Best of Oklahoma Gardening Information Sheet (#3726)

OETA air date: December 25 and 26, 2010
OETA airtime: Saturday 11:00 a.m., Sunday 3:30 p.m.

Bixby Vegetable Field Day – In this special episode we attend the Vegetable Field Day at the Oklahoma Vegetable Research Station in Bixby. The Bixby Research Station encompasses 110 acres situated on the north side of the Arkansas River in Bixby. The station is home to a large assortment of research programs with potato, sweet potato, peppers, tomatoes, asparagus and other vegetable variety and breeding studies. Also, small fruits, herbicide trials and cultural techniques are under study. Forty acres of the station are employed in agronomic research in soybean breeding, variety trials and double cropping management studies. The research station holds a public field day every two years in June.

Herb Extractions – Dr. Niels Maness of the OSU Horticulture and Landscape Architecture Department joins us to talk about his research with specialty extraction crops. Much of Niels’ work focuses on extraction techniques used to stabilize dried herbs or use as flavoring. Niels has developed a dried cilantro extract that can be used as a culinary herb. He is evaluating several varieties of cilantro for spring harvests and has demonstrated cilantro can be a viable crop for Oklahoma. Niels is also running a basil variety trial, again for use as an extraction crop. Basils vary dramatically in their chemical content, as can easily be observed by crushing a leaf and smelling the aroma or tasting the flavor. Through his research, Niels aims to identify basils with high yields and valuable chemical components that are extractable. The extraction is exciting in that it introduces new crops to Oklahoma growers as well as new production methods. With advancements in extraction processing, the work also promises expansion of Oklahoma’s commercial production markets. The extracted, dried products help to reduce production waste, extend shelf life and standardize flavor for commercial products.

Tomato Diseases – Dr. John Damicone of the Entomology and Plant Pathology Department introduces us to a few diseases that have cropped up in the tomato plantings. Many growers this year experienced a leaf curl in their tomato plants. Tomatoes require constant moisture rather than fluctuating periods of wet and dry soil. Heavy rains followed by high heat early this season caused the leaves on many tomato plants to curl. This was a physical response to weather; however, the symptoms are very similar to those of the Beet Curly Top Virus. Plants infected with the virus will also appear stunted compared to healthy plants and will cease production. Beet Curly Top Virus is transmitted by migrating insects. Other tomato diseases discussed in this segment include blossom end rot, cat facing and bacterial leaf spot.

Sweet Corn Replicated Variety Trials – Dr. Brian Kahn is a vegetable research specialist in the Horticulture Department who works with a variety of traditional field crops, including sweet corn. In this year’s variety trials he faced the challenge of isolating varieties with differing genetics. Corn pollination is unique in that the pollen fertilizing an ear of corn has a direct and immediate effect on the resulting kernel. For example, sweet corn pollinated by a field corn will produce starchy ears. The plants under trial belong to two different genetic groups, each group having a common sweetness gene. The two groups must be isolated to minimize pollen transfer. Ideally, corn varieties are separated by at least 250 feet in all directions. In home gardens, you can also isolate corn varieties temporally, planting one variety early and another late.
Rainwater Sand Cistern Part 4: Carrying Water to the Cistern – As we work the soil around our rainwater sand cistern, we need to move water from the roof of our Cottage to the cistern. We start by collecting rainwater runoff in gutters that drain toward the east end of the building. The gutter in the front is on a porch, and we thought it would be more attractive to move the water to ground level using a rain chain, rather than a gutter downspout as we have on the south side of the building. Rain chains can be functional, as used here, but are also very decorative and they come in a wide range of styles to match any home. On the south corner of the Cottage we have a traditional gutter downspout.

Once the water reaches ground level, it can be moved across the surface of the soil or below ground to the cistern. Above ground, a small dry creek bed can be used to carry rainwater and add a decorative feature. A solid drain pipe can be used and buried below ground to hide it from view. With both techniques, a gentle slope is necessary to move water downhill toward the cistern.

Dry creek beds have a number of applications in the landscape. They are used to move water away from an area where it collects and pools, or to slow the flow of water that runs down a slope, reducing erosion problems. Dry creek beds are also very attractive in the landscape and are often built purely for aesthetic purposes.

Start by determining the path the dry creek will follow. We used hoses to lay out lines in the landscape, and in fact, we used one when creating the shape of our rainwater sand cistern. True creeks twist and curve; a dry creek bed will look more natural if it meanders rather than running straight. The width of the bed is very flexible, but one rule of thumb may help with the design—creeks tend to be wider than they are deep. A 2:1 ratio is about right, with our dry creek being two times wider than it is deep. Our dry creek does not need to be very deep, so it can also be fairly narrow. Another consideration however is the aesthetic appearance. A skinny creek bed might look forced or unnatural in the landscape. Size the dry creek according to its surroundings as well as the volume of water it may carry.

Now we can dig out a shallow trench for our creek bed. The lowest point of our dry creek must be at the end where it empties into the cistern. This will limit the depth we can work. Also, mound the soil excavated from the bottom of the creek up along the sides as you work. This will reduce the amount of digging necessary to make the creek bed deeper than its surroundings because we are raising the sides at the same time we are lowering the base. Tamp down the soil as you work.

The steps for constructing a dry creek are the same regardless of your intended use, whether for drainage or erosion control. However, for the purposes of moving water into our cistern, we will use plastic mulch rather than a fabric weed mat. The plastic will reduce the amount of water lost as the rain moves from roof to cistern. A fabric base would allow some of the water to percolate into the soil before it reaches our cistern. We used plastic liner left over from the installation of the cistern. We have cut it large enough to cover the bottom of the creek bed and also cover the mounds built up along the sides of the bed. Use fabric pins or landscape staples to hold the plastic in place.

Now it is time to add the stone that will be the decorative component of our dry creek bed. Use rocks of various sizes and shapes, but stick to a single type of rock so that the color is consistent. You can use rounded river rock or flatter stones, depending on your personal design style. Place the smaller river rock in the bottom of the channel. Water will flow over this base. Larger river rock can be used on the sides of the
bed, and pea gravel can be spread to fill empty spaces. Use larger boulders at the curves and bends of the dry creek and at the head of the creek. Also, set a few boulders at random places along the length of the creek bed. The edges of the dry creek bed can be softened with plantings.

Our cistern will now capture the rain falling on our roof. We will be back later to install the pump that will move water into our irrigation system. We have had a number of people help us with this project. Glenn Brown and Sharla Lovern from OSU’s Department of Biosystems and Agricultural Engineering helped with designing and installing the cistern; Michael Holmes of the Department of Horticulture and Landscape Architecture designed the plantings and aided in site planning; Laura Payne, Keith Reed, Kenton Peters here at the Botanic Gardens; volunteers Mike Adams and Steve Miller pitched in; and Kevin Gragg, our videographer and director, moved more sand and soil than he cares to remember. Thank you to everyone who helped make this project possible.

**Planting the Rainwater Sand Cistern** – We are finally ready to plant our rainwater sand cistern. A wide variety of native and non-native can be planted in the rainwater sand cistern. Plant species suitable for planting in a rain garden are also suitable for the cistern as both systems have a similar growing environment. Plants must be able to tolerate both temporary pooling of rainwater as well as dry periods between rainfall events. Using a variety of plants will make your rain garden more effective and less susceptible to disease as well as more attractive. Also, select plants that compliment the rest of the landscape. It is best to use plants with a developed root structure instead of starting plants by seed as seeds will have a hard time establishing in the conditions of a rain garden.

When selecting plants for our cistern, we had a few additional criteria. Of course, we selected plants that could tolerate the conditions, but we also designed with low maintenance needs in mind. For this reason, the cistern is planted with perennials rather than annuals that would require yearly replacement. We also wanted to use plants that were very familiar to most gardeners. Our final plant list includes monarda or beebalm; miscanthus and Karl Forester feather reed grasses; iris and daylilies; cardinal flower and echinacea. This represents just a handful of the many plant species suitable for planting in a rain garden or sand cistern.

Be careful when digging in your cistern, you do not want to tear the weed fabric separating the soil and sand layers. We also want to avoid the sand columns when planting. The sand columns should remain free of vegetation. This may require some thinning in the spring time as our plants become established and start to expand over time.

Once the bed is planted you want to mulch to help with weed management and to protect the soil from wind erosion. We want to limit the amount of organic matter that buildup in this system to avoid clogging the pore spaces in the sand. Because organic mulches such as wood chips decompose over time, we have chosen an inorganic mulch, one that will not break down over time. We are using 3/8 inch pea gravel. The water will also be able to move freely through the stone mulch. Spread a three to four inch layer as you would in any other garden.

The OSU Low Impact development website has a number of resources for rainwater harvesting and rain gardens: [http://lid.okstate.edu/osu-extension-fact-sheets](http://lid.okstate.edu/osu-extension-fact-sheets). Also, Texas Agrilife Extension has a list of plants suitable for rain gardens in Texas, many of which also perform well in Oklahoma: [http://rainwaterharvesting.tamu.edu/Rain%20Garden%20Plant%20List%2011-02-09.pdf](http://rainwaterharvesting.tamu.edu/Rain%20Garden%20Plant%20List%2011-02-09.pdf). Later this season we will install irrigation around our cistern and start to pump out the water we collect. If you are interested in learning more about what you can do to manage and capture rainwater in the landscape, be sure to join us for our annual Summer GardenFest this year on Saturday, June 12. Our featured speaker, Kevin Gustafson of the Oklahoma Conservation Commission, will speak about Home Gardening Techniques for Wise Water
**Rain Gardening** – In this segment we visit with professors Helen Kraus and Anne Spafford of North Carolina State University to learn about rain gardens and storm water management applications for the home landscape. Rain gardens help scrub pollution from rainwater that moves through the landscape, preventing those pollutants from entering public waterways and municipal supplies. Rainwater runoff contains metals from roof shingles, oil, grease and other fluids from automobiles that wash off driveways and roads. Phosphorous from detergents, fertilizers and pet wastes are also removed through rain gardens, as is nitrogen from similar sources. Interestingly, one of the largest sources of excess nitrogen in our water supplies comes from grass clippings and mulch washed out of landscapes.

Rain gardens should be placed in a location that maximizes the amount of rainwater intercepted as it moves through the landscape. General guidelines involve placing the rain garden no less than 10 feet from the foundation of a building, at least 25 feet from a septic system, and at least 50 feet from a well. The rain garden should not be placed at the bottom of a slope, but rather at the midpoint of the slope. As rain gardens can be beautiful additions to the landscape, you will also want to consider views of the garden when placing. The rain garden should be large enough to capture at least the first inch of rainfall, which typically contains the majority of pollutants. More information on sizing and locating the rain garden can be found at OSU’s Low Impact development website: [http://lid.okstate.edu/sustainable-homes-gardens-series](http://lid.okstate.edu/sustainable-homes-gardens-series).

A rain garden is composed of six basic components:
1. A depressed area set 3 to 6 inches lower than its surroundings
2. An amended soil filter bed
3. Mulch
4. A berm on the lower (downhill) edge
5. Plants
6. Rock or other material to slow water flow

To install a rain garden begin by selecting the location and laying out a garden hose to determine shape. The shape can be adjusted to fit the landscape, linear in a formal garden, curved in a more natural setting. Dig an appropriately sized hole to a depth of 1 to 4 feet (call OKIE before you dig!). Stockpile soil for later use. Berm up the lower (downhill) side of the garden using soil removed from the hole. The downhill edge should be raised to a height level with the uphill edge. Create an overflow outlet that allows water from large storm events to exit the garden in a non-erosive manner. Stone weirs, level spreaders, and large diameter pipe can be used as overflow outlets.

The bottom of gardens should be tilled deeply and leveled to improve infiltration. Amend the soil in the hole mixing topsoil and 3 to 4 inches of compost into every foot of native soil. Compost should be stable (well aged) and low in nitrogen and phosphorus. Composted pine bark is well suited for this purpose.

Plant and mulch the garden with 2 to 4 inches of shredded hardwood bark (avoid pine bark - it floats). Plants for a rain garden must tolerate both flood and drought conditions. It is also important to consider aesthetics when selecting plants, rain gardens are gardens after all. Plants with a dense base will trap and hold water better. Visit [http://lid.okstate.edu](http://lid.okstate.edu) for a list of suggested plants.

**Rain Gardens with Kevin Gustavson** – In this segment we visit the home of our 2010 GardenFest speaker Kevin Gustavson. Kevin currently represents the Oklahoma Blue Thumb Program, part of the Oklahoma Conservation Commission (OCC) Water Quality Division. The Blue Thumb Program utilizes trained volunteers for stream monitoring and to conduct outreach education on water quality and conservation issues. Through his job, Kevin promotes the benefits of keeping rainwater onsite in rain gardens, and using native plants to xeriscape in any landscape. Kevin is also a gardener who is converting his own grass lawn
Harvesting the Rain: Installing a Rainwater Sand Cistern – In this segment Kim introduces the “Green” cottage, a site used to demonstrate a number of alternative energy and water conservation practices. One of the goals of the Green Cottage is to collect rainwater that falls on the roof and re-use it for irrigation.

There are a variety of systems to capture rainwater and each has its advantages and disadvantages. We are installing a rainwater sand cistern. This system stores rainwater below ground in the air spaces in sand. It is a closed system so the water is not exposed above ground. This eliminates problems with mosquitoes and also keeps the water cooler. This is a benefit for irrigation purposes and it also helps prevent algae growth in the system.

We more readily associate the word cistern with the large metal or plastic barrels used to store water, but our sand cistern will function much the same way. Some people find above ground cisterns unsightly. This is another advantage of the sand cistern. Once it is installed it disappears into the landscape. In fact, we will eventually plant it like a rain garden.

Another difference between a traditional above ground cistern and our sand cistern is how we move the water. Above ground systems can use gravity to move water, while below ground systems require a pump to pull water to the surface. We will look more at the pump when we install irrigation.

The first step in installing a rainwater sand cistern is to excavate the hole. Our hole measures 10 feet by 20 feet by 4 ½ feet deep and was excavated using a backhoe. The size of the hole depends upon how much rain you are trying to capture. This can be calculated based upon the area of your roof, your irrigation needs and average rainfall for your area. To give an idea of our potential capture off the roof, 600 gallons of rainwater can be collected off of 1,000 square feet of roof. Our roof is approximately 432 square feet and our cistern is sized to collect 1,000 gallons or 4 inches of rain.

The hole is slightly deeper at one end so that water will drain to a low spot. This is where we will take water into our pump. Once the hole is dug line it with plastic sheeting. A 6 mil construction grade plastic is sufficient. If more than one sheet is needed, multiple sheets can be connected using vapor barrier tape. Our cistern uses a pond liner, which has been cut to size. The liner will keep water from draining out of the cistern.

The next step is to coil drainage pipe in the bottom of the hole. The drainage pipe serves two functions. It serves as an empty space to store water but more importantly, creates a water reservoir from which water can be pumped more easily. The drainage pipe should be covered with a sediment barrier to prevent sand from filling the pipe. Our hole has 100 feet of pipe coiled back and forth to create a single layer. Connect
both ends of the drainage pipe to a PVC “T” joint. This “T” joint will serve as our well and should be placed in the lowest area along the bottom of the hole.

To the third opening on the PVC “T” attach and seal a five foot section of PVC that is either perforated or has holes drilled along the shaft. The openings will allow additional water to seep into the pipe. This pipe will be set in a vertical position and serve as a housing for our water pump intake hose. Stabilize the vertical pipe using poles and string so that it remains upright while filling the hole.

We are now ready to backfill our hole with sand. The sand will act both as a storage area for the water, and will also filter the water as it moves through the system. Water pack the sand after each vertical foot is added. Continue filling until you reach a depth that is 18 to 26 inches below the surrounding soil surface.

The rainwater sand cistern will store water in a sand layer set below a surface layer of soil. The soil layer will be used to grow plants. The exact depth of the sand layer will depend upon the hole depth. The goal is to lay a 12 to 18 inch layer of soil above the sand for planting. The final surface of the soil layer should be depressed 6 to 8 inches below the surrounding surface grade. To account for enough space to lay a layer of soil and still have the soil surface 6 to 8 inches below the surrounding soil, sand should be filled to a point that is 18 to 26 inches below grade. The purpose of having the cistern depressed is to create an area where water can sit and pool as it percolates into the sand layer below.

Another way to achieve the depression is to berm soil up around the outside edge of the cistern. If your cistern is in an area where exposed soil might wash into the depression, a berm can help keep this contaminated water out of the system.

An overflow drain is needed to carry excess water away from the soil layer. Plants cannot tolerate sitting in water-saturated soil for an extended period of time. If your cistern is full, excess water needs to be drained out of the depressed area. This can be achieved by laying a drain pipe at the surface of the sand layer to carry water to a lower point outside the cistern. Another option is to dig a shallow swale to the depth of the sand layer that slopes away from the cistern.

Once an overflow drain has been established, we are ready to lay our soil layer. It is best to segregate the soil layer from the sand layer to prevent soil sediments from filling the pore spaces in the sand. Any non-woven weed fabric can be used to separate the two layers. It is important to use a non-woven material as it allows water to percolate easily into the sand below. To hasten percolation, maintain several areas free of soil where sand columns extend from the surface to the sand layer below. We achieve this by cutting the bottoms out of large plastic planting containers and setting them throughout the cistern. The containers are filled with sand and the soil is filled around the containers. Continue filling the hole with soil until it reaches a depth that is 6 to 8 inches below the surrounding soil surface.

We will continue to work on this project in future episodes as we berm around the cistern, plant the cistern, and install dry creek beds to carry water from our gutters to the cistern.

**Forcing Bulbs for the Holidays** – We have been busy planting bulbs in the gardens, but we do not have to wait until spring to enjoy these blossoms. Many spring-flowering bulbs can be forced indoors for a colorful winter display. What better way to brighten up a winter day than with fresh flowers.

"Forcing" is the term used to describe the process that stimulates bulbs to bloom out of season. The easiest bulbs to force are Paperwhite Narcissus because they don't require chilling. Other commonly forced bulbs include amaryllis, muscari and hyacinths. More challenging bulbs for forcing include colchicum and miniature iris. When selecting bulbs for forcing look for varieties that are specifically recommended for this
Most bulbs require a chilling period or period of cold temperatures before they will bloom, but bulbs sold specifically for indoor forcing are pre-chilled, removing this step for the gardener.

Paperwhites are quick and easy to start and will bloom within four to six weeks. Start by selecting a container without any drainage holes. I like to use a clear glass vase so I can see the roots of the bulbs growing, but many different types of containers can be used, as long as it is deep enough to hold about 3 inches of media.

When forcing bulbs, it is not necessary to use soil as the medium, though you may. I find it easier to use washed pea gravel or glass pebbles that can be purchased at craft stores. The stones or gravel will hold our bulbs in place as they grow. Fill your container with about 2 inches of growing medium. Then, place the paperwhite or other bulbs on top of the pebbles. For a nice display, set 7 or more bulbs close together so that they almost touch. A large bunch of bulbs will be more dramatic. Set the bulbs so they are perfectly upright. Wiggle the bulbs down into the pebbles a little bit and then fill in around the bulbs with more pebbles. We do not want to completely bury the bulbs, instead, leave 1/2 to 1/3 of the bulb exposed.

Once you have the bulbs in place, add just enough water to the container to reach the base of the bulbs, but not touch the bulbs. Do not let the bulbs sit in water or they may rot. One of the reasons I like to use a glass container is that it is easy to see the level of the water. If you are using a solid container, just dig a small hole next to a bulb so you can see the water depth.

To start the rooting process, place your container in a cool room that gets low light or no light, such as a windowless room. We will keep our container at low light levels until the roots begin to grow well and the shoots start showing - usually about 1-2 weeks. Keep an eye on the water level and refill as necessary to keep the level just below the bottom of the bulbs.

Once you have good root growth, move your bulbs into a warmer bright, sunny window and watch them grow! Once the bulbs begin to flower, move them out of direct sun so your blooms will last longer. Your home will be filled with beautiful flowers and the refreshing aroma of spring in the middle of winter. Plant batch after batch to keep flowers blooming all winter long.

Paperwhite containers make beautiful centerpieces for the table during the holidays, and are also great to give as holiday bouquets. Or force paperwhites with your children to create unique gifts for their teachers or grandparents.

**Forcing Amaryllis** – I love giving amaryllis as a holiday gift because the flowers are so striking and provide quite a pick-me-up during the winter months. The amaryllis we commonly use for forcing are actually a misnamed plant belonging to the genus *Hippeastrum*. True amaryllis refers to *Amaryllis belladonna*, better known as Naked Ladies or Surprise Lilies.

Dutch breeders have spent centuries hybridizing *Hippeastrum* in developing the flower we know and love. Today's cultivars have stalks ranging from about 12 to 24 inches with each stalk producing 4 to 6 flowers. Typically, a bulb will produce two stalks in a blooming season and bloom for seven to ten weeks. With care, these bulbs will bloom every year for many years.

Like the Paperwhites we potted last week, *Hippeastrum* are forced to flower out of season. Most *Hippeastrum* will go dormant naturally and re-bloom sometime during winter. However, many people prefer to force their plants into bloom for the holiday season. This time of year garden centers sell “prepared” or “pre-chilled” bulbs ready to pot up and have in time for the holidays. But you will not see them labeled as *Hippeastrum*, for one reason or another the name amaryllis has stuck with this group of plants.
Select a large plump bulb that still has some roots at the base. Plant this into a pot that fits rather snug, with just an inch of space around the edge. The bulb needs to feel crowded in order to bloom. Partially fill the pot with potting mix and place the bulb so that top third of it will be exposed when you fill in potting soil around the sides of the pot. We want at least 2 to 3 inches of soil beneath the base of the bulb.

