the same principle used to make concrete and the result is somewhat the same. You end up making a bad situation worse. So how much sand does it take for it to be effective? Normally, we consider about 80 percent sand to be sufficient. In most cases this makes the use of sand impractical. The addition of organic matter is a much better choice.

## **GARDEN MUMS**

As soon as garden chrysanthemums are done flowering, you may cut the plants back to 2 to 3 inches high. Some gardeners prefer to leave the top growth so that it provides some protection from fluctuating soil temperatures. If you choose to cut the tops off, apply a layer of mulch over the top of your mums after the ground has frozen or if the forecast calls for a sharp drop in temperature. Mums should not completely dry out during the winter. It may be necessary to water occasionally if sufficient rain or snow has not fallen.

### ***Perennial Garden Clean-Up***

Fall is traditionally a time for cleaning up gardens. Normally, we recommend clear-cutting dead stems to help control insect and disease problems. With herbaceous perennials that have been pest free, you might want to consider leaving some to provide structure, form, and color to the winter garden. For example, ornamental grasses can be attractive even during the winter months. But those near structures should be cut to the ground because they can be a fire hazard. Perennials with evergreen or semi-evergreen foliage can provide color. Some perennials are naturally messy after dormancy and should be cut back in the fall. Foliage can be left for other reasons. For example, foliage left on marginally hardy plants such as tender ferns helps ensure overwintering of plant crowns. Seed heads on some perennial plants can provide seed for birds.

### ***There is Still Time to Plant Spring-Flowering Bulbs***

Generally, it is recommended to plant hardy bulbs (especially daffodils) in October to give them enough time to root before winter. But it is certainly not too late to plant them now. As long as the soil temperatures are above 40 degrees F, the bulbs should continue root development. Although many of the best bulbs have probably already been purchased, garden centers may still have a good selection. Be sure to select large, firm bulbs that have not begun to sprout. While many bulbs can adapt to a wide range of soil types, none can tolerate poorly drained soil.

Prepare the planting bed by adding organic matter such as peat moss, well-rotted manure, or compost and mix into the soil. Adequate fertility is essential. It is best to rely on a soil test to determine what nutrients are needed. Garden soils that have been fertilized regularly in the past may have excess levels of phosphorus. Excess phosphorus can interfere with the uptake of other essential micronutrients. In such cases, it would be better to use a fertilizer relatively high in nitrogen such as a 29-5-4, 27-3-3, or something similar. Apply these fertilizers at the rate of 2/3 pound per 100 square feet. Organic sources of fertilizers low in phosphorus include blood meal (12-0-0) applied at 5 to 10 pounds per 100 square feet, cottonseed meal (6-0.4-1.5) applied at the rate of 10 pounds per 100 square feet and soybean meal (7-2-1) applied at the rate of 8 pounds per 100 square feet. In the absence of a soil test, or if phosphorus is needed, add a low analysis, balanced fertilizer such as 5-10-5 or 6-10-4 at the rate of 2 to 3 pounds per 100 square feet of bed. Mix all amendments thoroughly with the soil before planting the bulbs. The size and species of the bulb determines how deep to plant. In general, the depth to the bottom of the bulb should be about 2 to 3 times the size of the bulb, but check the planting instructions specific to each particular flower.

### ***Apply Late-Season Nitrogen Application in November***

November is the time to give cool-season lawns the last nitrogen application of the season. Why November? Because while top growth slows in response to cool temperatures, grass plants are still making food (carbohydrates) by photosynthesis. A November nitrogen application helps boost the photosynthesis rate. Carbohydrates that are not used in growth are stored in the crown and other storage tissues in the plant. These carbohydrate reserves help the turfgrass green up earlier in the spring and sustain growth into May without the need for early-spring (March or April) nitrogen. Those early-spring nitrogen applications are less desirable because they can lead to excessive shoot growth and reduced root growth. Other benefits of November-applied nitrogen for cool-season grasses include improved winter hardiness, root growth and shoot density. How much should you apply? One to 1 ½ pounds actual nitrogen per 1,000 sq. ft. of lawn area is sufficient. Following the recommended spreader setting on the fertilizer bag should apply the correct amount

of fertilizer. In order for this application to be effective, the nitrogen must be readily available to the plant, because the growing season is nearly over. Therefore, for a November application, use a soluble (quickly-available) nitrogen carrier such as urea or ammonium sulfate. Many turfgrass fertilizers sold in garden centers and other retail outlets also contain soluble nitrogen. Avoid products that contain water-insoluble nitrogen (slow-release) for this application. As always, sweep up any fertilizer that gets on driveways, sidewalks, or streets and reapply it to the lawn.