It is a good idea to also place a bamboo stake in alongside the bulb as you fill the container with soil. Sometimes the flowers become top-heavy and fall over. Placing the stake now will help you avoid damaging the roots or bulb later.

Water the bulb in lightly so the soil mix is damp and place the pot in a warm location with plenty of light. Water sparingly until green growth appears, then water regularly keeping the soil moist, but not wet. A good way to water small containers like this is to place it in the kitchen sink and run cool water slowly until it pools slightly in the pot. Then allow all the extra water to drain out the drainage holes. This will avoid problems associated with leaving a pot in a water-filled saucer.

Another fun way to grow *Hippeastrum* is in a clear glass vase. Place a three inch base of pebbles, stone or shells in the bottom of the base and set the bulb on top of this. Add more pebbles or stone around the bulb for stability. Then add water until it is just below, but not touching the bulb. Keep the water topped-off at this level. Using a clear vase is important so you can see the water depth. Place your vase in a warm, sunny location.

A thick flower stalk will shoot up within a few weeks of planting. Flat leaves will fold open as the flower stalk matures. As the stalk emerges, it is a good idea to turn the pot every few day. This provides the flower stalk with uniform light exposure on all sides and helps it to grow straight. Once the flowers open, move the container away from direct light and other sources of heat. *Hippeastrum* will bloom longer if kept in a cool location.

The massive bloom requires a lot of energy. Feed amaryllis with either a slow-release fertilizer or a liquid fertilizer, 2 to 4 times per month.

As individual flowers fade, carefully cut these off, leaving the other blossoms in place. Once all flowers on a stalk fade, you can cut back the entire stalk to the base.

You can keep your *Hippeastrum* and have it re-bloom again next year. Once all of the flowers have faded, carefully cut off the flower stalk, but let the foliage continue to grow as long as it can. Keep it in bright light, indoors or out. Continue moderate watering and feeding and your *Hippeastrum* will store away energy for next year’s blossoms.

---

**Best of Oklahoma Gardening Information Sheet (#3723)**

**OETA air date: December 4 and 5, 2010**

**OETA airtime: Saturday 11:00 a.m., Sunday 3:30 p.m.**

*(Rerun of Show #3711, originally aired on September 11 and 12, 2010)*

**The Oklahoma Horticultural Society’s Garden Tour for Connoisseurs** – In this segment we take a sneak peak at some of the home gardens that were featured in the Oklahoma Horticultural Society's Annual Garden Tour for Connoisseurs!
**Shouna & Gary Olson, 12501 Dutch Forest Place, Oklahoma City** – This large garden surrounds a brick and stone house in the Dutch Forest addition. In the front yard the scene is set with perennial borders surrounding the house, and large raised beds near the street. A large pond stocked with koi is the centerpiece of the back garden. Curving beds and borders surround the home with large shrubs and swaying grasses providing both grace and structure in the fall. Colorful crapemyrtles grow throughout, and in the spring and fall, Encore® Azaleas bloom. Shabby Chic styled art, like the bed of an old pickup truck and a second hand bicycle, adorn the garden, and winding through the paths you discover points of interest throughout. Large trees provide ever more shade as you make your way to the back of this large suburban lot.

Each year when the daylilies are in full bloom the Olson Family hosts a garden tour and plant sale to benefit WINGS, a non-profit organization that provides vocational and social programming for individuals with developmental disabilities. In the near future, WINGS will also provide a residential community for adults with disabilities can find a community and workplace in which they can thrive as well as a safe and nurturing place to live. Learn more about WINGS on their website: [www.WINGSok.org](http://www.WINGSok.org).

Plants highlighted are Camellias (*Camellia japonica*), Hosta/ Plantain Lily (*Hosta* species), Daylily (*Hemerocallis* species), Rice Paper Plant (*Tetrapanax papyriferus*) and Princess Tree (*Paulownia tomentosa*).

**Ellen & Richard Orthwein, 11705 N. Bryant Avenue, Oklahoma City** – After a short journey over a double hung bridge, welcome to this suburban retreat of approximately 140 acres, 40 to 50 of which are exquisitely manicured with six waterfalls, ponds and a grotto bar. The owners’ Cape Cod inspired home sits atop a large hill landscaped with shrubs and trees like Deodor Cedar (*Cedrus deodara*), Chinese Pistache (*Pistacia chinensis*), and a ’Vanderwolf's Pyramid' White Pine (*Pinus flexilis*). Behind the home is a large terrace, swimming pool and grotto bar, fully landscaped with three young Sequoias (*Sequoia spp.*) rarely grown in Oklahoma, weeping Blue Atlas Cedars (*Cedrus atlantica ‘Glauca’*), Chinese Fringe flowers (*Loropetalum chinense var. rubrum*), hostas and other shade perennials. Bronze statues, including one which is a fountain, highlight the more formal landscape near the home. After peeking into the grotto bar, why not follow the 250 foot, meandering stream past the swimming pool, and gaze upon the lower, naturalized landscape of beautiful ponds, fountains and bubbling waterfalls. Design by Caviness Landscape Design.

**Karen & Warren Filley, 3409 Harris Drive, Edmond** – This three-quarter-acre plant collector and art lover’s paradise began in 1987. Therefore, many of the trees and shrubs are mature specimens. The garden was designed to have plants in bloom most of the year with most plants being partial to full shade. Walking the pathways will take the visitor through a series of garden rooms much in the style of Hidcote Manor with focal points at nearly every turn. Certified as a wildlife habitat by the Oklahoma Department of Wildlife Conservation since the 1990s, Dr. Filley is an allergist, and the garden is continually being planted and maintained to have less pollen. In the rear right corner, a section of the garden is dedicated to growing vegetables. A large back deck makes the garden an enjoyable living and entertaining space even when experienced in winter. A list of notable plants will be onsite, but two are the China Fir (*Cunninghamia lanceolata*) in the front garden and the Harlequin Glorybower (*Clerodendron trichotomum*), a passalogn plant from renowned landscape architect, Wolfgang Oehme. There is also a Variegated Leaf Beech (*Fagus sylvatica ‘Purpurea Tricolor’*), a Dawn Redwood (*Metasequoia glyptostroboides*), a Weeping Serbian spruce (*Picea omorika ‘Pendula’*) and so many other treasures. Growing in the eclectic mix out front is a Chinese Parasol Tree (*Firmiana simplex*), also known as a Hibaku Tree (translated as A-bombed Tree or Japanese Survivor Tree from Hiroshima, Japan). Continuing an Asian inspired theme, there are Japanese Plum Yews and ten or twelve Japanese Maples throughout the property. A small greenhouse next to the house and a garden shed has a section for tools and one to overwinter plants. Visitors should take their time as they walk...
through in order not to miss any of the artwork, plants or statuary placed tastefully throughout.


**Tom Cronin, 12000 Old Mill Rd., Oklahoma City** – One outstanding design feature of this six-year-old garden is the dry creek bed planted with xeric plants, which runs the length of the front of the house. It was created to divert water away from the house which sits below the surface of the road. In the berm in the front yard is a golden, shrub-type, Gingko Biloba. This garden was influenced and inspired by Tom’s wife, Beth, who was an avid gardener and plant collector. Around the house are numerous trees and shrubs, Southern Magnolias ‘Claudia Wannamaker’ and ‘Symmes Select’ (*Magnolia grandiflora*) which shed their leaves at one time in spring. On one side of the garage, the owner built another dry creek bed, and the back of the garden is designed in two tiers. The front garden and upper tier were completed first with the lower tier being the youngest part of the space. Also, in back is an extension of the house with a gracious fireplace that gives the feeling of living within the garden. Notable plants in the back are the Weeping Spruce (*Picea pungens pendula*) which adorns the stairway and several cultivars of Deodor Cedars (*Cedrus deodara*) including ‘Divinely Blue’, with its distinctive mounding habit. In the lower tier is a Purple Chokecherry (*Prunus virginiana* ‘Schubert’), a Proven Plant selection for Oklahoma, which has disease resistant burgundy foliage. Another outstanding plant is the ‘Thunderhead’ Dwarf Japanese Black Pine (*Pinus thunbergii* ‘Thunderhead’) in the back garden. Design by Scapes, Inc.

Plants highlighted are Live Oak (*Quercus virginiana*), Cherry Laurel (*Prunus caroliniana* ‘Bright and Tight’), Allee Elm (*Ulmus parvifolia* ‘Allee’) and Canadian Chokecherry (*Prunus virginiana*).

Following are two additional gardens that will be featured on the tour, but which we did not have a chance to preview on *Oklahoma Gardening*.

**Jennifer & Hugh Stout, 432 NE 70 Street, Oklahoma City** – Stout Gardens at Dancingtree, is only one-half mile east of Broadway Extension in Oklahoma City, but comes complete with the country ambiance of two grazing horses, and feels a million miles away. The garden encompasses nearly five acres and is brimming with irises, daylilies and statuary created from reclaimed items on the property. Ornamental deciduous trees and evergreens, like Red Japanese Maples (*Acer palmatum*), Purple Smoke Trees (*Cotinus coggyria*) and Lobolloy Pines (*Pinus taeda*) are garden backbones which are then layered with roses, dwarf peach trees and junipers, along with other trees and shrubs. Beneath this pleasant backdrop, something is always blooming until winter winds blow. Composed of a series of garden rooms, by fall lovely grasses sway in the breeze while native shrubs like American Beautyberry (*Callicarpa americana*) sport beautiful purple berries. Wildflowers such as Mexican Hat (*Ratibida columnaris*) team up with Black and Blue Salvia (*Salvia guaranitica*) and Esperanza (*Tecoma stans*) enticing bumblebees and butterflies to their nectar. It is truly a wildlife habitat, but also designed for human play with an outdoor kitchen and fire pit. Design by owner.

**Barbara & Melvin Thompson, 4612 Roserock Drive, Oklahoma City** – Visitors to this graceful new home in northeast Oklahoma City will encounter plantings of sizeable evergreens, along with easy-care shrubs and perennials. At the front of the property, there is a large specimen Crapemyrtle ‘Tuscarora’ (*Lagerstroemia indica*) and Amur Maple (*Acer ginnala*) planted, along with assorted varieties of Deodor Cedars (*Cedrus deodara*) like ‘Electra Blue’ ‘Blue Velvet’ and ‘Gold Cone’. Then, stroll around back to
encounter a beautiful infinity edge pool and spa which glisten like jewels in the stone patio. While holding intricate wrought iron railings, descend stone steps on either side of the waterfall to another patio and fire pit with a splash pool below. In the raised beds accenting the waterfall, are two ‘Slender Silhouette’ Sweetgum trees (*Liquidambar styraciflua*) on either side. Below is a naturally designed grass and wooded area with large boulders and raised berms of wildlife friendly plants. The lower garden is crafted to blend with native trees along the creek and is filled with Autumn Blaze® Maples (*Acer x freemanii*), Live Oaks (*Quercus virginiana*) and Red Oaks (*Quercus rubra*). A brilliant splash of color along the back against the wrought iron fence is provided by ‘Raspberry Sundae’ Crapemyrtles. Design by Scapes, Inc.

**Cooking with Barbara** – Barbara Brown, Extension Food Specialist, prepares a trail mix.

### Trail Mix

- 1/2 cup lightly salted peanuts
- 1/2 cup unsalted almonds
- 1/2 cup dried apple pieces
- 1/2 cup dried cranberries
- 1/2 cup oat circles
- 1/2 cup unfrosted whole wheat cereal squares

Mix all ingredients in a large bowl. Stir well. Divide into seven equal amounts in small resealable plastic bags.

Serves 7 (1/2 cup per serving).

<table>
<thead>
<tr>
<th>Nutrition Facts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Servings per recipe: 7</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Calories 179</th>
<th>Calories from fat 99</th>
</tr>
</thead>
<tbody>
<tr>
<td>% Daily Value</td>
<td></td>
</tr>
<tr>
<td>Total Fat 11g</td>
<td>16%</td>
</tr>
<tr>
<td>Saturated Fat 1g</td>
<td>6%</td>
</tr>
<tr>
<td>Cholesterol 0mg</td>
<td>0%</td>
</tr>
<tr>
<td>Sodium 50mg</td>
<td>2%</td>
</tr>
<tr>
<td>Carbohydrate 20g</td>
<td>7%</td>
</tr>
<tr>
<td>Dietary Fiber 4g</td>
<td>15%</td>
</tr>
<tr>
<td>Protein 5g</td>
<td>10%</td>
</tr>
<tr>
<td>Vitamin A: 2%</td>
<td>Vitamin C: 5%</td>
</tr>
<tr>
<td>Calcium: 4%</td>
<td>Iron: 10%</td>
</tr>
<tr>
<td>Folacin: 9%</td>
<td>Potassium: 4%</td>
</tr>
</tbody>
</table>

Barbara Brown, Food Specialist  
Oklahoma Cooperative Extension Service  
6/10
Botanic Garden Ambassador Olen Thomas and the Native Splendor Garden – In this segment we welcome Botanic Garden Ambassador Olen Thomas to the show. Olen has been a volunteer at the gardens for 18 years, since the very beginning of the Ambassador program. He has a passion for native plants as well as gardening for birds. We asked Olen to help us in designing a garden where we could feature plants native to Oklahoma. Olen shares some of his design ideas with us and tells how he selected the plants included in Native Splendor. Some of the plants used in the garden are Native (coral) Honeysuckle (Lonicera sempervirens), Rayless gaillardia (Gaillardia suavis), Butterfly Weed (Asclepias tuberosa), Blue Lovegrass (Eragrostis elliottii), Little Blue Stem (Schizachyrium scoparium ‘The Blues’), Switchgrass (Panicum virgatum ‘Cloud Nine’) and Indian Pink (Spigelia marilandica).

Oklahoma City Farmer’s Market – In this segment we visit the Farmers Market in Oklahoma City at OSU-Oklahoma City. Oklahoma has a number of farmer’s markets located throughout the state. These local markets are excellent places to find not only fresh produce, but also dairy products, meats, grains, cut flowers, bedding plants, and more. Farmer’s markets vary in size from a few vendors set up at a local parking lot or city park, to the large, indoor market at OSU-Oklahoma City.

There are many benefits of shopping at your local farmer’s market. Of course, the availability of fresh fruits and vegetables is the greatest advantage. Fresh produce also has better flavor. Because the food travels fewer miles to reach the market, growers are able to harvest produce at the peak of ripeness, once the full flavor potential has been realized. We also find a greater selection of produce, including many heirloom cultivars that we won’t find at the local grocery store. The diversity of cultivars offers a wider range of flavors to delight the palette.

Many growers offer organic produce at the market. A great advantage of buying direct from the grower is that you can develop a relationship with the person producing your food. You can learn how the produce is produced. Growers also often provide recipes or have helpful tips on storing and preparing the produce. This personal interaction is what makes the market a special place to shop.

There are also economic and environmental advantages to shopping locally. When you support your local growers, your food dollars stay in the community. Since the food travels fewer miles to reach the market, less pollution is added to the atmosphere in transportation.

The OSU-Oklahoma City Farmer’s Market features over 30 vendors and is open year-round. The market is a member of the Oklahoma Grown Farmer’s Market Program and the Oklahoma Farmer’s Market Alliance. All items for sale are grown or made in Oklahoma. Market hours and locations are:
Native Splendor Garden: Red Cup-leaf Penstemon, Tubeflower Penstemon, American Ipecac, and Barbara’s Buttons – This week in our Native Splendor Garden we have a magnificent perennial blooming, the Red Cup-leaf Penstemon (Penstemon murrayanus). Penstemon in Greek means five stamens. The stamens are the male reproductive structures of a flower, each stamen has a stalk called a filament and an anther, which contains the pollen sacks. In penstemons, four of the stamens are fertile and one is sterile. The plants are commonly called beard tongue because the sterile stamen has a tuft of small hairs along the filament.

Of the 13 penstemon species native to Oklahoma, this is the only species with a red or orange colored bloom. The flowers are very striking, and the red-hued stems provide even more color. The bold reds are set against interesting blue foliage. If you look at the upper set of leaves, you can see how they are joined together around the stem forming a cup. This is where the red-cup leaf penstemon gets its name. The small cup is the perfect place for rain drops to collect and butterflies can come take a drink.

The flowers of red cup-leaf penstemon are present from April through June and flower stalks reach a height of around 18 inches. Hummingbirds love sipping nectar from these flowers, so be sure to plant one near a window where you can watch the action. Like many of our natives, this plant does not want to be pampered. Plant it in an unamended, well-drained soil and you will enjoy the red-cup-leafed penstemon year after year.

Another native penstemon is the Tubeflower Penstemon (Penstemon tubaeflorus). This is a very elegant bloomer with long stalks of pure white flowers that reach up to three feet in height. Flowers are present May through June. This is easily one of the showiest penstemons. The plant itself forms a tight clump spreading 18 inches wide. Tubeflower penstemon is tolerant of more moisture than the red-cup-leaf penstemon, but still requires a well-drained soil. Avoid over-watering this plant. Penstemons look great in sunny borders.

Gillenia stipulata or American ipecac is a member of the rose family. It has an upright growth habit making the plant well suited for planting at the back of a bed or border. The leaves have a soft, medium texture and are palmately lobed. The new foliage at the bottom of the plant is more finely cut than the upper, older leaves. Both are deeply veined and have a serrate or toothed edge. The red stems are another attractive feature.

American ipecac flowers are white stars with five petals that appear late spring into early summer. The plant performs best under slightly mesic or wet conditions and will be most successful in Oklahoma if it receives light shade, especially from the afternoon sun. The mature size of American ipecac is three feet
by three feet.

Many of us are familiar with syrup of ipecac, which is used to induce vomiting. Syrup of ipecac actually comes from a different plant called ipecacuanha, but Gillenia has the same properties and has been used as a substitute for ipecacuanha. American ipecac was used by the Native Americans, and became known as an emetic to the colonists at an early time.

Another early bloomer is this low-growing perennial commonly called Barbara's Buttons (Marshallia caespitos). This plant belongs to the aster family, as evident by the daisy-like flowers. These floral "buttons" have no ray florets, or petals, instead consisting of frilly disk florets that are very showy. The flowers sit atop 12- to 18-inch stalks that emerge from a rosette of attractive strap-like leaves. The flowers are sweetly fragrant and work well as cut flowers. They are relished by butterflies, and when seed is formed, provide food for finches and other small birds. This is a pretty but tough plant, tolerant of a wide range of soil types and moisture regimes.

Native plant experts everywhere agree that Barbara's Buttons is an exceptional and garden worthy perennial. It is a very compact native plant growing 16 by 16 inches, and fits well in the front of a border or in a rock garden. Barbara’s Buttons require full sun and moderate to low moisture. Like many natives it performs best in a well-drained un-amended soil.

**Cooking with Barbara** – Barbara Brown, Extension Food Specialist, bakes oatmeal with fruit and nuts.

**Baked Oatmeal with Fruit and Nuts**

- 1-3/4 cups low-fat milk
- 2 teaspoons unsalted butter
- 1/8 teaspoon salt
- 1 cup old-fashioned rolled oats
- 1/4 cup dried apricots, chopped
- 1/4 cup dried cranberries, raisins or other small dried fruit
- 1 tablespoon lightly packed brown sugar
- 1/2 sweet apple, peeled and cored
- 2 tablespoons lightly packed brown sugar
- 3 tablespoons chopped pecans or walnuts

1. Preheat oven to 350°F. Spray a 2-quart microwaveable, ovenproof casserole with nonstick vegetable spray.
2. Heat milk and butter in casserole dish in microwave oven on HIGH until milk steams, 1 to 2 minutes. Mix in salt and oats. Set aside.
3. Mix chopped apricots, dried cranberries and 1 tablespoon brown sugar into oats. Shred apple into oats and mix to combine.
4. Bake, uncovered, 15 minutes. Stir oats then top with 2 tablespoons brown sugar and nuts. Bake, uncovered, 15 minutes longer, until oats are chewy. Serve at once. Serves 4.

<table>
<thead>
<tr>
<th>Nutrition Facts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Servings per recipe: 4</td>
</tr>
<tr>
<td>Calories 250</td>
</tr>
<tr>
<td>% Daily Value</td>
</tr>
<tr>
<td>Total Fat 8g</td>
</tr>
</tbody>
</table>
**Poinsettias** – In this segment we join Dr. Bruce Dunn, Assistant Professor of Floriculture, for a look at poinsettia production with his Horticulture Greenhouse Management Class. The poinsettias are used as a teaching tool for students and teams of students are responsible for half a greenhouse worth of plants. Bruce shares with us some of the products the students are producing and the benefits this program brings to the students. Poinsettia (*Euphorbia pulcherrima*) cultivars mentioned are ‘Jingle Bells’ ‘Prestige Red’ and ‘Cortez Burgundy’.

Two students also join us to share their experience in the greenhouse. Horticulture student Lance Swearengin shares with us some of the responsibilities the students have for the poinsettia production, including watering, monitoring for pests and managing plant nutrition. He also shares with us some of the challenges faced in poinsettia production. The students are also growing specialty crops for the holidays. Botany student Jessica Squires shows us these crops and explains how students managed the timing of each in order to have a blooming product in time for the holidays. She also shows us some of the challenges faced with production of these crops and shares suggestions for customers bringing these plants into their homes.

The students sell the products of their labor at the annual Poinsettia Sale held in the Teaching Greenhouses on the OSU Stillwater Campus. This year the sale will be Thursday, December 2 and Friday, December 3 from 7:30 a.m. to 5:30 p.m. For more information, please call Stephanie Larimer at 405-744-5404. Proceeds from the sale support materials used in the class, help fund field trips for the students throughout the semester and also provide scholarships to Horticulture honors students.

**Garden Gifts and New Products** – Each fall I like to share a few new products and gift ideas for our gardening friends. Books, of course, always make great gifts. This year I wanted to get back to the basics, finding books that feature specific plants or groups of plants such as the ‘Tulip’ and ‘Daffodil’ books. I also found this miniature ‘Square Foot Gardening’ book, which will make a great stocking stuffer. Of course, a number of new specialty books are also available.

Many of our volunteers bring seats of turn over buckets to sit on while they are working. The Botanica Garden Tote and Seat from [Garden.com](http://Garden.com) is a good gift for those that like to work comfortably from a sitting position. The folding chair reminds me of the stool I used when camping as a girl; it is
lightweight, yet sturdy. The tool bag can be detached from the stool and used on its own or in combination.

Gardeners are always looking for a new tool. I found these folding Loppers from Gilmour to be very innovative. The handles can be folded in reverse over the cutting blades for safe, easy storage. Certainly much more compact than an open lopper, and I can carry them in my tool bag without cutting the cloth. The same gear-driven design that allows for folding also improves leverage, reducing the effort required to make any cut. The loppers are also very lightweight, making the tool easier to use for those with less upper-body strength. The loppers will be available in 2011 from http://www.gilmour.com.

There is an interesting new product for those of you who do not compost your leaves. I know bagging leaves can be challenging, the new dsolv Lawn Bags and Sleeve make bagging easy. The mesh bags are made of a plant-based resin that completely dissolves in composting facilities, whether in your backyard or your municipality site. The sleeve is spring-loaded and pops up easily to support the mesh bags for filling. The starter kit also comes with a handle for carrying up to three bags, which despite being biodegradable, are fairly tough and will stand up to being dragged along the driveway. These can be found at http://dsolvbag.com.

For young gardeners I always look for gifts to inspire them to keep working in the garden. This gift set from Green Arbor has an apron for young gardeners to carry their seeds, tools, garden discoveries, work gloves, and a hat to keep the sun off their faces. We also have a great winter seed starter kit for the littlest gardeners to start their seeds indoors. My children are always eager to start seeds on the windowsill and watch their seedlings grow.

Grown-up gardeners also love to grow indoors in winter. For this, Ferry Morse has a variety of attractive containers for starting seeds and growing herbs. Set a wooden herb garden crate in your kitchen for fresh herbs to flavor your soups and stews or grow a pot of lavender for its fresh scent.

Here is a gift I need to purchase for our entire garden team. Whenever we walk through the studio gardens we come back with handfuls of weeds, cuttings or other garden debris. The Gardener’s Hollow Leg is a “hands-free” debris and harvesting bag that attaches to your belt or belt loops. It has a wide opening and can hold up to five gallons. It is perfect for weeding, light pruning and deadheading, or for harvesting fruits and vegetables. It can be purchased at www.thegardenershollowleg.com.

Cooking with Barbara – Barbara Brown, Extension Food Specialist, and Kim prepare a pepper pizza.

**Pepper Pizza**

- 2 pounds frozen bread dough
- 1/2 to 3/4 cup pizza sauce
- 2 pounds bell peppers (green, yellow, red)*
- 1 pound poblano peppers*
- 5 tablespoons olive oil, divided

1. Thaw frozen dough, following directions on package.
2. Sauté peppers in 4 tablespoons olive oil over medium heat until they just begin to brown. Cool to room temperature.
3. Preheat oven to 350°F.
4. Roll bread dough on lightly floured surface into a rectangle three times longer than a large baking sheet. (If space is not available, divide dough into 3 equal pieces and roll each into a rectangle slightly longer than the baking sheet.)

5. Lightly flour baking sheet. Center rolled dough on sheet. (If using 3 pieces of dough, center one piece on baking sheet so that one edge hangs slightly over the edge of the sheet.)

6. Spread a very thin layer of pizza sauce on dough. Top with half the peppers.

7. Fold one end of the long sheet of dough over peppers. (If using three pieces, lay a second sheet of rolled dough over peppers so that one edge hangs over the opposite edge of baking sheet from the first layer. Pinch bottom layer to second layer, wrapping peppers inside.)

8. Spread another very thin layer of pizza sauce on the second layer of dough. Top with remaining peppers.

9. Fold remaining piece of dough over peppers. Pinch edges together. (If using separate pieces of dough, put the remaining rectangle of rolled dough atop peppers. Pinch edges together to encase peppers.)

10. Mix 1 tablespoon pizza sauce with remaining 1 tablespoon olive oil. Brush over dough.

11. Bake at 350°F about 45 minutes, until top turns brownish-red. Lift end of pizza to check bottom crust for doneness. It will be golden brown.

Serves 15.
*Use a total of 3 pounds of peppers. Choose they type based on availability and taste preference.

Nutrition Facts

<table>
<thead>
<tr>
<th>Nutrient</th>
<th>Amount</th>
<th>% Daily Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calories</td>
<td>241</td>
<td></td>
</tr>
<tr>
<td>Calories from fat</td>
<td>63</td>
<td></td>
</tr>
<tr>
<td>Total Fat</td>
<td>7g</td>
<td>11%</td>
</tr>
<tr>
<td>Saturated Fat</td>
<td>1g</td>
<td>3%</td>
</tr>
<tr>
<td>Cholesterol</td>
<td>0mg</td>
<td>0%</td>
</tr>
<tr>
<td>Sodium</td>
<td>394mg</td>
<td>16%</td>
</tr>
<tr>
<td>Carbohydrate</td>
<td>36g</td>
<td>12%</td>
</tr>
<tr>
<td>Dietary Fiber</td>
<td>3g</td>
<td>13%</td>
</tr>
<tr>
<td>Protein</td>
<td>7g</td>
<td>14%</td>
</tr>
<tr>
<td>Vitamin A</td>
<td>10%</td>
<td></td>
</tr>
<tr>
<td>Vitamin C</td>
<td>202%</td>
<td></td>
</tr>
<tr>
<td>Folacin: 7%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Calcium: 1%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Iron: 4%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Kim Rebek and family
Barbara Brown, Food Specialist, Oklahoma Cooperative Extension Service

Announcements – Dr. Mike Schnelle will host a Global Horticulture Workshop on December 9, 2010 at the Robert M. Kerr Food & Agricultural Products Center on the OSU Stillwater Campus. Join horticulturists from around the state to learn about ornamental and edible horticulture the world over and how we can bring ideas and interesting plant material from abroad into the gardens of Oklahoma. For more information, contact Stephanie Larimer at 405-744-5404.

Oklahoma Gardening Information Sheet (#3720)
OETA air date: November 13 and 14, 2010
OETA airtime: Saturday 11:00 a.m., Sunday 3:30 p.m.

Planting Edible Spring Bulbs – I have included several bulbs in the design of our Edible Landscape Garden. It may come as a surprise to learn tulips are edible. The petals have a delightful floral flavor and make a good substitute for crackers. Tulips are also the most commonly planted spring flowering
bulb. Tulips include a large number of species and cultivars in the genus *Tulipa*. Many gardeners treat tulips as annuals, replanting them year after year. This is because many cultivars do not perennialize well. One reason we tend to lose tulips from year to year is that the bulbs rot in our moist, irrigated beds. Other tulips simply are not very hardy.

If you’d like to try establishing a perennial bed of tulips, select some of the species tulips. *Tulipa clusiana* is one species that tends to perform well in clay soils. Another strategy is to plant bulbs in raised beds. For our edible ornamental landscape we have built up a berm. This is where we will work on establishing bulbs, as well as Mediterranean herbs like lavender that are also sensitive to wet feet. Whether planting in a raised bed or not, consider soil drainage. Poor drainage can allow water to collect and rot the bulbs.

As for edibles, fragrant tulips will have more flavor than those lacking fragrance. For our bed I have selected the tulips ‘Princess Irene’, ‘Apeldorn’ and ‘Apricot Emperor’. I am also trying one of the *clusiana* species cultivars called ‘Cynthia’. Tulips can tolerate a close spacing; I am digging holes about 3 inches apart. Typically, large bulbs should be spaced three to six inches apart within groupings. Smaller bulbs can be placed one to two inches apart. Remember, bulbs that become established will reproduce naturally and form denser patches over time that may eventually need to be thinned, about every 3 to 5 years.

In general, bulbs should be planted at a depth three times that of the bulb height. This depth is measured from the bottom of the bulb, not the top. You do not want to set the bulbs too deep or they may not emerge. But if they are too shallow, some bulbs can be damaged by cold temperatures. I will set these tulips at about 8 inches.

You also want to consider light conditions. Tulips perform best in a full sun location. Some bulbs will grow well under trees, because they flower before the leaves fill out. But you need to make sure the plants will continue to receive enough light to replenish energy stores during the leaf stage following bloom.

When placing bulbs, make sure to set them right-side up. Typically, the bottom has a flattened plate and the top is more pointed. If you are uncertain as to which side is which, place them sideways in the planting hole. Set the bulbs at the bottom of the hole, pressing them gently into the soil. Cover the bulbs and mix a slow-release fertilizer into the top few inches of soil. Do not mix the fertilizer directly into the planting hole, because it can cause root burn and immature root development.

We will complete the planting of our Edible Landscape in the spring and install many more surprising edible flowers, as well as more familiar fruits and herbs. In the meantime, we will have some delightful tulips to brighten the landscape.

**Shrubs for Fall Fruits** – In this segment Horticulture Professor Mike Schnelle joins us to look at a few shrubs with exciting fall fruit color. When we think of fall color, the image that immediately comes to mind is that of foliage in brilliant hues of red, yellow and orange. But berries also provide vivid color to the autumn landscape, and many persist well into the winter. Many fruits also provide valuable food for wildlife. Mike shares with us cultural requirements and ornamental traits of Viburnum (*Viburnum* hybrid ‘Eskimo’), Crabapple (*Malus* hybrid ‘Prairiefire’), Beautyberry (*Callicarpa americana*) and Flowering Dogwood (*Cornus florida*).
Winterizing the Small Fruits Garden – The blueberries are showing their lovely fall colors and reminding me it is time to protect them for the winter. Our small fruits will benefit from a fresh layer of mulch to conserve soil moisture and regulate temperatures over the winter. Apply a 4-inch deep layer of organic mulch around the base of the blueberries. Organic mulches such as leaf compost, pine bark and straw provide insulation for the plant to prevent cold damage and excessive drying of the soil.

Our blackberry and raspberry plants will also benefit from a fresh layer of mulch to prevent winter injury to the crowns or growing points of the plants. The same is true for grapes and kiwi vines. Replenish mulch in beds after the first killing frost. If moles and mice are a problem, pull the mulch back a little way from the trunk to void creating a favorable feeding site for the rodents.

Passion fruit are more sensitive to cold temperatures and typically die back to the ground in winter. But they will still continue to ripen fruits until the tops are killed out. After a hard frost has taken the foliage, cut stems back to the ground and lay a very thick blanket of mulch over the crown to provide insulation for the winter.

In early to mid-December we will mulch our strawberry plants. Strawberry plants benefit from a winter covering of straw to protect the crowns from freeze and thaw cycles. Freezing and thawing of the soil damages the growing point of the plant and also causes soil heaving which can push plants out of the ground. This is especially a problem with shallow-rooted plants like strawberries. Another benefit of winter mulch is to reduce the drying effects of the wind. Winter mulch has the additional potential benefit of delaying plant development and flowering in the spring, which can help in avoiding spring frost injury. The best time to mulch strawberries is after several hard frosts. By this time the plants have developed cold hardiness. If you cover plants too early they may not become hardy enough to sustain winter temperatures.

Winter Protection of Boxwoods – Last week, David Hillock shared suggestions for protecting our trees from winter damage. Another group of plants that often experience winter damage are the boxwoods. Water loss can cause severe damage to boxwood during winter when high winds or temporary warm weather causes a plant to give off an unusually high amount of moisture.

When this water loss occurs at times when the ground is frozen, roots cannot take up moisture to replace lost water. The result is a browning or burning of the foliage.

Various management practices may help to prevent winter damage. Make sure the plants enter the dormant season in a healthy and vigorous condition with adequate soil moisture. Check to see that the center of the plant is free of dead leaves and other debris. And be sure to continue watering during the dry winter months. Monitor weather conditions and water during extended dry periods or about one to two times per month. Water only when air temperatures are above 40 degrees F. Apply water at mid-day so it will have time to soak in before possible freezing at night. Mulch the plant with wood chips to reduce water loss from the soil. Mulch also protects the plant by preventing rapid temperature changes at the soil surface.

Boxwoods placed in sites exposed to winter winds tend to experience more damage. Provide wind protection for plants in exposed situations by creating a simple wind break. Use snow fences or stretch burlap between stakes or over a lattice frame set next to the boxwood. Or you can stick pine boughs in the ground around plants to form a wind break. When planting boxwoods, it is best to avoid exposed, windy sites.
Large boxwoods may be protected against ice damage by wrapping the outer branches with strong nylon cord. Tie the cord securely to a low branch, pressing the boughs upwards and inward; wrap cord in an upward spiral around the bush, having cords 8 to 10 inches apart. Have cord tight enough to prevent breakage from excess weight of snow or ice, but not tight enough to exclude air circulation around the plant.

**Vegetable Garden: Soil Sampling** – As our vegetable garden establishes, I want to keep a close eye on the nutrient levels available in our soils. Soil testing is also the only way that we can know exactly what type and how much fertilizer a planting might require. It is a good idea to have soils tested every two to three years. With our new garden, I have been testing soil each year. It can take several years to establish rich, healthy soils in a new vegetable garden.

We want to obtain a representative sample for the area being tested. To do this, collect a number of samples from across the entire area and combine them into a single, representative sample. Collect samples to a depth of six inches. Take as many as 15 to 20 individual cores randomly across the area and mix them in a bucket. Make sure to use a clean bucket that does not have any cleansers in it. Many cleansers contain chemicals that could alter your soil test results. Mix the individual samples together, then fill the sample bag for analysis.

Sample bags are available at your county extension office, where soil samples may also be submitted. The samples are sent to the OSU Soil, Water, and Forage Analytical Laboratory for testing. Tests cost $10 each, and evaluate soil pH, nitrate nitrogen, phosphorous and potassium contents. Test results include fertilizer recommendations specific to the type of vegetation growing on the site. Be sure to mark the proper space on the sample label indicating the type of area sampled, such as turf or garden. It is important that you do not put the soil in a plastic bag, but place it directly in the sample bag. Soil samples are dried in an oven, where plastic bags could melt. You can learn more about collecting soil sample in OSU Factsheet **PSS-2207 How to Get a Good Soil Sample**.

**Announcements** – Dr. Mike Schnelle will host a Global Horticulture Workshop on December 9, 2010 at the Robert M. Kerr Food & Agricultural Products Center on the OSU Stillwater Campus. Join horticulturists from around the state to learn about ornamental and edible horticulture the world over and how we can bring ideas and interesting plant material from abroad into the gardens of Oklahoma. For more information, contact Stephanie Larimer at 405-744-5404.

**Maples with Mike Schnelle** – In this segment Horticulture Professor Mike Schnelle joins us to look at a number of maples for the landscape. Maples are known for their magnificent fall foliage. Mike shares with us some of his favorite American cultivars, the Red Maple (*Acer rubrum* ‘Somerset’) and Fall Fiesta™ Sugar Maple (*Acer saccharum* ‘Bailsta’). We also take a look at an underutilized Asian maple, the Miyabe Maple (*Acer miyabei*) and highlight the Paperbark Maple (*Acer griseum*) not for its fall color, but for its attractive bark.
**Forcing Amaryllis** – I love giving amaryllis as a holiday gift because the flowers are so striking and provide quite a pick-me-up during the winter months. The amaryllis we commonly use for forcing are actually a misnamed plant belonging to the genus *Hippeastrum*. True amaryllis refers to *Amaryllis belladonna*, better known as Naked Ladies or Surprise Lilies.

Dutch breeders have spent centuries hybridizing *Hippeastrum* in developing the flower we know and love. Today's cultivars have stalks ranging from about 12 to 24 inches with each stalk producing 4 to 6 flowers. Typically, a bulb will produce two stalks in a blooming season and bloom for seven to ten weeks. With care, these bulbs will bloom every year for many years.

Like the Paperwhites we potted last week, *Hippeastrum* are forced to flower out of season. Most *Hippeastrum* will go dormant naturally and re-bloom sometime during winter. However, many people prefer to force their plants into bloom for the holiday season. This time of year garden centers sell “prepared” or “pre-chilled” bulbs ready to pot up and have in time for the holidays. But you will not see them labeled as *Hippeastrum*, for one reason or another the name amaryllis has stuck with this group of plants.

Select a large plump bulb that still has some roots at the base. Plant this into a pot that fits rather snug, with just an inch of space around the edge. The bulb needs to feel crowded in order to bloom. Partially fill the pot with potting mix and place the bulb so that top third of it will be exposed when you fill in potting soil around the sides of the pot. We want at least 2 to 3 inches of soil beneath the base of the bulb.

It is a good idea to also place a bamboo stake in alongside the bulb as you fill the container with soil. Sometimes the flowers become top-heavy and fall over. Placing the stake now will help you avoid damaging the roots or bulb later.

Water the bulb in lightly so the soil mix is damp and place the pot in a warm location with plenty of light. Water sparingly until green growth appears, then water regularly keeping the soil moist, but not wet. A good way to water small containers like this is to place it in the kitchen sink and run cool water slowly until it pools slightly in the pot. Then allow all the extra water to drain out the drainage holes. This will avoid problems associated with leaving a pot in a water-filled saucer.

Another fun way to grow *Hippeastrum* is in a clear glass vase. Place a three inch base of pebbles, stone or shells in the bottom of the base and set the bulb on top of this. Add more pebbles or stone around the bulb for stability. Then add water until it is just below, but not touching the bulb. Keep the water topped-off at this level. Using a clear vase is important so you can see the water depth. Place your vase in a warm, sunny location.

A thick flower stalk will shoot up within a few weeks of planting. Flat leaves will fold open as the flower stalk matures. As the stalk emerges, it is a good idea to turn the pot every few day. This provides the flower stalk with uniform light exposure on all sides and helps it to grow straight. Once the flowers open, move the container away from direct light and other sources of heat. *Hippeastrum* will bloom longer if kept in a cool location.

The massive bloom requires a lot of energy. Feed amaryllis with either a slow-release fertilizer or a liquid fertilizer, 2 to 4 times per month.
As individual flowers fade, carefully cut these off, leaving the other blossoms in place. Once all flowers on a stalk fade, you can cut back the entire stalk to the base.

You can keep your Hippeastrum and have it re-bloom again next year. Once all of the flowers have faded, carefully cut off the flower stalk, but let the foliage continue to grow as long as it can. Keep it in bright light, indoors or out. Continue moderate watering and feeding and your Hippeastrum will store away energy for next year’s blossoms.

**Don’t Bag It: Autumn Leaves** – Bagging or burning leaves are two methods of leaf disposal that no longer fit today’s environmental needs. Sending bagged leaves to the landfill uses precious space, and burning leaves contributes to air pollution and the risk of wildfire. Composting is the best way to deal with your fall tree leaves and produces a rich source of organic matter for your gardens.

Leaves can easily be composted at home. A compost pile is built by layering organic materials. Compost piles should be 3 to 4 feet wide and 3 to 4 feet high. This volume is large enough to allow the pile to heat as composting occurs and small enough to allow for easy turning. You can build bins for composting, but a simple pile works as well.

The layers of a compost pile include a mixture of green and brown materials to balance the ratio of carbon to nitrogen. Start your pile with 3 to 4 inches of dried organic matter, such as leaves or dried grass. Then pile on 3 to 4 inches of green material, such as kitchen vegetable scraps, grass clippings or green plant material. Try to maintain this even mixture of green to brown as you add material to the compost pile. As we start a compost pile, we also want to include a good source of nitrogen, either in the form of manure or fertilizer. If manure is available, add a layer 1 to 2 inches thick or apply one cup of fertilizer. We also want to get our compost started by providing the microorganisms that will decompose the plant materials. Bacteria found in soil are the primary microorganisms that break down organic matter. Adding one inch of soil is sufficient to boost the microbes or you can purchase a commercial compost starter.

Kitchen scraps are great in the compost pile, but avoid meat scraps, fat and bones. Also keep pet wastes, diseased plants and weed seeds out of the compost pile.

The compost pile needs water and aeration to keep the microorganisms active. Keep the pile damp, but avoid over-watering, as this limits oxygen. The microorganisms need oxygen to break down the organic debris. Regular turning of the compost pile insures aeration and speeds the compost process.

You can learn more about leaf composting in the OSU Extension Leaflet L-252 Don't Bag It: Leaf Composting.