### ***What is the “Wild” Shrub with the Bright Red Berries?***

People in the eastern half of the state have been reporting shrubs with bright red berries growing wild. The berries are clustered around the stem and the leaves are still a bright green color. These are likely one of two species of bush honeysuckle, Amur or Tatarian. Each species can reach 6 to 20 feet tall. This landscape shrub has become a serious understory invasive throughout the Midwest from eastern Kansas to Ohio. Many states have it on their noxious weeds list. All of our native honeysuckles are vines, similar to the vining Japanese honeysuckle. Amur and Tatarian honeysuckles are very noticeable in the spring as they put out leaves earlier than most other trees and shrubs. Leaves also stay green much later into the fall. This long growing season gives it a competitive advantage over other native species, and the vigorous growth can take over a woodland understory, reducing the number of native woodland wildflowers and other shrubs. If you want to promote native species, then controlling bush honeysuckles is needed.

Honeysuckle seedlings can be readily hand pulled when the soil is damp. Chemical control is needed for larger infestations, as cutting alone results in vigorous resprouting. Foliar applications of glyphosate (i.e., Roundup) in late summer and fall works well as does applications of Crossbow (2,4-D + triclopyr). Treating cut stumps with Tordon RTU (picloram), or concentrated (20% - 50%) glyphosate is also quite effective. Several studies have shown basal spraying with triclopyr (Garlon) not to be effective, while basal applications with 2,4-D or picloram products work well, using an oil carrier to penetrate the bark. Please follow all label instructions when using pesticides.

## **WINTERIZING ROSES**

Though most shrub roses are hardy in Kansas, other types of roses can be more tender. For example, the hybrid teas have certain species in their ancestry that originated in the warm climate of southern China. These roses need protection to reliably survive Kansas winters. Mound soil or compost about 8 to 10 inches high around each plant. If using soil, bring it in from another part of the garden. Do not pull it from between plants because this can damage the rose roots or make them more susceptible to cold. Mounding is normally finished by Thanksgiving. After the ground has frozen, add a 4-inch mulch of straw, leaves or hay for further protection. More soil may be spread on top of the mulch to keep it in place. Do not add the mulch before the ground freezes or mice may invade and feed on the roses over the winter. The purpose of these coverings is not only to moderate the cold, but also to prevent warm days during the winter or early spring from stimulating growth that is tender to returning cold weather. Excessively tall canes should be pruned to a height of 36 inches and tied together to prevent them from being whipped by strong winter winds. Wind can damage the crown of the plant or loosen the surrounding soil. Next spring, remove coverings before new growth starts. Wait until after the ground thaws, or the tops may begin growing before the roots can provide water.

## ***Roasting Pumpkin Seeds***

Now that Halloween is past, you may be wondering what to do with the pumpkins that were used to decorate for the holiday. Consider roasting the seeds before freezing temperatures destroys the pumpkin fruit. Cut open the pumpkin and remove the seeds and stringy material. Seeds should be washed and dried and the "strings" discarded. Toss the seeds with a little oil before roasting. Flavor can be enhanced by adding a sprinkling of salt to the oiled seeds. Seeds can then be spread on a cookie sheet and roasted for about 25 minutes at 325 degrees F. Times may vary depending on the size and moisture content of the seed. Seeds are done when they turn a golden brown. If seeds are not eaten immediately, store in a zip closure bag in the refrigerator.

## ***Draining Hoses and Irrigation Lines***

Hoses and shallow irrigation lines may be damaged over the winter if water is not drained. If there is a main shut-off valve for the system, close it and then run through the zones to make sure any pressure has a chance to bleed off. Lawn irrigation systems usually have shallow lines. Though some lines may be self-draining, check to be sure there are no manual drains. If manual drains are present, they should be opened. Be sure to map them so they can be closed next spring before the system is pressurized. Drain garden hoses by stretching them out and coiling them for storage. Water will drain as you pull the hose toward you for coiling. Store in a protected place. UV light can make hoses brittle over time.

## ***Winter Care of Houseplants***

During the short days of winter, houseplant growth slows, resulting in a need to change how we care for them. Although frequent watering may have been necessary during the long days of summer, the same amount now could cause problems. Excess water fills air spaces within the soil resulting in roots that receive less oxygen than they need. Water by touch, not by calendar. If the soil is dry an inch deep, it is time to water. Be sure to add enough so that some water flows out the bottom of the pot. This will help wash out excess salts that tend to accumulate within the potting soil. Fertilization also should be reduced. Normally, it is best to apply half the amount of fertilizer for flowering houseplants and one-fourth the amount for foliage houseplants. Too much fertilizer results in plants that become leggy and weak. Location is another factor that should be considered this time of year. Since day length is so short, houseplants may be helped by being moved to areas of the room that receive more light, such as a south- or east-facing window. Avoid placing plants where drafts from doors or direct output from heating ducts may contact them. Relative humidity also tends to be low during the winter. If you do not have a humidifier, frequent misting of the plants or placing them on water-filled trays of pebbles can help raise the humidity.