**Wrapping Young Trees for Protection with David Hillock, Consumer Horticulturist** – Young, thin-barked trees such as maples and other species often sunscald unless protected. The twigs that shade the trunk should be left at planting, but cut back a few inches so they become denser. A twiggy trunk is preferable to tree wraps, but not all trees have enough twigs, nor is it always practical or aesthetically pleasing to leave lower limbs.

Commercial tree wraps are available and may provide protection for thin-barked trees. Plastic wraps
may provide better protection than paper wraps against lawn mower, weed-eater and rodent damage. If misused, however, damage may occur in the form of trunk girdling or constriction, insects, disease and excessive bark moisture.

Protective wraps may not be necessary at planting. Use based on the type of protection needed. Normal application of tree trunk wraps is October – March for the first two growing seasons. Wraps should be removed each spring prior to spring growth. During spring growth the trunk expands and increases in size. Wraps too tightly applied or left on during this time may result in constriction to the trunk. Tree wraps should be applied loosely from the base up to the first branch by overlapping for a shingle effect. Plastic wraps should fit loosely and include holes or slits for good air movement. Periodically inspect the wraps for trunk damage and insects.

**Winter Horticulture Tips with David Hillock, Consumer Horticulturist –**

*Lawn & Turf*
- Fertilize cool-season grasses like fescue with 1 pound nitrogen per 1000 sq. ft.
- Continue to mow fescue as needed at 2 inches and water during dry conditions.
- Control broadleaf winter weeds like dandelions.
- Keep falling leaves off fescue to avoid damage to the foliage.

*Tree & Shrub*
- Prune deciduous trees in early part of winter. Prune only for structural and safety purposes. Do not prune spring flowering trees and shrubs at this time.
- Wrap young, thin-barked trees with a commercial protective material to prevent winter sunscald.
- Apply dormant oil for scale infested trees and shrubs before temperatures fall below 40°F. Follow label directions.
- Continue to plant balled & burlapped and container-grown trees and shrubs.

*Flowers*
- Continue to plant spring flowering bulbs, pansies, and flowering kale and cabbage.

*General*
- Drain gasoline from power equipment, drain and store water hoses, clean up all tools, coat metal surfaces with thin film of oil.
- Order gardening supplies for next season. Send for mail-order catalogs if you are not already on their mailing lists.
- Now is a great time to design and make structural improvements in your garden and landscape.
- Review your garden records so you can correct past mistakes. Purchase a new gardening journal or calendar to keep the new year’s gardening records.
Building a Hosta Garden: Planting and Companions – We removed a few hosta plants during the path installation. This is not the ideal time of year to transplant hosta, but I will divide and replant the plants we disturbed. Next spring, we will divide and transplant any remaining plants that need relocation. Spring is a good time for dividing hostas because the roots are actively growing and drawing up water.

To divide these plants I will simply separate the individual sections by gently pressing my thumbs between the stems and easing the stems apart. If you are new at dividing hostas you might want to wash the soil off the clump so that you can more easily see individual plants. Hostas grow from a rhizome, similar to iris. Working the stems in a back and forth pulling motion will help the rhizome break apart at an appropriate spot.

If the clump is very large or tough, it may be easier to use a serrated kitchen knife to cut it into sections. Start by spreading the roots so that you determine where you want to cut. We want to keep as many roots as possible by making cuts through the crown but not into the roots. Start by cutting the crown in half, if you are really careful you can navigate around the stems. For very large clumps it is just easier to cut in half, without much concern about losing a few stems. Make the cut about half way through the crown and then pull it apart by hand; use the same back and forth pulling motion.

Replant the divisions at their original level, with the white basal portions of the stems just under the ground. Gently press the soil as you backfill. And of course, keep your transplanted hostas well watered as they establish.

Hostas are generally present only 6 months of the year. During periods when the hostas are dormant, we want to maintain interest in the bed. But I also want to keep the plant palette simple, featuring several cultivars of only a few species. Planting in mass will help with limiting the number of species. For early spring color, we will plant narcissus bulbs, and for winter ground cover, I am planting hellebores.

Hellebores will provide a nice accent to the hostas, filling in with evergreen foliage and flowers during the winter months, while providing a solid green backdrop in the summer. Hellebore cultivars planted in the hosta garden include: *Helleborus x ballardiae* ‘HGC Cinnamon Snow’, *Helleborus niger* ‘HGC Josef Lemper’ and *Helleborus x ballardiae* ‘HGC Pink Frost’.

‘Cinnamon Snow’ is a beautiful selection sporting large creamy white flowers with hints of rose and cinnamon. Plants flower a full three months from December through February. This selection is a hybrid of *Helleborus ballardiae*. I’ll mix it with another *ballardiae* hybrid called ‘Pink Frost’, with pink to burgundy blooms that carry the color into March. Both of these hellebores belong to the Helleborus Gold Series, a collection of dependable, long-blooming...
I am also planting a species hellebore called the Stinking Hellebore (*Helleborus foetidus*). The flowers of this species are different from those of the Oriental hellebore, with clusters of drooping, lime-green flowers produced on upright stems in early spring. The foliage of the stinking hellebore is also unique, with finely divided leaves. I collected these seedlings from beneath a mature plant in a friend’s landscape. This is one of the charms of growing hellebore; there are always babies to tend to and share.

For a darker corner of the garden we have a hellebore cultivar that has white flowers. This cultivar is called ‘Josef Lemper’ and is an improved selection of *Helleborus niger* bred for its upright flowering habit, sturdy stems and long blooming season. ‘Josef Lemper’ will bloom from November through February.

Remember when you are planting to plan for the mature size of the plant. Too often, we space plants too close because they are small at planting time. These young hellebores are not very large right now, but will mature to a two foot spread and should be spaced accordingly. Be careful not to plant the plants either too high or too low, but keep crown just below soil line. Hellebores make strong, healthy root systems very quickly and are one of the easiest plants to move around the garden. These first year plants may not flower for another 2 years, most hellebores begin flowering after 2 to 4 years. But I find it worth the wait. Visit your garden center to find other exciting hellebore cultivars. Fall is an excellent time to add these great perennials to your garden.

**Forcing Bulbs for the Holidays** – We have been busy planting bulbs in the gardens, but we do not have to wait until spring to enjoy these blossoms. Many spring-flowering bulbs can be forced indoors for a colorful winter display. What better way to brighten up a winter day than with fresh flowers.

"Forcing" is the term used to describe the process that stimulates bulbs to bloom out of season. The easiest bulbs to force are Paperwhite Narcissus because they don't require chilling. Other commonly forced bulbs include amaryllis, muscari and hyacinths. More challenging bulbs for forcing include colchicum and miniature iris. When selecting bulbs for forcing look for varieties that are specifically recommended for this purpose. Most bulbs require a chilling period or period of cold temperatures before they will bloom, but bulbs sold specifically for indoor forcing are pre-chilled, removing this step for the gardener.

Paperwhites are quick and easy to start and will bloom within four to six weeks. Start by selecting a container without any drainage holes. I like to use a clear glass vase so I can see the roots of the bulbs growing, but many different types of containers can be used, as long as it is deep enough to hold about 3 inches of media.

When forcing bulbs, it is not necessary to use soil as the medium, though you may. I find it easier to use washed pea gravel or glass pebbles that can be purchased at craft stores. The stones or gravel will hold our bulbs in place as they grow. Fill your container with about 2 inches of growing medium. Then, place the paperwhite or other bulbs on top of the pebbles. For a nice display, set 7 or more bulbs close together so that they almost touch. A large bunch of bulbs will be more dramatic. Set the bulbs so they are perfectly upright. Wiggle the bulbs down into the pebbles a little bit and then fill in around the bulbs with more pebbles. We do not want to completely bury the bulbs, instead, leave 1/2 to 1/3 of the bulb exposed.

Once you have the bulbs in place, add just enough water to the container to reach the base of the
bulbs, but not touch the bulbs. Do not let the bulbs sit in water or they may rot. One of the reasons I like to use a glass container is that it is easy to see the level of the water. If you are using a solid container, just dig a small hole next to a bulb so you can see the water depth.

To start the rooting process, place your container in a cool room that gets low light or no light, such as a windowless room. We will keep our container at low light levels until the roots begin to grow well and the shoots start showing - usually about 1-2 weeks. Keep an eye on the water level and refill as necessary to keep the level just below the bottom of the bulbs.

Once you have good root growth, move your bulbs into a warmer bright, sunny window and watch them grow! Once the bulbs begin to flower, move them out of direct sun so your blooms will last longer. Your home will be filled with beautiful flowers and the refreshing aroma of spring in the middle of winter. Plant batch after batch to keep flowers blooming all winter long. Paperwhite containers make beautiful centerpieces for the table during the holidays, and are also great to give as holiday bouquets. Or force paperwhites with your children to create unique gifts for their teachers or grandparents.

**Colorful Euonymus for Autumn** – When we hear the name euonymus a sprawling evergreen vine covered with scales tends to come to mind. But many different species of euonymus are cultivated ranging in size from the low growing ground-covers to small trees. Today, we have a pair of euonymus that are literally bursting with color. The first is called Hearts-a-Bursting Euonymus (*Euonymus americanus*). This is a native shrub found in the shady understory of eastern North American forests from New York south to Florida, and west to Oklahoma and east Texas. I have found the plant growing wild in the eastern part of our state.

This small shrub grows to a height of four to six feet. It has narrow leaves and green stems. The tiny flowers are rather inconspicuous, but give way to these magnificent showy fruit capsules. Another common name for this plant is the American Strawberry Bush. This name comes from the warty red capsules that look like strawberries when they are unopened. The capsules grow up to one inch across and when they are ripe they burst open to reveal four or five orange-red seeds. The fruits are framed by the persistent scarlet husks. The fruits, though beautiful to look at, are reported to be poisonous if ingested.

In autumn, the leaves turn shades of orange and red before falling and leave the green twigs and stems exposed. These provide structural interest during the winter months and are also a favorite of white-tailed deer. We have the euonymus planted in our wildscape corridor.

Hearts-a-Bursting grows well in shady habitats similar to its natural settings, tolerating dappled to full shade and thriving in humus-rich soils. It is best used in naturalistic settings, in the shade of larger shrubs and trees. But be sure it's close to a path where the interesting fruits can be appreciated! This euonymus will naturalize under ideal conditions, forming loose, open clumps, but it would never be considered invasive or even aggressive. The second euonymus is called Winterberry Euonymus (*Euonymus bungeanum*). It grows as a small tree or large rounded shrub reaching a mature size of 15 to 25 feet. Native to Manchuria and northern China, this euonymus has showy pink fruits, a 4-lobed capsule that opens to expose brilliant red seeds. These seed capsules are persistent and remain colorful well after the leaves fall from the tree. The foliage is rather open, so that light penetrates through the canopy. Fall leaf color ranges from yellow to reddish or brown. I love the gray bark of this winterberry euonymus; it reminds me of the serviceberries growing in my northern gardens. The young stems are more green in color and often have light corky lines.
The beautiful fruits are fruits toxic if eaten, however the tree is a wonderful nesting site for songbirds. Winterberry Euonymus is used as a patio tree, mixed into border or screen plantings or used as a single specimen. It has been used as a windbreak for farmland and for erosion control. This plant can become weedy or invasive in some regions or habitats if not properly managed. Care should be taken to control unwanted vegetation in areas planted with Winterberry Euonymus.

**Cooking with Barbara** – Barbara Brown, Extension Food Specialist, prepares chocolate-glazed caramel apples.

**Chocolate-Glazed Caramel Apples**

- 6 small Granny Smith or other variety of tart apples
- 6 popsicle or craft sticks
- 14-ounce package individually wrapped caramels, unwrapped
- 1/4 teaspoon vanilla
- 2 teaspoons water
- 1/4 cup light corn syrup
- 2 tablespoons butter
- 3 ounces semi-sweet chocolate chips

1. Wash apples under cool, drinkable, running water. Dry well. Remove stem from each apple and push a popsicle or craft stick into the top.
2. Cover a baking sheet with aluminum foil, grease with butter.
3. Fill a medium saucepan half full with water and bring to a simmer. Place caramels and water in a metal bowl over water filled saucepan to create a double boiler (water in saucepan should not touch bottom of bowl). Heat until caramel melts. Stir in vanilla.
4. Roll each apple in caramel sauce until well coated. Place on baking sheet to set, refrigerate 30 minutes.
5. While apples chill combine corn syrup and butter in a small saucepan. Heat just to boiling. Remove from heat and add chocolate chips. Stir until chocolate is melted.

**Twig Girdlers** – You may be noticing a bunch of twigs littering the yard right now. This is possibly a result of a longhorned beetle called the Twig Girdler (*Oncideres pustulatus*). Close inspection of the twigs will reveal a distinct cut made by this beetle. It is a uniform V-shaped cut with a small central area with a jagged surface caused by the break. Twig girdlers lay eggs in the tender bark near branch ends after they girdle the twig. The twig will die beyond the chewed portion and will remain hanging in the tree until the wind blows it loose. We see fallen branches begin to accumulate beneath trees September through October.

The eggs in the branches hatch three weeks after being laid and the developing larvae spend the winter inside the twig. While the insects do not harm the health of trees, they can impact the appearance. Control the beetles by collecting fallen twigs and burning them in the fall and winter.
months. Twig girdlers are commonly found on pecan, hickory and elm. They also attack other trees including oaks, hackberry, dogwood and various fruit trees.

**Fun Facts about Milkweed** – In this segment Dr. Mark Fishbein from the Department of Botany joins us to learn a few new facts about milkweed plants. We start by taking a look at the great diversity of plants in the milkweed group, including many unusual specimens. Milkweeds that are discussed include Native Milkweed (*Asclepias tuberosa*), Tropical Milkweed/Blood Flower (*Asclepias curassavica*), Carrion Flower (*Stapelia gigantea*), Carrion Flower (*Huernia* sp.), Corky Milkweed Vine (*Matelea cyclophylla*), Hoya (*Hoya multiflora*) and Snow of the Mountain (*Euphorbia marginata*). Milkweed is native to Africa and there are 130 native species in the U.S. alone. We discuss the milky sap exuded by milkweed leaves and the protective qualities it affords the plant. We also look at a host of insects that have developed a tolerance and even utilize this poisonous sap, making milkweed their home. These include Milkweed Beetle (*Labidomera clivicollis*), Monarch Butterfly (*Danaus plexippus*), Oleander Aphid (*Aphis nerii*) and Tiger Moth (*Cycnia inopinatus*).

**Harvesting Peanuts** – I have been waiting to harvest this crop all summer. One of my favorite snacks, peanuts are an easy and very nutritious crop to grow. They are also great fun to harvest because you do not know what you have until you turn the soil over.

Peanuts (*Arachis hypogaea*) are ready for harvest between 120 to 150 days after planting. Generally, we start harvesting when the foliage begins to turn yellow. If the first frost comes before the leaves start to turn, dig your crop before, or immediately following the frost.

Harvesting peanuts is fairly simple. Dig up the plants with a spading fork and carefully remove the entire plant, shaking off the loose soil. We want to let the pods dry on the vine to cure. Commercial growers leave the upturned plants right in the field for about a week, and then collect the pods with a specialized combine. Some gardeners begin the curing process by leaving the plants to dry upside down on the row for a day or two. If rain is in the forecast, they move the plants indoors for drying.

We have an active and hungry population of squirrels and mice in the gardens, and I do not trust the peanut crop to these critters. So I will bring our crop indoors to cure. You can lay the crop out on the floor to dry, but beware of mice. Another option is to hang the vines from twine. Cure the crop in a warm, dry shed or garage for 1 to 2 weeks. At that time, pull the peanut pods from the pegs. Put the peanuts in a bucket or washtub and stir them around by hand so that they rub against each other to shake off most of the remaining soil. Continue to air dry the peanuts for an additional 1 or 2 weeks. Once dried, place the peanuts in mesh bags and store them in cool, well-ventilated place until you are ready to roast or boil the nuts. Some of the raw peanuts may be left in the shell and saved for replanting the following spring. Store these in the same way as those saved for eating.

**Native Splendor Garden** – This week in our Native Splendor Garden we have those late bloomers that carry us into fall. One of my favorite plants, blooming in all its glory is the Narrowleaf Sunflower (*Helianthus angustifolia*). Like other sunflower species, this perennial was domesticated by Native Americans who used the plant for dyes, food and medicinal purposes. It has much smaller seeds than other sunflowers, but is still a favorite of birds and rodents. The flowers also attract butterflies and other insects.

Narrowleaf Sunflower is a very low maintenance plant. Another common name for this helianthus is Swamp Sunflower, and though the plant does grow naturally in bogs and marshes, it
will perform well in any sun-soaked space. The sunflower blooms very late in the season, primarily in the month of October, but the spectacular display is worth the space it occupies the rest of the year. The fine textured foliage creates a lovely backdrop for earlier blooming species. Narrowleaf Sunflower will reach a mature size of four feet wide by up to six feet tall.

Another wonderful fall bloomer is Autumn Sage (*Salvia greggii*). Despite its name, Autumn Sage has a very long bloom season, flowering off and on from spring until fall. But it always puts on a wonderful late-season display. The species is normally red-flowered, but numerous cultivars are available with a wide range of flower colors from pale yellow to orange, fuchsia to purple, red-violet, burgundy and white. This cultivar is called ‘Pink Preference’ and is an Oklahoma Proven plant.

Autumn Sage is valued for its adaptability to range of soils, its long bloom season, and its heat and drought tolerance. It has small, dull pale green, aromatic leaves and varying growth habits from very upright to sprawling. To keep plants looking dense and full, prune stems back to six inches high each spring. Or you can allow Autumn Sage to sprawl for a more natural appearance.

We have several vines growing on our bridge. The wisteria provides early season color, followed by the honeysuckle. For fall color, the berries of American Bittersweet (*Celastrus scandens*) are unbeatable. American Bittersweet is a slower growing vine, ours is fairly immature, but will eventually grow to 20 or 30 feet. The beautiful orange berries provide excellent winter food for wildlife; however, all parts of the plant are poisonous to humans if ingested.

American Bittersweet blooms mid-summer, but the flowers are rather inconspicuous, the ornamental value lies in the showy fruits in the fall and the rich green foliage. American Bittersweet will grow in full sun to part shade and prefers drier sites, be careful not to overwater this plant.

I am also delighted to see the Drummond’s Aster blooming in the fall. The numerous, tiny lavender flowers seem to me a protest of the seasons, as if to say, I won’t go without a fight. It is such a prolific bloomer it seems to behave almost as an annual, blooming its heart out, but is in fact perennial. These dainty flowers change like the autumn leaves, their centers starting yellow and turning a dusky purple as they age.

Drummond’s Aster is a tough plant that we find growing in a variety of soils and light exposures. It performs equally well in full sun to full shade; and will brighten up any shaded fall garden.

**Vegetable Garden Chores: Planting Cover Crops** – Healthy soils are the key to a productive garden. A healthy soil is rich in organic matter, active with microorganisms, and full of nutrients. The most effective way we can improve soil health is by adding organic matter to our gardens. Organic matter helps maintain the pH balance of the soil, adds nutrients, and improves soil structure.

Cover cropping is a sustainable way we can build, protect, and enrich soils. Cover crops are grown with the sole purpose of being turned back into the soil. After being incorporated into the soil, the decomposing plants add organic matter back into the soil, providing essential elements, improving nutrient availability, water holding capacity and soil structure.

Legumes make excellent cover crops because of their ability to fix atmospheric nitrogen into the soil. We are sowing Austrian Winter Pea (*Pisum sativum*) into our empty beds as a winter cover. Austrian Winter Pea is a cool-season, annual legume with good, nitrogen-fixing capabilities.
This low growing pea produces long vines, with hollow, slender stems reaching 2 to 4 feet long.

Austrian Winter Pea is sown at a rate of 2 to 4 pounds per 1,000 square feet. Close plant spacing enhances winter survival by providing mutual protection from the cold. Seed is sown to a depth of ½ to 1 inch. The pea grows through the fall and resumes growth early spring. Plants are incorporated into the bed in spring before setting seed.

**Announcement** – Dr. Mike Schnelle with the OSU Department of Horticulture and Landscape Architecture will host a Tree Care Conference for advanced gardeners and tree care professionals on Wednesday, November 3 at The Botanic Garden at OSU. Join regional experts for a day of arboricultural education. For more information, contact Stephanie Larimer at 405-744-5404.

---

**Artichokes** – All of us here at the studio have been eagerly awaiting harvest of our artichokes. Artichokes (*Cynara cardunculus*) are related to thistles and we can see some resemblance in the foliage. I find the artichoke plant to have a very strong exciting architecture. But what I am really interested in are the flower buds. This is the portion of the plant that we eat. The buds are ready for harvest when the top bud is about 2 to 4 inches in diameter and still fairly compact. We do not want the flower buds to open. Buds should be cut with about one-and-a-half inches of stem. If the warm weather holds long enough, we may still get a few smaller buds from lower, lateral branches.

We have planted a perennial artichoke, but they are a bit tender in our region. These plants will require some protection during the winter. Once we complete harvest, a thick layer of leaves and straw will help to protect the crown. Today we will harvest another crop from our vegetable garden, continue work on our hosta garden, and plant blueberries in our new edible Ornamental Bed.

**Planting Blueberries** – Fall is an excellent time to plant trees and shrubs. Planting in the fall allows roots to grow all autumn and into the winter months without having to supply large amounts of nutrients and water to actively growing vegetation. In spring, they will resume growth as soon as the soil temperature reaches 5 degrees. This long establishment period gives plants a chance to establish a healthy root system before the heat of summer sets in.