## **FALL CARE OF PEONIES**

Cut peony foliage back to the ground if this hasn't been done already. Compost or discard foliage. Fertilize peonies twice a year — in the spring shortly before new growth appears and then again in the fall after the plants have been cut back. A total of 1.5 to 2 ounces (3 to 4 tablespoons) of a 1-1-1 fertilizer such as a 10-10-10 or 13-13-13 per plant per application should be used. This amounts to 3 to 4 ounces of fertilizer per year. If a soil test reveals adequate levels of phosphorus and potassium, use a lawn fertilizer such as a 29-5-4, 27-3-3 or something similar, but cut the rate to 1/3 of the above rate. In other words apply ½ to 3/4 ounce (1 to 1.5 tablespoons) per plant. Never apply fertilizer directly on the center of the peony as the buds (eyes) may be damaged. Rather, place the fertilizer in a band from 8 to 18 inches from the center of the plant. Water the fertilizer in so the plant can take it up. Winter protection of herbaceous peonies is only necessary the first winter after planting to prevent alternate freezing and thawing from lifting plants out of the soil. A couple of inches of mulch should be sufficient. Any organic material that does not mat down will work and should be applied after the ground freezes. Avoid using leaves that will mat together. Remove the covering before growth begins in the spring.

The less common tree peonies have woody stems like deciduous shrubs and should not be cut back to the ground or pruned in the fall. Collect the shed leaves and place in the compost pile this fall. Though tree peonies are hardy to Zone 4, they do benefit from a light mulching over winter. Also, it is recommended that tree peonies be fertilized during November to get the plants off to a good start next spring. It is best to take a soil test to see what nutrients are needed. If the soil needs phosphorus and potassium, use a complete fertilizer (such as 10-10-10, 9-9-6, etc.) at the rate of 2.5 pounds per 100 square feet. This would equal 1 rounded teaspoon per square foot.

If phosphorus and potassium are not needed, blood meal makes an excellent fertilizer. Apply at the rate of 2 pounds per 100 square feet or 1 teaspoon per square foot. Turf fertilizers such as a 27-3-3 or 30-3-3 also can be used but at the rate of to 1 pound per 100 square feet or 1 teaspoon per 2 square feet.

## ***Soil Prep Now for Peas Next Spring***

Peas can be planted earlier than just about any other vegetable crop because they can grow well at a soil temperature of 40 degrees. Though other crops such as lettuce, parsnips and spinach can sprout at lower temperatures (35 degrees), they don't start growing well until the soil reaches about 45 degrees. However, soils are often too wet to work in the spring. Therefore, you may wish to prepare the soil now rather than next spring so that planting can take place as early as possible even if those spring soils are wet. Wait until soil temperatures reach 40 degrees next spring and sprinkle the seeds on the soil and push them in with your finger. Protection from rabbits and deer will probably be needed as they are attracted to anything green coming up early.

## ***Knotweed Control***

Knotweed thrives in compacted soils, so a thorough aeration is the first step in control. This weed will not compete in a healthy lawn. Chemically, there are two options. Knotweed is an annual that germinates in late February or early March, so a preemergence herbicide can be used in the late fall (about now). Pendimethalin (Scotts Halts), Surflan (Weed Impede), Barricade, Dimension and XL are labeled for knotweed. (Note: Pendimethalin, Barricade and Dimension can be used on all Kansas turfgrasses, while Surflan and XL can only be used on tall fescue and warm-season grasses). The other option is to use a combination postemergence product such as Trimec, Weed-Out, Weed-B-Gon or Weed Free Zone after the knotweed has germinated in the spring but is still young. If spring seeding is planned, your options are more limited. Buctril can be used on commercial sites and has a very short residual. It must be used on very young knotweed to get control. Trimec and others require a month before overseeding to thicken up your lawn. Obviously, don't use a preemergence herbicide if you are trying to get new seed established. For homeowners seeding in the spring, tilling will control knotweed adequately without using a herbicide. If seeding without tilling (e.g., overseeding using a slicer-seeder), then use a combination product such as one mentioned above just after the knotweed comes up in the spring, and be sure to wait at least a month before seeding.

## ***Begin Rabbit Protection Now***

Rabbits may begin to nibble on newly planted trees and shrubs this time of year. Protect your investment now through this winter with at least 2-foot-tall cylinders of 1-inch-mesh, chicken wire, or similar barrier. Other control methods include plastic tree wraps and liquid rabbit repellents sprayed on the plants.

## ***Horseradish***

Horseradish is ready to dig after a hard freeze kills the foliage (usually November or December). The large roots can be harvested while smaller, pencil sized roots can be cut in 6-8 inch long sections as 'seed' or 'sets' for next year's crop which are then immediately re-planted. Another option is to leave the horseradish in the ground and dig as needed. If you choose the latter option, be sure to heavily mulch the area so that the ground doesn't freeze.