The most important consideration when growing blueberries is soil. Blueberries require a low soil pH, and often we need to amend the soil to accommodate these plants. In a mixed planting it can be difficult to maintain the ideal soil pH for all plants. We need to pay special attention to our blueberries in order to maintain an acidic growing environment by fertilizing regularly with an acid fertilizer. In preparation of planting, I have added sulfur to lower the soil pH just in the area where the blueberries will be established. The amount of sulfur needed to adjust pH varies with soil type, for our loamy soil, 2 to 3 pounds of sulfur per 100 square feet is needed to lower the soil pH by one unit.

As with any planting, dig your planting hole 2 to 3 times as wide as the container. Because blueberries are acid-loving, we place a half-gallon of peat moss in the bottom of the planting hole. Mix the peat in with the native soil around the plant. It can be difficult to evenly wet peat moss; wet it before you get started. This will help with more even settling once we back fill our hole and prevent air pockets. Set the blueberries at the same depth they are planted in the
container.

It is important to irrigate immediately after planting and keep the blueberries well watered as they establish. Use acidic mulch such as pine bark to help conserve soil moisture.

I planted the blueberries adjacent to a berm in our edible ornamental garden. The blueberry plants will make a terrific backdrop to lower-growing edibles in the foreground. Several of the plants I wish to include in the edible landscape require a well-drained soil, so we created this berm to provide a suitable planting site. Many of our Mediterranean herbs require this well drained soil. Plants such as lavender, rosemary and sage are well adapted to the dry rocky slopes and suffer when their roots are too wet. The elevated bed will help prevent this problem, as will careful irrigation. I also plan to establish edible bulbs, including tulips and saffron crocus, which will likewise benefit from the drier soils. Many of our bulbs fail to perennialize because the bulbs rot in irrigated summer beds. It is my hope the dry berm will help our tulips return each year.

**Designing a Hosta Garden: Path Installation** – Today we are laying out the pathway in our hosta garden. Many different materials can be used when installing a path or walkway in the landscape. Cost is usually an important factor in selecting materials. Mulch and gravel are the cheapest path materials you can buy and they easy to install. These paths can range from very casual to formal depending on the design and edging materials used. Materials include bark, wood chips, washed stones and crushed gravel or shells. Mulch paths look at home in natural settings while gravel paths can take on a more formal appearance and are longer lasting.

Stepping-stones offer another inexpensive and easy-to-install material for pathways. Although stone in general can be expensive, a little goes a long way when it comes to installing a stepping stone path because we are spacing the stones out along the walkway. We will use flagstone for our path. Stones that are flat and about 18 inches across and 2 inches thick are ideal. You can also make attractive stepping stone paths using 12-inch square or round concrete patio blocks.

When laying out a walkway, traffic and use will dictate how wide the path should be. A four-foot path allows two people to walk side by side. Smaller side paths such as this one are typically 18 inches to 2 feet in width. I’ve selected pieces of flag stone that are around 18 to 20 inches wide. I tried to find the most natural looking forms available, though some of the pieces are a bit rectangular. I will inter-mix rounded and rectangular pieces to avoid having a very structured appearance. I want the pathway to feel very natural.

Arrange stones so the distance from the center of one to the center of the next one is 20 to 24 inches. This is the average distance of our gait. I am setting the stones on the soil surface and will fill in between the stones with mulch once they are in place. I don’t want to set them too deep, because the mulch will wash over the stepping stones. In some situations, you will want to recess the stones into the soil. For example, if you lay a stepping stone pathway through a turf area, the stones will need to be set so that the top of the stepping stones are about 1 inch above the soil level. This will give you a dry place to step while still allowing you to run a lawn mower over the path.

Since there’s distance between the stones, you don’t have to worry about leveling them with one another. However, if one stone is considerably higher than those adjacent to it, you can set it into the ground. Set the stone in place and mark the edge with a spade or trowel. Then lift the stone and dig out a little soil. Replace the stone and backfill for leveling if necessary. You may also have to dig beneath portions of the stone to level individual pieces.
Now that we have the stones in place I am ready to spread mulch. It may look like I am adding too much mulch, but it will settle and be level with or just below the stones. Use the handle of a broom to tamp it in place if you wish. You can also add plants between the stepping stones. There are a number of perennial plants that can withstand foot traffic. Depending on the sun exposure of your walkway you may include Blue Star Creeper (*Isotoma fluviatilis*), Purple Mazus (*Mazus reptans*), Bugleweed (*Ajuga hybrids*) or Stonecrop (*Sedum species*).

**Vegetable Garden Chores: Harvesting Sweet Potatoes** – Sweet potatoes are warm-season plants and are very sensitive to cold temperatures. We want to dig the crop of sweet potatoes before or just after the time of the first frost in the fall. Sweet potato roots continue to grow until frost kills the vines. Roots can be left in the ground until the time of a frost; however, an extremely hard frost can cause damage to roots near the surface. And if the soil temperature drops to 50°F or lower, chilling injury to the roots may result. If a frost occurs before you harvest, cut the vines to prevent decay spreading from the vines to the roots and dig sweet potatoes as soon as possible.

Before we harvest our sweet potatoes we need to cut out our okra plants. In most of our vegetable beds, I cut the stalks from the roots, leaving the roots in place in the soil. This reduces the amount of disturbance to our soils, which can reduce erosion. It also leaves valuable organic matter in place to decay in the soil. I use healthy, pest free stalks and foliage as a mulch and ground cover in planting beds. These will decay over time, adding nutrients back to the soil. The sweet potato vines also make an excellent ground cover and I will cut these and lay them over planting beds as mulch. The garlic and shallots we planted last week will benefit from this insulating layer during the winter months.

To dig the sweet potatoes, use a spading fork or stout shovel and be careful not to bruise, cut or otherwise damage the roots. Dig below the level of the ridge and gradually move closer toward the plants, removing soil until the fat roots are exposed. Carefully dig under these roots to gauge the depth as you dig down the row.

Care should also be taken during handling to avoid skinning and bruising the roots. Even a small wound can easily become infected with decay organisms. Dropping potatoes into baskets and buckets can cause damage. Line containers with rags, newspaper or other soft material to avoid scratching the roots. Do not store badly injured or diseased roots. Discard these or use them immediately.

We do not want to store our potatoes with large amounts of soil clinging to the roots, but sweet potatoes are easily damaged during the washing process when freshly dug. Allowing roots to dry and cure before removing excess soil will help in avoiding unnecessary damage. We begin the curing process by allowing our sweet potatoes to dry in the sun for two to three hours.

After they have dried, we move them indoors for curing. The flavor and storage quality of sweet potatoes is greatly improved by curing at warm temperatures. During the curing process starch is converted to sugar. Ideally we cure sweet potatoes by holding them for about 10 days at 80-85°F and high relative humidity (85-90 percent). Most of us do not have areas with these ideal conditions in our homes. A good place to cure sweet potatoes in the home is near your furnace. The temperature will more likely be somewhere between 65 and 75°F. At this temperature, the curing period should last 2 to 3 weeks. To maintain the required high humidity for curing, stack storage crates or boxes and cover them with paper or heavy cloth.
Once the sweet potatoes are cured, move them to a dark location where a temperature of about 55 to 60°F can be maintained during storage. Sweet potatoes are subject to chilling injury, so keep them out of the refrigerator. Outdoor pits are not recommended for storage because the dampness encourages decay and temperatures can be too cool. Good results can be obtained by wrapping cured sweet potatoes in newspaper and storing them in a cool closet. Sweet potatoes treated this way will store for several months. Remove any roots that show signs of deterioration or decay.

**What makes sweet potatoes crack and split?** Heavy rains or too much irrigation during the final 3 to 4 weeks before harvest may cause the roots to split, especially if conditions have been dry for a period before late water application begins.

**What causes sweet potato roots to be long and stringy?** This condition is caused by high fertility. The edible portion of the sweet potato plant is a storage root. Luxurious growing conditions cause vigorous vinne growth and result in poorly-developed stringy roots. Maturity and variety also affect the texture of sweet potatoes.

**When I harvested my sweet potatoes, they were rough and the surface was cracked.** This can be caused by two things. One is fluctuating moisture levels within the soil; and, other is root knot nematodes. If nematodes are suspected, check the part of the root closest to the plant for small necrotic lesions in the sweet potato. If nematodes are found, use the resistant variety Jewel in future plantings.

**After I dug my sweet potatoes, I found as much as one-half of each sweet potato covered with a black, necrotic scab which decays rapidly.** This is sweet potato scurf and is caused by a soil-borne fungus. It is controlled by growing sweet potatoes in acid soil. Also, the use of disease-free slips and rotating crops helps prevent the disease.

**Cooking with Barbara** – Barbara Brown, Extension Food Specialist, prepares a three pepper stew.

**Three Pepper Stew**

- 1 tablespoon vegetable oil
- 1 medium onion, chopped
- 2 cloves garlic, minced
- 1 red bell pepper, chopped
- 1 Anaheim chile, finely chopped
- 1 poblano chile, finely chopped
- 2 cups tomato sauce
- 1 cup water
- 1/2 teaspoon cinnamon
- 1 teaspoon cumin
- 2 cups peeled butternut squash cut into 3/4-inch cubes
- 1 (14.5 ounce) can yellow hominy, drained and rinsed
- 1 (15 ounce) can pinto beans, drained and rinsed
- 1 (15 ounce) can black beans, drained and rinsed
- 1 cup corn
- 2 tablespoons fresh lime juice
- 1 tablespoon minced cilantro or parsley
- 6 tablespoons light sour cream
1. Heat vegetable oil in large pot or Dutch oven over medium heat. Add onion, garlic, bell pepper, Anaheim and poblano chiles. Cover, cook for 10 minutes, stirring often.
2. Add tomato sauce, water, cinnamon and cumin. Bring to a simmer, cover, cook 10 minutes.
3. Add squash; cover, and cook for 10 minutes.
4. Add hominy, pinto beans, black beans and corn. Cover, simmer 10 minutes or until squash is tender and beans are heated through.
5. Stir in lime juice and cilantro. Top each serving with 1 tablespoon light sour cream.

Serves 6.

### Nutrition Facts

<table>
<thead>
<tr>
<th>Serving per recipe: 6</th>
<th>Calories: 290</th>
<th>Calories from fat: 36</th>
</tr>
</thead>
<tbody>
<tr>
<td>% Daily Value</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total Fat</strong></td>
<td>4g</td>
<td>7%</td>
</tr>
<tr>
<td>Saturated Fat</td>
<td>1g</td>
<td>3%</td>
</tr>
<tr>
<td><strong>Cholesterol</strong></td>
<td>1mg</td>
<td>0%</td>
</tr>
<tr>
<td><strong>Sodium</strong></td>
<td>689mg</td>
<td>29%</td>
</tr>
<tr>
<td><strong>Carbohydrate</strong></td>
<td>53g</td>
<td>18%</td>
</tr>
<tr>
<td>Dietary Fiber</td>
<td>12g</td>
<td>47%</td>
</tr>
<tr>
<td><strong>Protein</strong></td>
<td>12g</td>
<td>24%</td>
</tr>
<tr>
<td>Vitamin A:</td>
<td>114%</td>
<td></td>
</tr>
<tr>
<td>Vitamin C:</td>
<td>185%</td>
<td></td>
</tr>
<tr>
<td>Folacin:</td>
<td>21%</td>
<td></td>
</tr>
<tr>
<td>Calcium:</td>
<td>9%</td>
<td></td>
</tr>
<tr>
<td>Iron:</td>
<td>18%</td>
<td></td>
</tr>
<tr>
<td>Potassium:</td>
<td>25%</td>
<td></td>
</tr>
</tbody>
</table>

Barbara Brown, Food Specialist
Oklahoma Cooperative Extension Service

---

**Oklahoma Gardening** Information Sheet (#3715)

**OETA air date:** October 9 and 10, 2010
**OETA airtime:** Saturday 11:00 a.m., Sunday 3:30 p.m.

**Designing a Hosta Walk** – This corner of the garden is dominated by a magnificent walnut tree. The tree provides excellent shade and has a beautiful form; however, planting beneath the walnut tree can be a little tricky. Walnuts produce a chemical called juglone in the roots. Juglone can be toxic to many plants. This is how walnut trees manage competition from other plants, ensuring they have ready access to water and nutrients. That is wonderful if you are a walnut tree trying to survive, but not so good if you are a gardener trying to beautify the space beneath a walnut tree.

Luckily, there are many plants tolerant of juglone and therefore ideal for planting beneath walnuts. These include:

- Perennials such as *Hosta* species; Solomon’s seal (*Polygonatum commutatum*) and Lamb’s ear (*Stachys byzantine*)
- Understory trees and shrubs such as Japanese Maple (*Acer palmatum*) Redbud (*Cercis canadensis*) and Rose of Sharon (*Hibiscus syriacus*)
- Annuals including Fibrous *Begonia* and *Zinnia* species

We have a well established bed of hostas beneath our walnut, which are thriving despite the juglone. Though the plants are performing well, the planting itself lacks structure and organization. The bed is rather deep and only the edge details are easily viewed. We want to
invite visitors into this garden space by adding a narrow path through the bed. This will allow
visitors to walk among the hosta cultivars and see more of them up close. We also want to create
cohesion in the bed, build structure, as well as increase the diversity of hosta cultivars.

With our goals clearly established, we need a few simple tools to start planning the design. We
often start our design process with a stack of containers and a hose. The containers will serve as
place holders, and the hose will come in handy to lay out the pathway.

A pathway will be used to divide the large space into smaller sections. When planning a
walkway, start by simply walking the path where you think the trail should lie. This helps to
identify potential obstacles that might be in the way. Walk several different paths and pay
attention not only to what is in the bed surrounding you, but also to other views you might
capture from the pathway, particularly at the points where the path intersects another walkway.
In this case, we have a very open area, so the views will not differ significantly between different
possible paths. In a larger space, you might be surprised by the difference a few feet can make
with regards to interesting views. Look for natural patterns in the landscape that you might
mimic or follow.

Once you have an idea where you want the path, use a hose to lay the path out. This way you can
look at it from outside the bed to see how it appears visually. Walking a path and viewing a path
from outside the bed are two very different experiences. Ideally, as you are looking down a path,
you want it to disappear from view. When a path slips out of site it draws the viewer in, we want
to see what lies beyond our line of vision. To achieve this, we need to include a turn or curve in
the pathway. Use a serpentine or curvilinear pattern with soft gentle curves, though in a more
formal setting you may wish to use rectangular forms.

Locate the main run of the pathway about two-thirds to three-fifths the depth of the bed. This
will create three main planting beds in the garden: an area viewed from outside along our main
path, and two areas viewed from either side of the new pathway. Think of the section that lies
between the existing path and the new pathway as a two-sided bed.

As we lay out our pathway we need to make a number of small decisions. How many entrance
points will there be? Do you want this path to be isolated, or should you connect it to another
area of the garden? For example, we have a natural opening between the magnolias and our
holly hedge. This could be used to cut a pathway between two areas of the garden. Instead, we
have chosen to block the opening and create a more enclosed space beneath our walnut. As you
identify the number and locations of the connection points, consider movement through the
garden, as well as the adjacent views.

A critical point in laying out the path is the junction between two pathways. A common mistake
is to bring two paths together at an angle. This creates a narrow wedge on one side, which is
very hard to plant in or to mow if we had a grassy area here. Also, because the space is so
narrow, people tend to start cutting that corner when walking, and the bed or turf in this narrow
strip becomes worn. Instead, pathways should meet at right angles. This eliminates the hard to
manage area. Right angles are used whether your path is serpentine or linear.

We also want to add a secluded seating area in the bed. Look for a natural recess that might
make a good sitting area. In landscapes, corners often serve as the ideal spot for a bench. Our
seating area will be set at the end of a short spur off the path.

Now you want to add a little structure to the garden. Because hostas are so low growing, the path
does not disappear from site despite its curvilinear form. A few well-placed shrubs can enhance the sense of mystery by blocking the line of vision down our path. For this, set out containers to mark the critical locations for planting shrubs. A small mass of shrubs will also be useful in defining the two separate spaces in the larger section of our bed. The walnut tree helps create a good dividing line between the two sections. Our secluded seating area is not very secluded and again, shrubs can help enclose the area more completely. Finally, the edges of our hosta garden are not well defined. Shrubs can be used here to enclose our garden space.

The last structure to add is the understory tree plantings. This area reminds me a great deal of woodland walks. But in the woods, we tend to have our upper tree canopy, a lower understory tree canopy, and then our shrub layer, and finally our ground layer. We can add the missing understory layer by placing a few low-growing trees in the bed. Mark their locations with flags and make sure these are not too close to the base of our walnut tree.

We will continue to work on our hosta bed over the next few weeks. In the meantime, we need to take an inventory of what cultivars are present and note the relative size of each cultivar. This will help in placing them in the new design. We also need to do a little research to find which additional cultivars we might like to add to the planting.

**Planting Garlic and Shallots** – Garlic (*Allium sativum*) is a relative of the onion and has been grown for thousands of years. Of course, it is popular around the world, and I simply could not imagine my own kitchen without the pungent odor of garlic. For those of you who like garlic as much as I do, you may wish to test out a few different varieties. Though we only usually see one or two different types of garlic at the supermarket, there are actually quite a range of varieties. OSU factsheet [HLA-6032: Vegetable Varieties for the Home Garden in Oklahoma](https://www.okstate.edu/depts/hla/factsheets/HLA-6032) lists a number of varieties that will perform well in Oklahoma. You can also talk with growers at your local farmers market to find out what varieties do well in your part of the state.

Our raised beds are perfect for planting garlic. Heavy clay soils can cause misshapen bulbs, and our beds have a good, light soil. Mix compost into clay to lighten the soil. Good drainage is also important for garlic production.

When we plant garlic instead of using seed we plant sections of the garlic bulb called cloves. Cloves can be planted September through October; however, October is best as the cooler temperatures begin to set in. Garlic planted in the fall has an advantage over spring-planted garlic in that the root system is well established when the warm temperatures arrive in spring. Garlic really does not take up a great deal of space, so it makes a wonderful addition to any garden. If you don’t have a lot of space, stick the garlic in among your herbs or perennials. Its tall slender leaves will look like they belong just about anywhere. I am setting cloves 4 inches apart and 2 inches deep. As you plant, make sure that you orient the bulb properly, setting them with the root scar or flattened tip down and the pointed tip up. You can dig trenches or use a dibble to make holes where you wish to set the cloves. Make sure the holes are deep enough that the cloves can be covered by two inches of soil. Take the time to ensure that each bulb remains in the upright position as you fill the soil in around it. This will keep the necks of the bulbs straight. Cover your cloves to a depth of 2 inches and keep them moist, but not too wet. Over watering can lead to poor bulb development and mold problems.

I am also planting shallots, which we cultivate in much the same manner as garlic. Shallots require wider spacing than garlic; I am setting them 8 inches apart. The plants will form a cluster of 5-12 bulbs around the original bulb and these will spread out requiring more space between plants. If the shallots you purchased are in clumps, divide the clumps into individual sets or
bulbs before planting. Shallots are planted shallow, with the tips just below the soil surface. Like garlic, you want to set the bulbs with the root scar facing downward. Shallots are easy to grow and you can certainly save a lot of money by producing your own shallots instead of purchasing them at the grocery store.

Both our garlic and shallots will be ready for harvest in early June next year. Until then, keep the beds weeded and watered. You can find more information on fall vegetable gardening in OSU Extension Factsheet HLA-6009 Fall Gardening.

**New Plants from the Garden Writer’s Conference** – Last week we took a look at some of the tools and products I brought back from the Annual Garden Writers Association meeting in Dallas; today I have a few new plant introductions to share. I always look forward to the trade show where I can have a sneak peak at some of the new plant cultivars for the next season.

My friend Nicholas from Monrovia Nurseries sent a number of plants home with me including this great Golden Ruby Barberry (*Berberis thunbergii* ‘Goruzam’). The unique foliage colorations combines the best of the reds and yellows, with striking coral-orange foliage that is accented late in season with a golden margin. The compact shrub reaches a mature size of only two feet tall and wide. It makes a great landscape plant for mass plantings or an eye-catching color contrast.

I have been experimenting with Indian hawthorns, which are somewhat marginal in our climate and I was interested when Nicholas shared this Yedda Hawthorn (*Rhaphiolepis umbellata* ‘Southern Moon’). This selection shows exceptional disease resistance combined with a compact, self-mounding habit. Plants reach five to six feet tall and make an excellent foundation to a mixed border. The dark green, glossy foliage and wavy margins add interest. In the spring, the plant will be covered with an abundance of white flowers.

I tend to be a rose skeptic due to all of the diseases commonly afflicting rose bushes. Yet, I am very hopeful that the disease resistance claims for this new line of roses called Storybook Roses (*Rosa* hybrid ‘Showboat’ [red] and ‘Little Women [pink]’) proves to hold true in Oklahoma. I will certain plant out a number to see how well they perform.