To use horseradish, peel the large, fleshy roots and cut into sections. Use a blender or food processor to chop the roots along with a small amount of water and a couple of ice cubes. Vinegar or lemon juice is added to stop the process that produces the "bite" of horseradish. Add immediately after blending for a mild flavor or wait up to 3 minutes to give the horseradish more kick. Use 2 to 3 tablespoons of vinegar or lemon juice per cup of horseradish sauce along with ½ teaspoon of salt for flavor. Horseradish has an extremely strong odor and so you may wish to open the blender or food processor outdoors and to keep your face away from the container when opening. Store ground horseradish in a tightly sealed jar in a refrigerator until ready for use.

## **ORNAMENTAL GRASSES**

Ornamental grasses can really catch your eye in the fall. The way the morning and evening light glitters through the seedheads is just gorgeous. Versatile is the word of choice for this category of plants. They can take tough sites, full sun and little nutrients or water (once established). Many are very tall and can screen unsightly features in the landscape, while others are short and make excellent border accent plants. There are really only 3 simple things to remember about growing ornamental grasses in your landscape: planting time, trimming time and division time. Planting time is most of the year except for winter. Plant once the danger of frost has passed in the spring, up until the end of September. If you plant them any later than that, it's really too late. They don't have adequate time to establish a strong root system and are in real danger of dying when cold weather hits. Better to wait until your investment can grow enough during the growing season to survive the winter. Ornamental grasses look their best right now, and they will also continue to look great for the next 4 or 5 months. This is their time to shine—winter interest is a main feature of ornamental grasses. Therefore don't cut them back until February or March as winter is ending and spring is beginning. Grasses need to be trimmed to 6-8 inches in the spring in order to let the fresh new growth get through the old biomass. Trimming ornamental grasses requires gloves, long sleeves and serious tools. If your grasses are really big, like Pampas Grass, you might even want a chainsaw and chaps. If smaller, you can probably get away with pruners or hedge trimmers. Compost all that good biomass for organic matter later in the year. Every 3 to 4 years it's a good idea to divide most ornamental grasses. By then, the center may start to die out and the plants begin to look somewhat unattractive as a clump. Dig those plants out and redistribute them or give them away.

### ***Pruning Shrubs***

I always get calls this time of year from gardeners wanting to cut back shrubs. Though light pruning and removal of dead wood are fine this time of year, severe pruning should be left until spring. One thing I like to do is cut my roses back to about 3 ft tall. They will get a much heavier pruning in the spring, but for now cutting them back just a bit will help prevent a snow load from breaking the plants down. Keep in mind that even light pruning of spring-blooming shrubs such as lilac and forsythia will reduce flowers for next year. We normally recommend that spring-bloomers be pruned after flowering. Shrubs differ in how severely they can be cut back. Junipers do not break bud from within the plant and therefore should be trimmed lightly if you wish to keep the full shape. Overgrown junipers should be removed. On the other hand, there are certain shrubs that can be pruned back severely during the spring. Rejuvenation is the most severe type of pruning and may be used on multi-stem shrubs that have become too large with too many old branches to justify saving the younger canes. All stems are cut back to 3- to 5-inch stubs. This works well for spirea, forsythia, pyracantha, ninebark, Russian almond, mock orange, shrub roses, and flowering quince. Just remember that spring is the correct time to do this, not now.

### ***Winterizing Strawberry Plants***

Winter can be a difficult time for strawberries in Kansas. Plants need time to become adjusted to cold weather and will gradually become more cold resistant as fall progresses. Strawberry plants are able to withstand colder temperatures in the middle of the winter better than in the fall before they have gone through much cold weather. For example, if temperatures suddenly plummet below 20 degrees F before the plants harden to the cold, they can be severely damaged. A drop to 15 degrees F may kill them. Hardened plants can withstand such temperatures with ease. This lack of hardening off may be a concern this year because of the unseasonably warm fall. If a sudden drop in temperature to below 20 degrees F is forecast, it may be wise to mulch the plants as you would for the winter. After the cold snap is over, uncover the plants so they may continue to harden off. Normally, strawberries should be mulched for the winter around Thanksgiving. However, if temperatures stay abnormally warm, give plants another couple of weeks to become cold hardy before mulching. Mulching plants helps protect strawberries not only from low temperatures but also from heaving damage. Heaving damage occurs when the alternate freezing and thawing common in Kansas winters heave plants out of the ground where the roots are exposed and the plants die from lack of water. Wheat straw makes good mulch and is widely available. The straw should be spread over the plants to a depth of 3 inches. Shake the slabs of straw apart so there are no large compressed

chunks. This straw mulch not only helps protect the plants over winter but can also help avoid damage from late spring frosts by delaying blooming a few days in the spring. Mulch should be removed gradually in the spring as plants begin new growth. Remove enough so leaves can be seen. Leaving some mulch in place keeps the berries off the ground and conserves moisture. Also, mulch left in the aisles helps protect pickers from muddy conditions.

### ***Ashes in the Garden***

You may have heard that using wood ashes on your garden can help make the soil more fertile. Though ashes do contain significant amounts of potash, they contain little phosphate and no nitrogen. Most Kansas soils are naturally high in potash and do not need more. Also, wood ashes will raise the pH of our soils, often a drawback in Kansas where soils tend toward high pH anyway. Therefore, wood ashes add little benefit, and may harm, many Kansas soils. In most cases it is best to get rid of them.

### ***Garden Soil Preparation — It's Not Too Late***

Autumn is an excellent time to add organic materials and till garden soils. Winter can still be a good time to take care of this chore as long as the soil isn't frozen. It is far wiser to till now than to wait until spring when cold, wet conditions can limit your ability to work soils easily. Working soil when it is wet destroys soil structure and results in hard clods that are very slow to break down. On the other hand, dry soil may need to be watered so it can be more easily tilled.

Be sure to wait several days after watering to let soil moisture levels moderate. You want the soil moist, not wet or dry, when tilling. There is a limit to how much organic material such as leaves can be added in one application. Normally, a layer 2 inches deep is adequate with 5 to 6 inches being the maximum that can be added at one time. Shredding the material before application encourages faster and more complete decomposition due to increased surface area. Remember, soil preparation is an important key to a successful garden.

Late fall or early winter is a good time to service power equipment such as mowers, tillers and garden tractors. Run the equipment out of gas or treat the existing gas with a stabilizer as untreated gas can deteriorate over time. If using a stabilizer, run the engine long enough for untreated gas in the carburetor bowl to be burned and replaced. This is also a good time to replace the oil (and filter, if present) since the engine is warm. Check and replace the spark plug if necessary. Some gardeners will also apply a light, sprayable oil into the cylinder through the spark plug hole. Check and clean air filters and replace if necessary.

Many mowers and tillers will have a foam prefilter that can become filthy with use. If allowed to become too dirty, engines will run poorly or may not run at all. Sharpen blades, clean tines, tighten screws, replace broken parts and do all the other things needed to keep equipment in good shape. Though such maintenance takes some time and effort, it pays for itself by reducing frustration and lost time due to poorly performing equipment during a hectic spring.

### ***Compost Pile Maintenance***

Compost piles should be turned about once per month even during the winter months. This will insure the composting process continues and that all materials are equally composted. A compost pile is “turned” when uncomposted material is moved from the sides and tops of the pile to the center where it provides “fuel” for the microorganisms that break it down. Water may need to be added if the material you move to the center is dry. Check the moisture content by squeezing a fistful in your hand. It should feel moist but no excess water should drip out.

Compress the material as best you can as excess air can slow the composting process.

### ***Poor Drainage in Garden Areas***

Winter is often a good time to fix areas in the garden where water sits and does not drain properly. Such areas often harm plant roots due to poor oxygen levels in the soil. Consider adding good topsoil so water doesn't sit. Be sure to till or spade the area to mix the new topsoil and the underlying existing soil. Plant roots do not like to cross distinct barriers caused by one type of soil sitting on top of another. Internal drainage can be improved by adding organic matter such as peat moss, rotted hay, cotton burrs, rotted silage or compost. Do this by adding a 2- to 4- inch layer of organic matter to the surface of the soil and incorporating as deeply as possible.

### ***Dormant Seeding of Turfgrass***

The best time to seed cool-season grasses such as tall fescue and Kentucky bluegrass is September because the turf has more time to mature before spring crabgrass germination and the heat stress of summer. Dormant seeding of turfgrass is sometimes used to help fill in bare spots of lawns that weren't overseeded in the fall. Dormant overseeding is done during the winter (December – February) when it is much too cold for germination. As with any seeding program, good seed-soil contact is vital. Several methods can be used. One method is to seed when there has been a light snowfall of up to an inch. This is shallow enough that bare spots can still be seen. Spread seed by hand on areas that need thickening up. As the snow melts, it brings the seed into good contact with the soil where it will germinate in the spring. Another method is dependent on the surface of the soil being moist followed by freezing weather. As moist soil freezes and thaws, small pockets are formed on the wet, bare soil that is perfect for catching and holding seed. As the soil dries, the pockets collapse and cover the seed. A third method involves core aerating, verticutting or hand raking and broadcasting seed immediately after. Of course, the soil must be dry enough and unfrozen for this to be practical. With any of the above methods, seed germinates in the spring as early as possible. There will be limitations on what herbicides can be used for weed control. Tupersan (siduron) can be used as a crabgrass preventer on new seedings even before they have come up. Also dithiopyr, found in Hi-Yield Turf and Ornamental Weed and Grass Stopper, can be used on tall fescue, Kentucky bluegrass, and perennial ryegrass two weeks after germination. Dithiopyr is longer lasting and more effective than siduron. Other preemergence herbicides require that the turf be well established before application.