We are establishing an Echinacea bed in the studio where we will display many different cultivars of coneflower all together. One of the new cultivars I received in Dallas to add to this collection is called ‘Raspberry Truffle’. We met the breeder of this plant, Arie Blom, a few years back in Portland, Oregon when he shared with us the Echinacea cultivars ‘Coconut Lime’ and ‘Hot Papaya’. He has developed another lovely double Echinacea, ‘Raspberry Truffle’, with salmon-pink blooms on chocolaty stems. The soft, yet dense blooms are long lasting, fading to a coral pink as they age. The cone or center of the bloom begins chocolate brown and unfurls to reveal a very double, button top in the same salmon color as the ray petals.

Also from the breeding lines of Arie Blom, comes ‘Marmalade’. The color of the blooms is two toned. On some days, and in different light, it will look more tangerine-orange, but on most days it will look just like fresh marmalade from the jar. The plants are vigorous and healthy with strong stems and multiple buds per stem. Both echinaceas are new introductions for 2011 from Plants Nouveau.

It seems each year at Garden Writer’s I am introduced to a new ninebark. This is a species of plant that offers wonderful maroon foliage. The ‘Diabolo’ ninebark was an Oklahoma Proven plant in 2006, we will see if this new cultivar from Bailey Nurseries performs as well. This is ‘Little Devil’ or 'Donna May' Ninebark (*Physocarpus opulifolius*). ‘Little Devil’ is quite
compact as compared to other ninebark selections, reaching only 3 to 4 feet tall and wide in the landscape and making it useful for small urban gardens. This low maintenance plant requires very little pruning and is free from pest and disease problems. While the plants are drought tolerant and reportedly tolerate full sun conditions, I prefer to protect all ninebarks from afternoon sun.

I am planning an edible ornamental garden for next year and was very excited to see this ornamental Blueberry Bush called ‘Bountiful Blue’ (*Vaccinium corymbosum*). This is a cultivar from Monrovia that not only produces an abundance of delicious berries, but also has striking ornamental features including the soft, blue-tinged foliage. The foliage has striking fall color and in spring it will be covered with a profusion of white flowers before setting fruit. This is a southern high bush blueberry that will tolerate our hot summers with a good irrigation schedule.

**Cooking with Barbara** – Barbara Brown, Extension Food Specialist, prepares a chopped main dish dinner salad.

**Chopped Main Dish Dinner Salad**

- 1/2 cup buttermilk
- 3 tablespoons light mayonnaise
- 2 green onions, thinly sliced, reserve green leaves
- 1 clove garlic, minced
- 1/4 teaspoon salt
- 1/4 teaspoon black pepper
- 1 head romaine lettuce, chopped
- 3/4 pound leftover chicken, cubed
- 2 cups seedless red grapes, halved
- 1 cup frozen peas, thawed
- 1/2 cup reduced fat cheese cubes

6. In a large measuring cup or medium bowl whisk together buttermilk, mayonnaise, white part of the green onions, garlic, salt, and pepper. Set aside.
7. In a large bowl layer chopped romaine, meat cubes, halved grapes, frozen peas, cubed cheese and reserved green onion leaves.
8. Add dressing and gently toss salad to coat. Serves 4.

**Nutrition Facts**

<table>
<thead>
<tr>
<th>Nutrition Facts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Servings per recipe: 4</td>
</tr>
<tr>
<td>Calories 301</td>
</tr>
<tr>
<td>% Daily Value</td>
</tr>
<tr>
<td>Total Fat 9g</td>
</tr>
<tr>
<td>Saturated Fat 3g</td>
</tr>
<tr>
<td>Cholesterol 66mg</td>
</tr>
<tr>
<td>Sodium 412mg</td>
</tr>
<tr>
<td>Carbohydrate 26g</td>
</tr>
<tr>
<td>Dietary Fiber 5g</td>
</tr>
<tr>
<td>Protein 30g</td>
</tr>
<tr>
<td>Vitamin A: 83%</td>
</tr>
<tr>
<td>Calcium: 18%</td>
</tr>
<tr>
<td>Iron: 18%</td>
</tr>
</tbody>
</table>

Barbara Brown, Food Specialist
Moving Plants Indoors for Winter – If you brought houseplants out into the summer sunshine, you want to start thinking about preparing them for their return journey indoors. As a rule of thumb, you will want to move houseplants indoors around the time that the outside temperature is about the same as the indoor temperature. This will give plants a chance to adjust to the indoor climate before you turn on the heat and avoid unnecessary cold damage to tropicals.

Moving a plant directly from its perch on the sunny patio to its winter home in the dark living room is not advisable. You will shock the plant with the drastic change in light conditions. Instead, acclimate the plant or slowly adjust it to lower light levels. Do this by moving plants to more and more heavily shaded areas over the course of a week before finally bringing it inside.

Tools from the Garden Writer’s Conference – I recently attended the Garden Writer’s Association Annual Conference in Dallas, Texas. As always I returned with exciting new plants and tools to test out in our studio and to share with all of our viewers.

Corona Tools has some interesting hand tools. Many of their products are designed to have multiple functions such as the weeder which has a narrow head that also works well for digging narrow holes, a serrated edge for cutting roots, and a forked tip for easy weeding. The e-grip cultivator has a dual purpose head designed for both cultivating and weeding. Both tools have ergonomic handles to improve comfort and range of use.

Another great weeding tool that is not new to my tool shed, but may be new to some viewers is the Cobra Head. Noel Valdes who founded the company describes the Cobra Head as a steel fingernail that becomes an extension of your hand. The tempered steel blade is very strong and works as a cultivator to break up hard ground. It is also useful to weed, dig, furrow, transplant, and harvest.

Every summer it seems when my kitchen is full of fresh fruits and vegetables I have a fruit fly outbreak. Last year, my friends at ConTech gave me a Fruit Fly trap to try, and I was very impressed at how well it brought my fruit flies under control. The trap uses a natural attractant to draw fruit flies into the trap, where they become trapped on a disposable sticky pad. The trap is non-toxic, effective, and 100% pesticide free, making it safe to use around children, pets and food.

As I opened our show today we talked about moving houseplants back indoors for the winter. One of the greatest limitations to plant growth indoors is the low light. Fertile Earth has come up with a product to help us bring a little sunshine to our plants indoors. The LiteStik uses LED lights to provide supplemental lighting to houseplants. The stake comes with extensions so that you can adjust the height and the head is flexible allowing you to light from different angles above or below the foliage. The LiteStik plugs into the wall and has an automatic sensor to turn on and off as the plant needs light.

This is just a sampling of the many innovative products available to gardeners. Visit your local
garden center for more great tools. Next week we will take a look at a few new plant cultivars that I brought back with me from the show.

**Native Splendor Garden** – Many of our fall blooming native plants are very familiar to us, such as goldenrod, asters and *Euphorbia marginata* or Snow-On-The-Mountain. Snow-on-the-Mountain flowers in early fall. Much like their relatives the poinsettias, what we call flowers are actually the showy white and green bracts surrounding tiny inflorescences. This is a native annual that reseeds itself in the garden. A number of less familiar natives make wonderful companions to the better known fall-bloomers.

Rough Blazing Star (*Liatris aspera*) is a beautiful member of the Daisy Family. The flowers lack ray florets or what we usually call "petals". This native perennial has thick flower stems with button-like clusters of pastel purple flowers lining them. You will find butterflies visiting the flowers for nectar. Rough Blazing Star makes a nice cutflower because a number of blooms are open at the same time.

Towering above our Rough Blazing Star is Yellow Ironweed (*Verbesina alternifolia*). This plant is a show-stopper in the fall when it is covered with hundreds of golden flowers on tall stems. It is also a favorite stopping ground for butterflies and is frequented by migrating monarchs. The seed is fed upon by a number of birds.

Across the bridge we have another great Blazing Star. This one is called the Elegant Blazing Star (*Liatris elegens*). The flowers are quite a bit different from the Rough Blazing Star, with spike-like racemes standing like wands with soft purple flowers. The Elegant Blazing Star blooms mid-summer into fall. The disk flowers have white stamens protruding from the centers, providing a bicolor effect. Like the Rough Blazing Star, Elegant Blazing Star also attracts butterflies.

There seems to be a color scheme to the fall garden – many yellows and blues. Azure Sage (*Salvia azurea* var. *grandiflora*) is the hardiest Salvia species occurring in North America. In late summer and fall their tall stems are covered in vibrant medium to deep blue flowers. You can control the bloom height of the Azure Sage by cutting the stems back to 12 inches in late spring and again to about 16 inches in mid-summer if needed. In addition to attracting butterflies, Azure Sage is also a great plant for hummingbirds.

**Feeding Hummingbirds in Fall** – Many people are under the mistaken idea that their hummingbird feeders must be taken down on or around Labor Day, but this simply is not true. This myth is supported by the idea that leaving a feeder up in fall will delay hummingbird migration to wintering grounds. Again, this is not true, leaving your hummingbird feeder up will not stop the hummingbirds from migrating. Hummingbird migration is triggered by changes in the length of the day or photoperiod. By keeping your feeder full, you will provide an additional energy source for those birds departing late in the season.

Hummingbirds consume half their weight in sugars every day. While their natural food source is nectar from flowers, they readily take to feeders. Keep your feeder out until two weeks or so after seeing the last hummingbird in your landscape or until the end of October. This will ensure the hummingbirds have plenty of food available to make the long journey south.

A number of fall blooming plants also provide nectar to hummingbirds. I regularly see the birds visiting the Turk’s Cap (*Malvaviscus arboreus* var. *Drummondii*) planted by my front porch. They also enjoy Salvias such as Pink Preference Autumn Sage (*Salvia gregii* ‘Pink Preference’).
and Black and Blue Anise Sage (*Salvia guaranitica* ‘Black and Blue’). In addition to sugars, hummingbirds will feed on insects in the landscape as a protein source.

**Cooking with Barbara** – Barbara Brown, Extension Food Specialist, prepares a winter squash and apple soup.

### Winter Squash and Apple Soup

- 1 butternut squash, about 2 pounds
- 2 cooking apples such as Granny Smith
- 1 tablespoon canola oil
- 1 large yellow onion, chopped
- 1 teaspoon grated ginger root
- 6 cups fat-free, reduced sodium chicken or vegetable broth
- 1/2 teaspoon dried thyme leaves
- 1/2 cup half-and-half
- 1/2 teaspoon salt
- 1/2 teaspoon pepper
- 1/2 cup light sour cream

7. Peel and seed the winter squash. Cut into 2-inch pieces. Peel and core apples, cut into 2-inch chunks.
8. Heat oil over medium heat in a large saucepot or Dutch oven. Add onion and ginger and sauté until tender but not browned, about 5 minutes, stirring often.
9. Add squash and apple pieces, stir to coat with oil. Add broth and thyme. Bring to a boil then reduce heat, cover and simmer until squash is tender, about 20 to 25 minutes.
10. Remove from heat. Use a hand-held blender, food processor or standing blender to puree soup until smooth. If using a food processor or standing blender, puree in batches.
11. Stir in half-and-half, salt and pepper. Adjust salt and pepper to taste. Reheat over low heat if needed. Serve garnished with 1 tablespoon light sour cream per serving.

Serves 8.

<table>
<thead>
<tr>
<th>Nutrition Facts</th>
<th>Servings per recipe: 8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calories 115</td>
<td>Calories from fat 36</td>
</tr>
<tr>
<td>% Daily Value</td>
<td></td>
</tr>
<tr>
<td>Total Fat 4g</td>
<td>6%</td>
</tr>
<tr>
<td>Saturated Fat 1g</td>
<td>7%</td>
</tr>
<tr>
<td>Cholesterol 10mg</td>
<td>3%</td>
</tr>
<tr>
<td>Sodium 569mg</td>
<td>24%</td>
</tr>
<tr>
<td>Carbohydrate 18g</td>
<td>6%</td>
</tr>
<tr>
<td>Dietary Fiber 3g</td>
<td>10%</td>
</tr>
<tr>
<td>Protein 4g</td>
<td>8%</td>
</tr>
<tr>
<td>Vitamin A: 150%</td>
<td>Vitamin C: 37%</td>
</tr>
<tr>
<td>Vitamin C: 37%</td>
<td>Folacin: 7%</td>
</tr>
<tr>
<td>Calcium: 7%</td>
<td>Iron: 5%</td>
</tr>
<tr>
<td>Potassium: 12%</td>
<td></td>
</tr>
</tbody>
</table>
Oklahoma gardener is a native population of sugar maple found growing in Caddo County in southwestern Oklahoma. The leaves are dark green, deeply lobed and leathery making it more resistant to leaf tatter and scorch. Caddo Sugar Maple is also quite tolerant of high pH soils, extreme heat and drought conditions commonly found in western Oklahoma. It can reach 30’ to 50’ tall and is a beautiful medium to large shade tree. Fall color is variable, but can range from yellow to golden yellow to orange and sometimes red; cultivars selected for brilliant fall colors as well as outstanding performance are available.

- Exposure: Full sun
- Soil: Prefers well-drained soil; tolerant of dry and high pH soils
- Hardiness: USDA Zone 5-9

Tree: Indian Cherry, *Rhamnus caroliniana*.
Indian Cherry is a small tree (or large, multi-stemmed shrub) to 20’ tall with a rounded to spreading canopy. It is native to the eastern, southeastern US making it more desirable over its European cousins. The foliage is dark, lustrous green all summer turning yellow to orange yellow in the fall. Probably its greatest asset is the colorful fruits that develop late summer/fall turning red and then to black as they mature. These beautiful, sweet fruit also attract several species of birds and can be used to make jams and jellies.

- Exposure: Full sun to shade
- Soil: Prefers well-drained soil
- Hardiness: USDA Zone 5-9

Shrub: Koreanspice Viburnum, *Viburnum carlesii*
Koreanspice Viburnum is a small to medium sized shrub offering year round interest. In summer the leaves are dark green, fall color can be wine-red. Flower buds are pink to red opening white or pink in spring omitting a wonderful fragrance. In late summer clusters of red fruit that fade to black invite birds to the garden. Once the shrub has become established it is quite heat and drought tolerant and though it prefers moist, slightly acid soils, and sun to part shade, it is tolerant of high pH soils and wind-swept conditions. It grows from 4’ to 5’ high and just as broad. Valued for its fragrant flowers, this shrub can be used as a foundation planting, specimen, or incorporated into a mixed border. Several improved cultivars are available.

- Exposure: Sun to part shade
- Soil: Moist, well-drained
- Hardiness: USDA Zone 5-7

Perennial: Toad Lily, *Tricyrtis hirta*
Toad lilies are known for their very unique flowers. Flowers are pale lilac with dark purple spots that appear on upright arching stems late summer to early fall when many other plants are beginning to wind down. Though
flowers are quite unique, they are small so place toad lily in a spot where the flowers can be appreciated up close. The plant grows 2’ to 3’ high and about 2’ wide with bright green leaves. They are excellent for the woodland garden as understory plants where they will be protected by shade. Toad lily is easy to grow, resistant to deer, somewhat drought tolerant, but grow best in moist soils and will even tolerate wet conditions. Several cultivars with varying flower colors are available.

- Exposure: Shade, partial shade
- Soil: Moist, well-drained
- Hardiness: USDA Zone 4-8

**Annual: Silver Falls Dichondra, *Dichondra argentea* ‘Silver Falls’**

‘Silver Falls’ Dichondra was selected for its very low growing, creeping trailing habit and beautiful silvery gray leaves that are shaped like miniature lily pads. Silver Falls is actually a selection of a dichondra species native to southwest Texas and Mexico so it is quite heat and drought tolerant. Growing only 2” tall and 3’ to 4’ wide it is an attractive groundcover, but is also spectacular in a container planting or hanging basket, spilling over a retaining wall, or when used in a rock garden.

- Exposure: Full sun to part shade
- Soil: Well-drained
- Hardiness: Use as an annual

Oklahoma Proven is a plant promotion and recommendation program aimed at identifying superior plants for Oklahoma’s challenging climate. Visit the Oklahoma Proven website for past year’s selections ([http://oklahomaproven.okstate.edu/](http://oklahomaproven.okstate.edu/)). For more information about Oklahoma Proven, contact David Hillock at 405-744-5158 or david.hillock@okstate.edu.

**Bustani Plant Farm** – In this segment we visit our good friend Steve Owens at Bustani Plant Farm. Steve has recently installed a magnificent bed of colorful foliage plants. From a distance, the bed appears to be filled with flowers, but upon closer inspection we see it is colored through foliage. Steve introduces us to a number of colorful foliage plants and discusses aspects of design with Kim. He has set Bronze-leaved Crinum (*Crinum procerum* ‘Splendens’) at the center of the bed, providing a strong, upright structure. Masses of color are repeated along the length of the bed, including the deep purples of **Blackleaf Skyflower** (*Eranthemum nigrum*) and Midnight Train Coleus (*Coleus* hybrid ‘Midnight Train’). Silver is used to provide a resting point for the eye and transition between colors. Silver foliage plants include Helichrysum (*Helichrysum italicum*), Silver Falls Dichondra (*Dichondra argentea* ‘Silver Falls’) and Colchester White Centaurea (*Centaurea cineraria* ‘Colchester White’).

We also visit his display beds where swaths of color have been laid out in mass. This time, flowers add to the mix, softening the landscape with beautiful pastel hues. A Burgundy Cotton Crapemyrtle (*Lagerstroemia indica* ‘Burgundy Cotton’) is underlined by layers of Alabama Sunset Coleus (*Coleus* hybrid ‘Alabama Sunset’) and Dwarf Lavender Pentas (*Pentas lanceolata* ‘Dwarf Lavender’). Southern Polygonella (*Polygonella americana*) and Golden Fleece Goldenrod (*Solidago sphacelata*) add drifts of color. Masses of Pentas, Angelonia (Summer Snapdragon – *Angelonia* hybrid), and The Line Coleus (*Coleus* hybrid ‘The Line’) add color to other beds.

Containers are an important part of the landscape. While many gardeners aim for the three tiered-style of container planting, single specimen containers also hold great impact. And grouping containers can allow for interesting color combinations, such as in the pairing of Maui Artemisia (*Artemisia mauiensis*) and Black Patent Leather Coleus (*Coleus* hybrid ‘Black Patent Leather’).
For an unusual vine, try Red Wing (*Heteropterys glabra*). This compact vine produces clusters of bright yellow flowers followed by showy fruit. The glowing red samaras are produced in trios and overlap temporally with flower production, giving a beautiful show of red and yellow.

Other plants shown at the gardens are White Variegated Alternanthera (*Alternanthera* sp.), Bronze Pilea (*Pilea ‘Norfolk’*), Coleus (*Coleus* hybrid ‘Missy Ann’), Coleus (*Coleus* hybrid ‘Orange King’), Red Pentas (*Pentas lanceolata ‘Graffiti’*), Tricolor Oyster Plant (*Tradescantia pallid ‘Variegata’*), Coprosma (*Coprosma hybrid ‘Cappuccino’*), Ornamental Pepper (*Capsicum annuum*) and Shower of Gold (*Galphimia gracilis*).

### Cooking with Barbara

Barbara Brown, Extension Food Specialist, prepares a cauliflower, broccoli and red pepper salad.

#### Cauliflower, Broccoli and Bell Pepper Salad

- 2 cups cauliflower florets
- 2 cups broccoli florets
- 1 red bell pepper, finely chopped
- 2 tablespoons fresh lemon juice
- 3 tablespoons olive oil
- 1/8 teaspoon chili powder
- 1/8 teaspoon dried oregano
- 1 clove garlic, chopped
- 1/4 teaspoon salt
- 1/4 teaspoon freshly ground black pepper

1. Fill a medium saucepan with 1 inch water. Bring water to a boil, add cauliflower and cook until tender crisp, 4 to 8 minutes. Drain well. Transfer cooked, drained cauliflower to a serving bowl.
2. Refill saucepan with 1 inch water, return to heat and bring to a boil. Add broccoli and cook until tender crisp, 3 to 4 minutes. Drain well. Add cooked broccoli to bowl with cooked cauliflower. Add bell pepper.
3. Whisk together lemon juice, olive oil, chili powder, dried oregano, garlic, salt and pepper in a separate bowl.
4. Pour dressing over vegetables.
5. Cover and refrigerate 1 hour to allow flavors to blend. Stir gently and serve. Serves 4.

#### Nutrition Facts

Servings per recipe: 4

<table>
<thead>
<tr>
<th>Calories</th>
<th>124</th>
<th>Calories from fat 90</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Fat</td>
<td>10g</td>
<td>% Daily Value</td>
</tr>
<tr>
<td>Saturated Fat</td>
<td>1g</td>
<td>16%</td>
</tr>
<tr>
<td>Cholesterol</td>
<td>0mg</td>
<td>7%</td>
</tr>
<tr>
<td>Sodium</td>
<td>160mg</td>
<td>2%</td>
</tr>
<tr>
<td>Carbohydrate</td>
<td>7g</td>
<td>12%</td>
</tr>
<tr>
<td>Dietary Fiber</td>
<td>3g</td>
<td></td>
</tr>
<tr>
<td>Protein</td>
<td>2g</td>
<td>5%</td>
</tr>
<tr>
<td>Vitamin A: 57%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vitamin C: 196%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Folacin: 16%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Calcium: 4%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Iron: 4%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Potassium: 10%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Barbara Brown, Food Specialist
Oklahoma Cooperative Extension Service

---

Announcements –
OSU Horticulture Professor Mike Schnelle will host his annual Ornamentals Plant Materials Conference on October 13 and 14 at the Wes Watkins Center in Stillwater. Join horticulture professionals from Oklahoma, Arkansas and Kansas to learn what’s new in the ornamental plant world. For more information, contact Stephanie Larimer at 405-744-5404 or visit http://www.hortla.okstate.edu/events/pdf/2010plantmaterial.pdf.