## ***Water Landscape Plants***

It is important that perennial plants go into the winter with moist soil. Even with recent rains, some areas of Kansas have been dry this fall with some portions of the state being under drought conditions for much longer. Watering now is important if soils are dry to help alleviate moisture stress and lessen the likelihood of winter damage. Although all perennial plants benefit from moist soils before winter, it is especially important for newly planted trees and shrubs due to limited root systems. Even trees and shrubs planted within the last 2 to 3 years are more sensitive to drought than a well-established plant. Evergreens are also more at risk because moisture is lost from the foliage. A good, deep watering with moisture reaching at least a foot down into the soil is much better than several light sprinklings that just wet the top portions of the soil. A deep watering will help ensure that the majority of roots have access to water. Roots that actually absorb water are killed when the soil temperature reaches 28 degrees F. Those near the surface do not last long in our Kansas winters. We must rely on roots that are deeper, and provide moisture for them to absorb. Regardless of the watering method used, soil should be wet at least 12 inches deep. Use a metal rod, wooden dowel, electric fence post or something similar to check depth. Dry soil is much harder to push through than wet. Trees or shrubs planted within the last year can be watered inexpensively with a 5-gallon bucket. Drill a small hole (1/8") in the side of the bucket near the bottom. Fill the bucket and let the water dribble out slowly next to the tree. Refill the bucket once, and you have applied 10 gallons. Very large transplanted trees and trees that were transplanted two to three years ago will require more water. A perforated soaker hose is a good way to water a newly established bed or foundation plantings. However, soaker hoses are notorious for non-uniform watering. In other words, you often receive too much water from one part of the hose and not enough from another. Hooking both the beginning and the end of the soaker hose to a Y-adapter helps equalize the pressure and therefore provide a more uniform watering. The specific parts you need are shown in the photo above and include the soaker hose, Y-adapter and female to female connector. It is also helpful if the Y-adapter has shut off valves so the volume of flow can be controlled. Too high a flow rate can allow water to run off rather than soak in. On larger trees, the soaker hose can circle the trunk at a distance within the dripline of the tree but at least ½ the distance to the dripline. The dripline of the tree is outermost reach of the branches. On smaller trees, you may circle the tree several times so that only soil which has tree roots will be watered. If using a soaker hose, note the time watering was started. Check frequently to determine the amount of time it takes for water to reach 12 inches. From then on, you can water "by the clock." Use a kitchen oven timer so you remember to move the hose or shut off the faucet. If you are seeing surface runoff, reduce the flow, or build a berm with at least a 4-foot diameter around the base of the tree to allow the water to percolate down through the soil, instead of spreading out.

The traditional Christmas colors of red and green are brilliantly displayed by the poinsettia. The poinsettia is not just our most popular yuletide plant, but it is also the most popular potted plant in terms of sheer numbers and value every year in this country. Quite a boast for a plant that is, for all intents and purposes, sold on the retail market for just a one month period between Thanksgiving and Christmas. The popularity of this beautiful plant didn't begin in our country, it started in Mexico! The poinsettia, which is native to Mexico, was cultivated by the Aztec Indians long before the Spanish conquests. The Aztecs prized this beautiful plant as a symbol of purity. They used the colorful bracts in making crimson dye. And, they made a fever medicine from the poinsettia's milk sap. When the Aztec empire fell to the conquistadors, Christmas celebrations replaced the Indian rituals. There's a legend surrounding the Mexican's use of poinsettias at Christmastime. According to legend, on Christmas Eve long ago, a little Mexican girl was very sad. She wanted more than anything to give a fine gift to the Christ child at the church service that evening. But she was very poor and had no money to buy a present. As she walked toward the church with her cousin, he tried to console her. He told her that even the most humble gift would be acceptable. So the little girl gathered a bouquet of weeds from the roadside and entered the church. As she approached the altar, her spirits lifted. She forgot about the humbleness of her gift and placed the bouquet at the Christ child's feet. Then a miracle occurred! Her insignificant weeds burst in brilliant bloom. They were called "The flowers of the holy night," and each year, at Christmastime, they bloom again. We call these plants poinsettias. The name given this beautiful plant honors Joel R. Poinsett of Charleston, South Carolina. Poinsett, who served as U.S. Minister to Mexico in the 1830's, sent some of the exotic plants to his family. And, poinsettias have carried his name ever since. Poinsettias were first cultivated in California in 1906. Albert Ecke began producing better poinsettias. And today, new varieties are continually being developed. In addition to the original red, ...pink, white, and marbled varieties are now available. You can also buy poinsettias in different shapes such as standard branched, tree form, hanging baskets, and centerpieces. Of course, how long potted poinsettias will retain their color will depend largely on how well you care for them. Temperatures of 60 to 75 degrees Fahrenheit during the day and 60 degree nights are preferred. Cold drafts and excessive heat should be avoided. Indoors, poinsettias should receive bright, but not direct sun. And, they should be watered regularly, but not excessively. Of course, if you have questions about caring for your poinsettias or other houseplants during the long dreary winter, you can call the Extension office at 321-9660 for answers to your questions.