Grape Vine Training – Our grape vines are developing at different rates, which is likely a difference between cultivars. During the first growing season, our hopes are the main trunk reaches the top cordon wire and can then be trained along the cordon. We allowed some of the lateral shoots to remain in place this first season to provide additional nutrients and energy to the developing trunk. It is time to remove all of the laterals below the cordon from our plants. We have tied our main trunk to the top cordon wire. Now we need to focus on training the cordons.

The cordons are the arms of the grapevine extending horizontally from the trunk along the trellis wire. Cordons are maintained for years and are the source of new growth each season. Shoots and fruit clusters are produced from the same cordons year after year. For this reason, we want to select the strongest lateral branches for our cordons.

If your grape vine has only recently reached the top wire, secure it to the wire and top it by cutting the tip at the second leaf above the cordon wire. Tipping will force lateral shoots to form. We will later select a cordon from these lateral shoots.

If your trunk has lateral growth at the cordon wire, you can select a shoot to train as your cordon. Cordons should be selected from the strongest lateral shoots emerging from the trunk at or slightly above the cordon wire. Loosely wrap the selected shoot once around the wire and secure it in place. Allow the cordons to continue growing the remainder of the season.

This is also a good time to walk through any other small fruit plantings you have and tie up loose canes. Our raspberries and blackberries are growing very well. At this time, you can tie up any long canes to the trellis wires to help support them through the fall and winter. Tie all of the canes to the same side of the trellis. The plants will produce fruits on these canes next season. Next year, the new growth will be trained to the other wire, as these will provide fruit the following year. Keeping each season’s growth separate will help us in making pruning tasks much easier. At this time, we do not need to prune the brambles; we will prune during the dormant season.

Last week we fertilized our strawberries to encourage fruit bud set. If you are interested in establishing a strawberry planting, you can plant mid-September through mid-October, or wait until February and March for a dormant season planting.

Passionfruits are ready for harvest when the skin begins to wrinkle or the fruits fall to the ground. You will have to beat the squirrels! Enjoy the fruits of your labor!

Air Layering Part 2 – Earlier this season we air-layered roses as a means of propagating large-sized plants. These air layers should have developed roots by this time and are ready for removal from the mother plant. Once the roots have penetrated the moss ball and are visible on all sides, the rooted branch may be removed.
from the parent plant. The rooting time will vary with plant variety as well as the season in which it is performed. Remove the newly rooted plant from the parent plant with a sharp knife or pruning shears, making the cut just below the ball of moss and roots. Carefully remove the plastic wrap.

We can either plant our new rose in a container, or place it directly into a well prepared planting bed. Be very careful not to disturb the roots as you plant. The roots are very tender at this point in development. Staking the plant can help to stabilize the plant and prevent root damage, especially if the rose will be in a windy location.

Our newly planted rose will benefit from a little extra protection and pampering. Place a plastic bag over the top of it to trap moisture in and create a humid environment as the root system establishes. After a week, cut a few holes in the bag to gradually adjust the rose to the normal climate. Cut a few more holes each day until the humidity is the same inside the bag as it is outside, at which time you can remove the bag.

We want to keep our rose under light shade and avoid direct sunlight until the new root system is well developed. Provide shade and adequate moisture until the plant is well established. Keep the soil in the container as cool as possible as well as moist. If you are planting directly into a bed, mulch the plant well to cool soils and retain moisture. Many plants are lost in the final stage of the process because the root system is not sufficiently developed to sustain the top portion of the new plant.

**New Sensations Garden** – We planted a variety of new plant cultivars introduced to the market this season to see how they perform in Oklahoma. This is a challenging bed, as it has rather heavy clay soils and low organic matter, and it is very exposed. We have had some successes and failures. I am very excited about the new Cyperus ‘Baby Tut’. Its larger counterpart, ‘King Tut’ has been a favorite the past few seasons. This small, aquatic sedge performs equally well in the water and on land. It has tolerated our dry, hot summer and is thriving. The upright arching stems support fine-textured foliage, giving the plant a strong presence, yet soft touch.

Another unusual grass-like plant is Ribbon Bush (*Homalocladium platycladium*). This plant is grown for its unique flat stems which take the place of the leaves. The actual leaves are tiny and shed very quickly. The plant has a rambling growth habit, reaching about three feet tall and wide. We also have a wonderful rush that has all of us in the garden very excited. ‘Blue Mohawk’ Juncus is a warm-season plant that really withstands the heat. We love it for its strong, upright architecture and blue coloration. It is a great plant to add contrast to a planting and it is also wonderful in containers.

We don’t often get excited by new nandina cultivars, but have been very happy with the one we planted this year. This is ‘Flirt’ nandina, a dwarf cultivar reaching only 18 inches round. ‘Flirt’ holds its red foliage through fall, winter and spring. In the summer, the red new growth forms a red crown framed by rich green foliage. Flanking the nandina is a pair of euphorbias. The euphorbias are quite tolerant of the heat and dry conditions. ‘Hip Hop’ reaches a mature size of 18 to 24 inches and is a prolific bloomer. ‘Blush’ belongs to the Breathless™ series and has a delicate red-flush color to the foliage, especially in the spring and early summer. Both cultivars have a nice mounding habit.

We very much enjoy *Reuallias* or Mexican petunias for their soft textured foliage and prolific blooming. This cultivar is ‘Chi Chi’. Once the weather warms it is covered with a profusion of purple-pink flowers that attract butterflies and hummingbirds. The plants reach 3 to 4 feet in height and 2 feet wide. We generally grow Mexican petunia as annuals in our climate, though they are winter hardy to zone 8 and marginally hardy in zone 7 – you may be able to winter the plants with a heavy mulch blanket.

We have a pair of new crapemyrtles as well. This red-leafed cultivar introduced by the Southern Living Plant Collection is called ‘Delta Jazz’. The deeply burgundy leaves have an interesting cupped shape. Many plants
with dark leaves scorch in the heat, but ‘Delta Jazz’ maintains its color, and the foliage is accented by bright raspberry-colored blooms. This is a medium-sized crapemyrtle reaching a mature height of eight feet and a width of four feet. We also have a tiny crapemyrtle cultivar called ‘Chickasaw’. This is a hybrid between the more familiar Lagerstroemia indica and Lagerstroemia fauriei. It has a wonderful, compact habit, with tiny leaves and masses of vibrant, lavender-pink blooms.

**Cooking with Barbara**  Barbara Brown, Extension Food Specialist, makes a watermelon and blueberry fruit freeze.

### Fruit Freeze

**Ingredients**

**Day 1:**
- 1 cup watermelon, cut in small cubes
- 3/4 cup blueberries

**Day 2:**
- 1 teaspoon finely chopped fresh ginger
- 1/4 cup frozen apple juice concentrate (not thawed)
- 1 tablespoon fresh lime juice
- 1/4 cup water

**Directions:**

**Day 1** (can be done up to 6 months ahead):
1. Spread cubed watermelon and blueberries on parchment line baking sheet with sides.
2. Freeze fruit until solid.
3. When fruit is frozen, store in a resealable plastic bag in freezer until needed.

**Day 2:**
1. Combine frozen watermelon and blueberries, ginger, frozen apple juice concentrate, lime juice and water in blender.
2. Blend until big chunks are broken down but drink is still icy. Scrape sides of blender as needed while mixing.  

Serves 1

**Nutrition Facts**

Servings per recipe: 1 (about 2-1/2 cups)

<table>
<thead>
<tr>
<th>Calories</th>
<th>232</th>
<th>Calories from fat 9</th>
</tr>
</thead>
<tbody>
<tr>
<td>% Daily Value</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Fat 1g</td>
<td>2%</td>
<td></td>
</tr>
<tr>
<td>Saturated Fat 1g</td>
<td>3%</td>
<td></td>
</tr>
<tr>
<td>Cholesterol 0mg</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>Sodium 29mg</td>
<td>1%</td>
<td></td>
</tr>
<tr>
<td>Carbohydrate 57g</td>
<td>19%</td>
<td></td>
</tr>
<tr>
<td>Dietary Fiber 4g</td>
<td>16%</td>
<td></td>
</tr>
<tr>
<td>Protein 2g</td>
<td>4%</td>
<td></td>
</tr>
<tr>
<td>Vitamin A: 13%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vitamin C: 58%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Folacin: 3%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Calcium: 4%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Iron: 6%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Potassium: 18%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Modified from original recipe from American Institute for Cancer Research at [http://www.aicr.org](http://www.aicr.org)
Barbara Brown, Food Specialist
Oklahoma Cooperative Extension Service
Vegetable Garden Chores – This week in the vegetable garden we plant spinach and turnips. Spinach is a wonderful fall crop that can last well into the winter months with a little protection. Sow the seed into an area that can easily be covered with a row cover. Later this fall you can keep the spinach row covered to protect it from hard frosts.

Spinach seed should be sown at a depth of one half inch. We use shallow furrows for sowing. Later, we will need to thin plants to a spacing of 3 inches per plant. If you plan to plant garlic or shallots this fall, be sure to order bulbs soon.

Sincerely,
Kim Rebek, Oklahoma Gardening Host

The Oklahoma Horticultural Society’s Garden Tour for Connoisseurs – In this segment we take a sneak peak at some of the home gardens that will be featured in the Oklahoma Horticultural Society's Annual Garden Tour for Connoisseurs! This year the tour will take place on September 18, 2010 from 9 a.m. to 5 p.m. (Rain date – September 19 – noon to 5 p.m.). Six of Oklahoma’s premiere gardens will be featured on the tour. The tour serves as the society’s primary fundraising event and proceeds support horticultural education throughout the state, including scholarships, public education events and speaker series. Tickets are available at several nursery outlets including:

- Farmers Grain
- Horn's Seed
- TLC Florist and Greenhouses (both locations)
- Precure Nursery (both locations)
- The Greenhouse (Norman)
- Wilshire Garden Market

Shouna & Gary Olson, 12501 Dutch Forest Place, Oklahoma City – This large garden surrounds a brick and stone house in the Dutch Forest addition. In the front yard the scene is set with perennial borders surrounding the house, and large raised beds near the street. A large pond stocked with koi is the centerpiece of the back garden. Curving beds and borders surround the home with large shrubs and swaying grasses providing both grace and structure in the fall. Colorful crapemyrtles grow throughout, and in the spring and fall, Encore® Azaleas bloom. Shabby Chic styled art, like the bed of an old pickup truck and a second hand bicycle, adorn the garden, and winding through the paths you discover points of interest throughout. Large trees provide ever more shade as you make your way to the back of this large suburban lot.

Each year when the daylilies are in full bloom the Olson Family hosts a garden tour and plant sale to benefit WINGS, a non-profit organization that provides vocational and social programming for individuals with developmental disabilities. In the near future, WINGS will also provide a residential community for adults with disabilities can find a community and workplace in which they can thrive as well as a safe and nurturing place to live. Learn more about WINGS on their website: [www.WINGSok.org](http://www.WINGSok.org).

Plants highlighted are Camellias (*Camelia japonica*), Hosta/ Plantain Lily (*Hosta* species), Daylily (*Hemorocallis* species), Rice Paper Plant (*Tetrapanax papyriferus*) and Princess Tree (*Paulownia tomentosa*).

Ellen & Richard Orthwein, 11705 N. Bryant Avenue, Oklahoma City – After a short journey over
a double hung bridge, welcome to this suburban retreat of approximately 140 acres, 40 to 50 of which are
exquisitely manicured with six waterfalls, ponds and a grotto bar. The owners’ Cape Cod inspired home sits
atop a large hill landscaped with shrubs and trees like Deodor Cedar (Cedrus deodara), Chinese Pistache
(Pistacia chinensis), and a 'Vanderwolf's Pyramid' White Pine (Pinus flexilis). Behind the home is a large
terrace, swimming pool and grotto bar, fully landscaped with three young Sequoias (Sequoia spp.) rarely grown
in Oklahoma, weeping Blue Atlas Cedars (Cedrus atlantica ‘Glaucu’), Chinese Fringe flowers (Loropetalum
chinense var. rubrum), hostas and other shade perennials. Bronze statues, including one which is a fountain,
highlight the more formal landscape near the home. After peeking into the grotto bar, why not follow the 250
foot, meandering stream past the swimming pool, and gaze upon the lower, naturalized landscape of beautiful
ponds, fountains and bubbling waterfalls. Design by Caviness Landscape Design.

KAREN & WARREN FILLEY, 3409 HARRIS DRIVE, EDMOND – This three-quarter-acre plant collector and art
lover’s paradise began in 1987. Therefore, many of the trees and shrubs are mature specimens. The garden was
designed to have plants in bloom most of the year with most plants being partial to full shade. Walking the
pathways will take the visitor through a series of garden rooms much in the style of Hidcote Manor with focal
points at nearly every turn. Certified as a wildlife habitat by the Oklahoma Department of Wildlife
Conservation since the 1990s, Dr. Filley is an allergist, and the garden is continually being planted and
maintained to have less pollen. In the rear right corner, a section of the garden is dedicated to growing
vegetables. A large back deck makes the garden an enjoyable living and entertaining space even when
experienced in winter. A list of notable plants will be onsite, but two are the China Fir (Cunninghamia
laceolata) in the front garden and the Harlequin Glorybower (Clerodendron trichotomum), a passalong plant
from renowned landscape architect, Wolfgang Oehme. There is also a Variegated Leaf Beech (Fagus sylvatica
'Purpurea Tricolor'), a Dawn Redwood (Metasequoia glyptostroboides), a Weeping Serbian spruce (Picea
omorika ‘Pendula’) and so many other treasures. Growing in the eclectic mix out front is a Chinese Parasol Tree
(Firmiana simplex), also known as a Hibaku Tree (translated as A-bombed Tree or Japanese Survivor Tree from
Hiroshima, Japan). Continuing an Asian inspired theme, there are Japanese Plum Yews and ten or twelve
Japanese Maples throughout the property. A small greenhouse next to the house and a garden shed has a section
for tools and one to overwinter plants. Visitors should take their time as they walk through in order not to miss
any of the artwork, plants or statuary placed tastefully throughout.

Plants highlighted are Japanese Maple (Acer palmatum ‘Sangu Kaku’), Siberian Spruce (Picea obovata),
Alaskan Sitka Spruce (Picea sitchensis), Japanese Maple (Acer palmatum dissectum ‘Verdis’), Aucuba (Aucuba
japonica ‘Gold Spot’), Oakleaf Hydrangea (Hydrangea quercifolia), Magnolia (Magnolia hybrid ‘Elizabeth’),
Garden balsam, Impatiens balsamina, Variegated Privet (Ligustrum sinensis ‘Variegata’), Crapemyrtle
(Lagerstroemia indica ‘Natchez’), Bush Clover (Lespedeza thunbergii) and Japanese Fiber Banana (Musa
basjoo).

TOM CRONIN, 12000 OLD MILL RD., OKLAHOMA CITY – One outstanding design feature of this six-year-old
garden is the dry creek bed planted with xeric plants, which runs the length of the front of the house. It was
created to divert water away from the house which sits below the surface of the road. In the berm in the front
yard is a golden, shrub-type, Gingko Biloba. This garden was influenced and inspired by Tom’s wife, Beth,
who was an avid gardener and plant collector. Around the house are numerous trees and shrubs, Southern
Magnolias ‘Claudia Wannamaker’ and ‘Symmes Select’ (Magnolia grandiflora) which shed their leaves at one
time in spring. On one side of the garage, the owner built another dry creek bed, and the back of the garden is
designed in two tiers. The front garden and upper tier were completed first with the lower tier being the
youngest part of the space. Also, in back is an extension of the house with a gracious fireplace that gives the
feeling of living within the garden. Notable plants in the back are the Weeping Spruce (Picea pungens pendula)
which adorns the stairway and several cultivars of Deodor Cedars (Cedrus deodara) including ‘Divinely Blue’,
with its distinctive mounding habit. In the lower tier is a Purple Chokecherry (Prunus virginiana ‘Schubert’), a
Proven Plant selection for Oklahoma, which has disease resistant burgundy foliage. Another outstanding plant

Plants highlighted are Live Oak (*Quercus virginiana*), Cherry Laurel (*Prunus caroliniana* ‘Bright and Tight’), Allee Elm (*Ulmus parvifolia* ‘Allee’) and Canadian Chokecherry (*Prunus virginiana*).

Following are two additional gardens that will be featured on the tour, but which we did not have a chance to preview on *Oklahoma Gardening*.

**Jennifer & Hugh Stout, 432 NE 70 Street, Oklahoma City** – Stout Gardens at Dancingtree, is only one-half mile east of Broadway Extension in Oklahoma City, but comes complete with the country ambiance of two grazing horses, and feels a million miles away. The garden encompasses nearly five acres and is brimming with irises, daylilies and statuary created from reclaimed items on the property. Ornamental deciduous trees and evergreens, like Red Japanese Maples (*Acer palmatum*), Purple Smoke Trees (*Cotinus coggygria*) and Lobolly Pines (*Pinus taeda*) are garden backbones which are then layered with roses, dwarf peach trees and junipers, along with other trees and shrubs. Beneath this pleasant backdrop, something is always blooming until winter winds blow. Composed of a series of garden rooms, by fall lovely grasses sway in the breeze while native shrubs like American Beautyberry (*Callicarpa americana*) sport beautiful purple berries. Wildflowers such as Mexican Hat (*Ratibida columnaris*) team up with Black and Blue Salvia (*Salvia guaranitica*) and Esperanza (*Tecoma stans*) enticing bumblebees and butterflies to their nectar. It is truly a wildlife habitat, but also designed for human play with an outdoor kitchen and fire pit. Design by owner.

**Barbara & Melvin Thompson, 4612 Roserock Drive, Oklahoma City** – Visitors to this graceful new home in northeast Oklahoma City will encounter plantings of sizeable evergreens, along with easy-care shrubs and perennials. At the front of the property, there is a large specimen Crapemyrtle ‘Tuscarora’ (*Lagerstroemia indica*) and Amur Maple (*Acer ginnala*) planted, along with assorted varieties of Deodor Cedars (*Cedrus deodara*) like ‘Electra Blue’ ‘Blue Velvet’ and ‘Gold Cone’. Then, stroll around back to encounter a beautiful infinity edge pool and spa which glisten like jewels in the stone patio. While holding intricate wrought iron railings, descend stone steps on either side of the waterfall to another patio and fire pit with a splash pool below. In the raised beds accenting the waterfall, are two ‘Slender Silhouette’ Sweetgum trees (*Liquidambar styraciflua*) on either side. Below is a naturally designed grass and wooded area with large boulders and raised berms of wildlife friendly plants. The lower garden is crafted to blend with native trees along the creek and is filled with Autumn Blaze® Maples (*Acer x freemanii*), Live Oaks (*Quercus virginiana*) and Red Oaks (*Quercus rubra*). A brilliant splash of color along the back against the wrought iron fence is provided by ‘Raspberry Sundae’ Crapemyrtles. Design by Scapes, Inc.

Sincerely,
Kim Rebek, *Oklahoma Gardening* Host

---

**Fertilizing Strawberries** – Strawberries require a fall application of nitrogen each year to provide plants enough nitrogen for fruit bud set. Side dress plants with 1.5 pounds of ammonium nitrate per 100 foot row. Our bed is 20 feet long, but the width is equivalent to two rows, for a total of 40 row feet. Make sure leaves are dry at application, and brush all fertilizer off the leaves immediately afterward. Apply about one inch of water...
after the application if rain is not expected within a day or two.

**McAlester Arboretum** – In this segment we visit one of the Oklahoma Botanical Garden and Arboretum affiliate gardens in McAlester. Glen Kerns and Sherman Miller from the City of McAlester Parks Department introduce us to a number of unique cultivars throughout the arboretum. In 1981, with the help of the McAlester Tree Board and Oklahoma State University, the McAlester Arboretum was established at Will Rogers Park. It has now evolved into one of the largest collections of trees in Oklahoma and continues to grow yearly. Glen and his crew have incorporated into the McAlester Arboretum a pergola and a unique rock waterfall. The Arboretum trail is one mile and is the only Arboretum in the State that is truly handicap accessible. All of our tree plaques have the Latin Name, the Common Name and the year planted in English and Braille. Each year Glen and his crew try to plant approximately 200 new trees along City right-of-ways. Their plantings offer homeowners a chance to see how cultivars perform in the local climate before planting them in their own landscapes.

We start in the redbud collection where cultivars represent the wide array of colors and forms available. Glen’s team tests new cultivars to see how well they perform in Oklahoma’s challenging climate. The Chinese Redbud (*Cercis chinensis* ‘Avondale’) performs beautifully beside its American counterparts. A remarkable Eastern Redbud cultivar is ‘Merlot’ for its deep red foliage. A weeping form with similar foliage is ‘Ruby Falls’. Weeping redbuds have been very popular in the last few seasons. A green-leafed cultivar that has performed well is ‘White Waters’. A new cultivar ‘Rising Sun’ is due to be released by Oklahoma’s Greenleaf Nursery. This cultivar has a most magnificent palette of foliage colors, with new growth turning from orange to yellow to green.