## ***Ice Melters***

There are five main materials that are used as chemical deicers: calcium chloride, sodium chloride (table salt), potassium chloride, urea, and calcium magnesium acetate.

**Calcium chloride** is the traditional ice-melting product. Though it will melt ice to about -25 degrees F, it will form slippery, slimy surfaces on concrete and other hard surfaces. Plants are not likely to be harmed unless excessive amounts are used.

**Rock salt** is sodium chloride and is the least expensive material available. It is effective to approximately 12 degrees F, but can damage soils, plants and metals. Potassium chloride can also cause serious plant injury when washed or splashed on foliage. Both calcium chloride and potassium chloride can damage roots of plants.

**Urea** (carbonyl diamide) is a fertilizer that is sometimes used to melt ice. Though it is only about 10% as corrosive as sodium chloride, it can contaminate ground and surface water with nitrates. Urea is effective to about 21 degrees F.

**Calcium magnesium acetate** (CMA), a newer product, is made from dolomitic limestone and acetic acid (the principal compound of vinegar).

CMA works differently than the other materials in that it does not form a brine like salt but rather helps prevent snow particles from sticking to each other or the road surface. It has little effect on plant growth or concrete surfaces. Performance decreases below 20 degrees F.

Limited use of any of these products should cause little injury. Problems accumulate when they are used excessively and there is not adequate rainfall to wash or leach the material from the area. Since limited use is recommended it is best to remove the ice and snow by hand when possible. When these products are applied, practice moderation. Resist the temptation to over apply just to make sure the ice and snow melts. Keep in

mind this can damage concrete surfaces as well as the plants and grass growing along the walks and driveways. These problems are normally latent and do not show up until spring or summer.

### ***Mouse Damage to Fruit Trees/Plants***

Be on the lookout for mouse tunnels around your fruit plants. Trunks and roots of apple trees are among the favorite meals for mice. There is probably no damage yet. But if we receive enough snow to cover winter food supplies, mice will begin to feed on the lower area of tree trunks and roots. This feeding may be severe enough to girdle tree trunks and kill the trees. Mice like to hide in dead grass and weeds around the trees, especially close to the trunks. They will often tunnel near the soil surface and feed on the tree bark. You can check for mice by placing baited mouse traps in PVC or other pipe near your trees. Insert the traps far enough so that pets are unable to reach the trap. Check the stations about once a week and reset traps if necessary. Mouse damage can be severe enough to kill trees that are old enough to bear fruit. Clear dead grass and weeds away from your trees and monitor for mice if you are using mulch around your fruit plants.

### **CHOOSING AND CARING FOR YOUR CHRISTMAS TREES**

If selecting a cut tree, watch for these signs that the tree is too far gone.

- Needles are a dull, grayish-green color
- Needles fail to ooze pitch when broken apart and squeezed
- Needles feel stiff and brittle
- Needles pull easily off tree

Once you have your tree home, recut the trunk about one inch above the original cut. This will open up clogged, water-conducting tissues. Immediately place the trunk in warm water. Locate the tree in as cool a spot as possible. Avoid areas near fireplaces, wood-burning stoves, heat ducts and television sets as the heat will result in excess water loss. Make sure the reservoir stays filled. If the reservoir loses enough water that the bottom of the trunk is exposed, the trunk will need to be recut. Adding aspirins, copper pennies, soda pop, sugar and bleach to the water reservoir have not been shown to prolong the life of a tree. If you choose a living Christmas tree, be sure to dig the planting hole before the ground freezes. Mulch the hole and backfill soil to keep them from freezing. Live trees should not be kept inside for more than three days. Longer periods may cause them to lose dormancy resulting in severe injury when planted outside. You may wish to tag the tree at the nursery and then pick it up a couple days before Christmas. After Christmas, move the tree to an unheated garage for several days to acclimatize it to outside temperatures. After planting, water well and leave some mulch in place to prevent the soil water from freezing and becoming unavailable for plant uptake.

### ***Care of Christmas and Thanksgiving Cacti***

Christmas Cactus (*Schlumbergera bridgesii*) and Thanksgiving Cactus (*Schlumbergera truncata*) are epiphytes native to the jungles of South America. Epiphytic plants grow on other plants and use them for support but not for nutrients. Though these cacti are different species, they will hybridize and produce varying stem shapes. Christmas cactus normally has smooth stem segments, and Thanksgiving Cactus has hook-like appendages on each segment. Both of these cacti prefer bright indirect light. Too much sun can result in the leaves turning yellow. Common household temperatures are fine. Soil should be kept constantly moist but not waterlogged. Give them a light fertilization every other week. Blooming will normally cease in late winter to early spring, but continue to keep them moist and fertilized until fall. During the fall, stop fertilizing, and give the plants only enough water so the stems do not shrivel in order to encourage flower bud formation. Though these plants seem to flower best if kept a little pot bound, flowers will diminish if they are too crowded. If you haven't repotted in several years, or if you notice a decrease in flowering from the previous year, move the plant to a larger pot in the spring. If possible, move the plants outside for the summer. Choose a shady spot because these plants will not tolerate full sun. Leave the plants outside until frost threatens. Normally, the plants will have received enough cool nights in the 50- to 55-degree range that flower buds will have formed. However, if they haven't, subjecting the plants to nights greater than 12 hours long and temperatures between 59 and 69 degrees can also generate flowers. Twenty-five consecutive long nights is enough for flower initiation. Place the plants in an unused room or cover them with a dark cloth or cardboard box to insure that they receive uninterrupted darkness. After the flower buds have formed, it takes an additional nine to 10 weeks for flowers to complete development.

### ***Storing Potatoes in Cold Temperatures***

Potatoes stored below 40 degrees F will not sprout and will remain firm for long periods. However, such storage 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.

### ***Firewood***

Not all firewood is created equal. Some species of trees are able to produce much more heat per cord of wood. A cord is the amount of wood in a well-stacked woodpile measuring 4 feet wide by 8 feet long by 4 feet

high. Following are heat values (in million BTUs) per cord for various species of tree. The higher the value, the better the wood.

Ash, Green	22.8	
Cottonwood	15.9	
Elm, American	19.8	Difficult to split
Elm, Siberian	20.9	Difficult to split
Hackberry	21.0	
Honeylocust	25.6	
Locust, Black	28.3	Difficult to split
Maple, Sugar	24.0	
Maple, Silver	18.9	
Mulberry	25.3	
Oak, Red	24.0	
Oak, Bur	24.9	
Oak, Post	25.6	
Osage Orange (Hedge)	32.6	Sparks, do not use in open fireplace
Sycamore	19.5	Difficult to split
Walnut, Black	21.8	

The Kansas Forest Service has a publication titled "Managing Your Woodland for Firewood" that is quite helpful. Remember to obtain firewood locally. Emerald Ash Borer is now in Kansas because of transported wood.

## **WHAT TO DO WITH THE CHRISTMAS TREE AFTER CHRISTMAS**

After the holidays, many municipalities allow old Christmas trees to be placed curbside. Trees are then collected and ground up for mulch or burned. If you miss the designated date, or your trash collector doesn't accept trees, there are several options to prolong the useful life of the tree.

An old Christmas tree can be used to benefit birds, fish, and the landscape by placing it in a corner of your deck, and spreading some birdseed nearby, or tying it to a deciduous tree or post near a bird feeder. The birds benefit from having escape cover nearby when hawks or cats threaten, and the dense boughs reduce the wind chill on a cold night. Sinking your Christmas tree in a pond is an easy way to improve fish habitat and fishing. The tree serves as little coral reef, in that the branches provide substrate for water plants to grow, and cover for minnows and other forms of small aquatic life. Larger fish are drawn by the shade and the presence of prey. How do you sink a tree? Tie the base to a cinder block with a short, stout rope, and toss it in. Just be sure to get permission from the pond owner first! Using the little tree around the landscape requires clipping off all of the branches. Use the boughs to add extra insulation around semi-hardy perennials or to trees and shrubs that were recently planted. The leftover trunk may be used as a garden stake next spring. Or cut and let it dry for a few weeks, and you will have some easy lighting firewood. Just beware that most conifer species tend to spark and pop more than hardwoods, as resin pockets in the wood make tiny explosions. This can delight the youngsters, but for safety's sake, keep an eye on the fire when burning Christmas tree logs!

### ***Care of Gift Fruit Baskets***

A holiday tradition is to give gifts of fruits and nuts (along with other products). Usually these are placed in an attractive basket, wrapped with cellophane covering, and brought (or shipped) to your house. It is important that the fruit contained inside is kept in cool conditions to maintain its quality for as long as possible. Thus, it is wise to disassemble the fruit basket as soon as you receive it and place the fruit in refrigerated storage. If all the products in the basket are tree fruits (such as apples, pears, oranges or grapefruit), you can place the entire basket in a cool place- around 40 degrees F for best results. If the basket contains any bananas or other tropical fruits (with the exception of citrus), remove those fruits and store them separately. About 3-4 weeks is about as long as you can expect to store these fruits without some shriveling and loss of crispness.

### ***Storing Pecans and Other Nuts***

During the holiday season, pecans and other nuts are commonly given as gifts or purchased for holiday cooking. Nuts can quickly lose quality if not stored properly. Excessive water loss can lead to shriveled nutmeats, and the fats and oils in nuts can quickly spoil – developing an off-flavor or rancid taste. Store shelled (or unshelled nuts) in the refrigerator, or preferably the freezer. Nuts quickly absorb flavors from other stored products, so store them in a tightly sealed container so they won't lose water or absorb flavors from other fruits or vegetables. A solid plastic container with a tightly fitting lid is preferred. You can use a heavy grade resealable plastic bag as well. If nutmeats are tightly sealed, they can be stored in a freezer for up to one year, but using them within six months is preferred.