Sherman Miller has a passion for Ginkgo (*Ginkgo biloba*) trees. The arboretum is home to 19 different cultivars of these ancient trees which includes ‘Weeping Wonder’, ‘Mariken’ and ‘Troll’. He tends eight miniature hybrid cultivars, which are grafted on to a dwarfing rootstock. Ginkgos are truly ancient plants, having existed since long before the dinosaurs. They are remarkably pest free – perhaps because they have long out-lived any natural enemies that may have once fed upon their leaves. Ginkgos are tough trees, very adaptable to the Oklahoma landscape, but are so pleasing to the eye. The uniquely-shaped leaves have a certain grace and seem to dance in the wind.

We look at several trees with a fastigate or narrow, upright form. These trees are excellent for use in urban landscapes as they maintain a very tight growth habit into maturity. The Columnar Oak cultivar ‘Kindred Spirit’ is a hybrid between the Sessile Oak (*Quercus petraea*) and the English Oak (*Q. robur*) and possesses the best qualities of each parent. The upright Sweetgum (*Liquidambar styraciflua* ‘Slender Silhouette’) is a seedless variety. Many homeowners shy away from sweetgums because of the spiky seed balls they produce. However, newer seedless cultivars such as ‘Slender Silhouette’ and the full sized ‘Rotundaloba’ offer new possibilities for homeowners. A columnar form of the Tulip tree (*Liriodendron tulipifera*) is also available. Another tree for the small landscape is the Dwarf River Birch (*Betula nigra* ‘Little King’ - also called ‘Fox Valley’).

The arboretum houses 12 cultivars of Bald Cypress (*Taxodium distichum*). We take a close look at two of these. ‘Frio’ is a Texas selection, collected from along the Frio River. ‘Frio’ is a cold hardy cultivar and very tolerant of alkaline and heavy clay soils. A new weeping selection is ‘Falling Waters’. This selection has a strongly weeping habit, but unlike most weepers, ‘Falling Waters’ maintains a central leader. The lateral branches weep gracefully.

**Palms in the Landscape** – In this segment we visit with palm enthusiast Wes Lanphier at the home of John Lodes in Tulsa to look at the use of palms in the landscape. Wes had previously joined us during our regional
tour of southeast Oklahoma to share a population of Dwarf Palmetto (*Sabal minor*) plants in McCurtain County. We look at the Dwarf Palmetto at home in the ornamental landscape and discuss proper plant location for greatest success. We also look at other palms, both hardy and tropical, that can be used in the landscape.

The Needle Palm (*Rhapidophyllum hystrix*) is a tolerant, rugged and cold hardy palm that grows very quickly in the landscape. *Rhapidophyllum hystrix* is a fan palm that grows to about 6 feet in height. It has a clumping habit and forms rounded mounds up to 10 feet. The Needle Palm doesn't form a trunk but instead has a slowly lengthening crown that may grow to about 4 feet long. This palm is native to the southeastern United States including Alabama, Florida, Georgia, Mississippi and South Carolina. However, the plant’s cold tolerance and adaptability make the Needle Palm well suited for Oklahoma’s diverse climates. Needle Palm will perform best under shaded conditions, especially if protected from western exposure. The Needle Palm requires little maintenance and makes an excellent specimen or rich green backdrop to other plantings. Once established, the Needle Palm is very drought tolerant, yet it also performs beautifully on wet soils.

The Windmill Palm (*Trachycarpus fortunei*) is a trunk forming palm from temperate and subtropical mountainous areas of Asia including southeastern China, Taiwan and the Chusan Islands. It is the hardiest trunk-forming palm, very hardy to zone 7B, but also able to grow in zone 7 with some winter protection. Though we commonly see Windmill Palms planted along the gulf coast, they are much less common in Oklahoma landscapes. This is a picture-perfect palm with large fanned leaves and a layered trunk. Trunks are usually covered with a loose mat of coarse gray or brown fiber. In older individuals the fiber sloughs away to reveal a smooth ringed surface. This is a hardy palm and can withstand subfreezing temperatures. In its native habitat, this tough palm is sometimes subjected to a cover of snow and ice. Give the palm plenty of shade and protect it from afternoon sun. The palm will have the best chance of winter survival if it is planted in a sheltered location; in particular, protect the trunk from western and northern winds.

The plants we looked at reached a height of 20 feet. The Windmill Palms in John’s landscape are derived from a number of interesting seed sources, each from the coldest locations known to support the Windmill Palm. His Naini Tal Palm was grown from seed collected in the Himalayan town of Naini Tal. He also has a specimen from a Bulgarian seed source. The parent plant had grown at the Historical Museum in Plovdiv, Bulgaria.

The Japanese Finer Banana (*Musa basjoo*) is a wonderful hardy banana that brings a punch of the tropics to the landscape. The plant is an herbaceous perennial with trunk-like stems and a rhizomatic root. The roots are considered frost hardy and will survive well into zone 5 if protected with a thick blanket of mulch. The banana resprouts from the rhizomes each year and will rapidly grow to full size in a season.

**Horticulture Tips for September** – David Hillock, Consumer Horticulturist, gives us Horticulture Tips for September.

- Last chance to control grubs if you have had a problem with them.
- Seal up the house to keep out insects seeking shelter for the winter.
- Watch for fall specials at garden centers and nurseries since the fall is a great time to plant many ornamentals.
- Cool-season crops like lettuce, radishes, rutabagas, spinach, etc. can be established during September for a fall crop.
- Plant cool-season annuals toward the latter part of the month.
- Prepare tropical houseplants that have been outdoors for the summer to return indoors by placing them in shaded areas so they can adjust to the lower light levels.
- Early September is the last opportunity to fertilize warm-season grasses. Don’t apply fertilizer much past the middle of the month.
• Winter broadleaf weeds like dandelion will begin to emerge in late September, which is also the best time to control them with a 2, 4-D type herbicide.
• If pre-emergent control of winter-annual weeds (henbit, chickweed, annual bluegrass, etc.) is desired in lawns, the application should be completed by the 2nd week of September. (HLA-6421) Note: Do not treat areas that will be seeded in the fall.
• Plan to seed bluegrass, fescue or ryegrass as needed in shady areas in mid- to late-September. Fall is the best time to establish cool-season lawns (HLA-6419).

Announcements:
The Central Oklahoma Hemerocallis Society will hold their annual Fall Daylily Sale on September 11 from 8:00 A.M. - 2:00 P.M. at the Will Rogers Garden Center in Oklahoma City. For more information call 405-433-2217 or 405-603-2225.

The Oklahoma Market Gardening School will be held this year in Antlers on Thursday evenings beginning September 23 and running for eight weeks. The purpose of the Market Gardening School is to familiarize current and future fresh market producers with management, production, and marketing techniques for fresh produce. If you have an interest in growing for local markets, contact Stephanie Larimer at 405-744-5404 to learn more about the program or visit http://www.hortla.okstate.edu/events/pdf/2010okmarketingschool.pdf.

Please contact your local Oklahoma Cooperative Extension Service Office for more educational information on garden-related topics. If you need further information about this week's show, call (405) 744-5404 or visit our website http://www.oklahomagardening.okstate.edu. Thank you for your continued support!

Sincerely,
Kim Rebek
Oklahoma Gardening Host
Bixby Vegetable Field Day – In this special episode we attend the Vegetable Field Day at the Oklahoma Vegetable Research Station in Bixby. The Bixby Research Station encompasses 110 acres situated on the north side of the Arkansas River in Bixby. The station is home to a large assortment of research programs with potato, sweet potato, peppers, tomatoes, asparagus and other vegetable variety and breeding studies. Also, small fruits, herbicide trials and cultural techniques are under study. Forty acres of the station are employed in agronomic research in soybean breeding, variety trials and double cropping management studies. The research station holds a public field day every two years in June.

Herb Extractions – Dr. Niels Maness of the OSU Horticulture and Landscape Architecture Department joins us to talk about his research with specialty extraction crops. Much of Niels’ work focuses on extraction techniques used to stabilize dried herbs or use as flavoring. Niels has developed a dried cilantro extract that can be used as a culinary herb. He is evaluating several varieties of cilantro for spring harvests and has demonstrated cilantro can be a viable crop for Oklahoma. Niels is also running a basil variety trial, again for use as an extraction crop. Basils vary dramatically in their chemical content, as can easily be observed by crushing a leaf and smelling the aroma or tasting the flavor. Through his research, Niels aims to identify basils with high yields and valuable chemical components that are extractable. The extraction is exciting in that it introduces new crops to Oklahoma growers as well as new production methods. With advancements in extraction processing, the work also promises expansion of Oklahoma’s commercial production markets. The extracted, dried products help to reduce production waste, extend shelf life and standardize flavor for commercial products.

Tomato Diseases – Dr. John Damicone of the Entomology and Plant Pathology Department introduces us to a few diseases that have cropped up in the tomato plantings. Many growers this year experienced a leaf curl in their tomato plants. Tomatoes require constant moisture rather than fluctuating periods of wet and dry soil. Heavy rains followed by high heat early this season caused the leaves on many tomato plants to curl. This was a physical response to weather; however, the symptoms are very similar to those of the Beet Curly Top Virus. Plants infected with the virus will also appear stunted compared to healthy plants and will cease production. Beet Curly Top Virus is transmitted by migrating insects. Other tomato diseases discussed in this segment include blossom end rot, cat facing and bacterial leaf spot.

Sweet Corn Replicated Variety Trials – Dr. Brian Kahn is a vegetable research specialist in the Horticulture Department who works with a variety of traditional field crops, including sweet corn. In this year’s variety trials he faced the challenge of isolating varieties with differing genetics. Corn pollination is unique in that the pollen fertilizing an ear of corn has a direct and immediate effect on the resulting kernel. For example, sweet corn pollinated by a field corn will produce starchy ears. The plants under trial belong to two different genetic groups, each group having a common sweetness gene. The two groups must be isolated to minimize pollen transfer. Ideally, corn varieties are separated by at least 250 feet in all directions. In home gardens, you can also isolate corn varieties temporally, planting one variety early and another late.
Hardscape Solutions to Rainwater Management – In this segment Michael Holmes, Associate Professor of Landscape Architecture, joins us to look at ways we can manage rainwater in the landscape through the use of hardscape materials. Rainwater that falls on impervious surfaces such as driveways and walkways usually runs off site, entering storm drains and contributing to water quality problems downstream. We need to think of rainwater as a resource and identify ways to keep it on site. In earlier segments, we looked at ways to collect and store rainwater for use in irrigation. This reduces the amount of rainfall escaping the landscape.

For hard surfaces we need another approach. The first step is to reduce the area of impervious surfaces in the landscape. Determine how much is needed and identify alternative, softscape alternatives where appropriate. For example, a seldom used path along a side yard can be mulched or fit with stepping stones rather than a sidewalk. In areas that require a hard surface consider using a pervious surface material such as pervious pavers, grass grids, gravel, flagstone or pervious concrete.

With all pervious materials, the most important component in managing rainwater is the sub-surface storage layer. Pores in the surface material allow rainwater to reach the ground below, but once there, the water is temporarily stored before slowly releasing the stormwater through an under drain system or if soil conditions are right, allowing the water to percolate into the ground. Layers of aggregate/gravel and sand below the surface material provide a drainage base for water movement, storage and slow release. The subsurface layers are depicted in the illustration below:

We visit the newly installed pervious pavement demonstration at The Botanic Gardens at OSU to demonstrate the rapid inflow of water into a pervious paver system. This project demonstrates pervious and impervious surfaces, side by side and alternative stormwater management techniques. The project was supported by:

- Breisch and Associates
- Greenleaf Nursery
- Oklahoma Department of Transportation
- Oklahoma Department of Environmental Quality
How to Mix Pervious Concrete — In this segment Dr. Jason Vogel, Stormwater Specialist and Assistant Professor, Biosystems and Agricultural Engineering, joins us to demonstrate how pervious concrete is mixed. Pervious concrete reduces rainwater run-off from the landscape, thus reducing pollution of Oklahoma’s waterways. It also provides opportunities to capture and store water underground in sub-base layers.

Pervious concrete differs from regular concrete in that it contains little to no sand, which creates inter-connected pore spaces that allow water to infiltrate. Pervious concrete is weaker than regular concrete, but strong enough for many applications, including home walkways, patios and driveways. Compared to other pervious hardscape materials, such as flagstone and interlocking pavers, pervious concrete offers a less expensive option and a different appearance.

Mixing pervious concrete is something of an art form and requires a little practice before taking on a landscape installation. The pavement is installed over a well-drained sub-base, as described by Professor Holmes in the previous segment. To get started you will need:

- Aggregate
- Portland cement
- Water
- Scale
- 2 five-gallon buckets
- Measuring container (about 4 cups or larger)
- Section of pipe
- Plastic

Wear safety glasses and leather work gloves for personal protection when working with cement. The ratios of aggregate to cement to water are very important. In particular, too much water can render the concrete impervious. The recommended ratios (by weight) are:

Aggregate : Cement : Water
4 to 7.5 : 1 : 0.28 to 0.34 (0.32 is often recommended)

For our demonstration we used 30 pounds aggregate, 4.3 pounds cement and 1.4 pounds water.

Mix the aggregate and cement well, then slowly add the water. Turn the mixture back and forth between the two buckets until it is thoroughly mixed. The cement will take on a glossy appearance when ready to pour. Pour the cement into a prepared frame, just as if you were pouring regular concrete. Smooth and compact the surface by rolling a piece of metal pipe across the surface. Do not finish the concrete with a trowel, as this will clog the pore spaces. Cover the pavement with plastic and allow it to cure one to two weeks.

You can learn more about pervious pavement by visiting Dr. Vogel’s website: http://lid.okstate.edu/pervious-pavement.
Oklahoma Gardening
Information Sheet
August 14 & 15, 2010
OETA’s AugustFest—No Oklahoma Gardening Episode

Oklahoma Gardening
Information Sheet
August 7 & 8, 2010
OETA’s AugustFest—No Oklahoma Gardening Episode

Oklahoma Gardening Information Sheet (#3705)
OETA air date: July 31 and August 1, 2010
OETA airtime: Saturday 11:00 a.m., Sunday 3:30 p.m.

Oklahoma Farmers’ Markets – In this segment Barbara Brown visits with Johnny Roberts, the Market Development Coordinator for the Oklahoma Department of Agriculture, Food and Forestry (ODAFF), to learn more about Oklahoma Farmers’ Markets. In addition to discussing the benefits of shopping at Farmers’ Markets, Johnny tells us about new alternative ways to pay that are making Farmers’ Markets even greater assets to their local community. Special benefits for senior citizens and the WIC program are both ways of making fresh fruits and vegetables available to all the people of Oklahoma. Johnny also shares with us information on how to start a Farmers’ Market in your community and where to find resources for new or existing markets through the Market Development group at ODAFF (http://www.okgrown.com/markets/).

Ardmore Farmers’ Market – In addition to the state programs presented by Johnny Roberts, tribal nations also offer programs to help their people afford fresh fruits and vegetables. We visit with a vendor at the Ardmore Farmers’ Market to learn more about these programs. Jackie Baker of Baker Pecans shares with us from a vendor’s point of view how these programs benefit her local community.

The Market Place on Broadway is the new home of the Ardmore Farmers’ Market. The Market Place on Broadway takes pride in bringing the community locally grown vegetables, fruits, flowers, plants, nuts, baked goods and soaps and lotions, sold by the farmers that produce them. The market is open year round. Summer Market hours: Wednesdays and Saturdays 7:30 a.m. to 12:00 noon, mid-April through mid-December. Winter Market hours: Saturdays 10:00 a.m. to 1:00 p.m., January through mid-April.

Hoepfner Kiwi Farm – We visit another Agritourism site, the Hoepfner Kiwi Farm. Just east of Vivian, the kiwi farm is home to the Hoepfner family who has been growing kiwis for over 25 years. Over the years they have added acres of beautiful kiwi vines, in standard rows and also ornamentally over arbors. The plants are not only fruitful, but also can be very attractive. Most of us are familiar with the fuzzy-skinned kiwi fruit available at our local grocery store. The kiwi fruits produced at the Hoepfner Farm are less familiar. The fuzzy-skinned species, Actinidia deliciosa, is not cold-hardy in Oklahoma, so the Hoepfners grow a hardy kiwi instead, Actinidia arguta. These plants can tolerate colder winter temperatures and produce an abundance of fruits. The fruits are smaller than the fuzzy kiwifruit and have a smooth skin. They are eaten whole like grapes.
Plants are highly productive, with a single plant producing over 100 pounds of fruit. Kiwi plants produce male and female flowers on separate plants, a habit called dioecious. It is necessary to plant both female and male plants to allow for pollination and fruit production to occur. The exception to this is with the self-fertile cultivar ‘Issai’. These plants can self-pollinate, but are less vigorous than dioecious varieties.

In addition to selling their fruit at local farmers’ markets and fairs, the Hoepfners also sell soaps and perfume made from the fruit of the kiwi.

Earlier this season we aired segments on building the trellis and establishing kiwi plants. If you are interested in installing your own kiwi planting, you can watch these segments again on our You Tube channel: www.youtube.com/oklahomagardening.

**Horticulture Tips for August** – David Hillock, Extension Consumer Horticulturist, shares horticulture tips for August.

**General**
- Water compost piles during extremely dry periods so that it remains active. Turn the pile to generate heat throughout for proper sterilization.
- Water all plants thoroughly unless rainfall has been adequate. It is better to water more in depth, less often and early in the morning.
- Watch for high populations of worms, aphids, spider mites, thrips, scales and other insects on plant material in the garden and landscape and treat as needed. (EPP-7306)

**Trees and Shrubs**
- Discontinue deadheading roses by mid-August to help initiate winter hardiness.

**Flowers**
- Towards the end of the month, divide and replant spring-blooming perennials like iris, peonies and daylilies if needed.

**Vegetables**
- August is a good month to start your fall vegetable garden. Bush beans, cucumbers and summer squash can be replanted for another crop. Beets, broccoli, carrots, potatoes, lettuce and other cool-season crops can also be planted at this time. (HLA-6009)

**Fruit and Nut**
- Continue protective insect applications on the fruit orchard. A good spray schedule is often abandoned too early. Follow directions on last application prior to harvest. (EPP-7319)

**Lawn and Turf**
- Grassy winter weeds like *Poa annua*, better known as annual bluegrass, can be prevented with a preemergence herbicide application in late August. Water in the product after application. (HLA-6420)
- Tall fescue should be mowed at 3 inches during the hot summer and up to 3 ½ inches if it grows under heavier shade. (HLA-6420)
- For areas being converted to tall fescue this fall, begin spraying out bermudagrass with a product containing glyphosate in early August. (HLA-6419 & HLA-6421)
- Irrigated lawns can be fertilized once again. If you have had a problem with spring dead spot in your bermuda lawn, this should be your last application of fertilizer for the year.
- Areas of turf with large brown spots should be checked for high numbers of grubs. Mid-to-late August is the best time to control heavy white grub infestations in the lawn. (EPP-7306)

**Thrips**
Recently we have received several calls about various flowering plants which develop flower buds but they don’t open or they are falling off prematurely. While there could be several reasons for this, in most cases it has been due to an insect called thrips. These are very tiny, cigar-shaped insects that can crawl inside the flower bud where it feeds on the developing flower. The flower may not open, opens but looks streaked and brown, or doesn’t fully open and may prematurely drop from the plant. We take a look at a Rose of Sharon growing in the studio gardens. Several flowers have begun to open but then stop, wither up and die. When we break these
flowers open and shake them over a white piece of paper we can see tiny yellow to tan specks that begin to move on the paper; these are the thrips. They can be controlled fairly easily with most general purpose insecticides, but spraying needs to begin when leaves and flowers are beginning to develop in the spring and early summer. Spraying them now might help control some, but once they get inside the flower bud insecticides are going to be largely ineffective.

**Home Gardens of Linda and Bruce Treubel** – In this segment we travel to Eufaula to visit the beautiful home gardens of Linda and Bruce Treubel. After moving to Eufaula from New Orleans following Hurricane Katrina, the Treubels found themselves on a magnificent property with a treasure of a garden. Though the Treubels would not have previously called themselves gardeners, they embraced the opportunity to learn about plants and set to work reclaiming the overgrown beds of their landscape. Through the process, Linda and Bruce have grown into gardeners, learning botanical names, maintenance requirements and special needs of their enormous plant collection.

The property is set in a wooded lot with a spectacular view of Lake Eufaula. The shady landscape features numerous Japanese maples, azaleas and dogwoods. A quarter mile of paths wind through the gardens, this is truly a strolling garden. As an artist, Bruce can appreciate the magnificent structure of trees and shrubs that provide a framework for his creative touch. He continually experiments with plants and techniques, and learns from his successes and failures.

**Announcements:**
The Tulsa Audubon Society and Wild Things Nursery will host the award winning author Dr. Doug Tallamy on two nights in August. Dr. Tallamy will present the lecture “Bringing Nature Home: How You Can Sustain Wildlife with Native Plants.” Presentations will be made at 7:00 p.m. on Wednesday, August 18 at the Oklahoma City Zoo and Thursday, August 19 at the Tulsa Garden Center. For more information, please visit [www.tulsaaudubon.org](http://www.tulsaaudubon.org) or [www.wildthingsnursery.com](http://www.wildthingsnursery.com).

Sincerely,

Kim Rebek
*Oklahoma Gardening Host*
July 2010—*Oklahoma Gardening* Shows

Scroll down to find earlier programs in July or click the date on the right.

Please contact your local Oklahoma Cooperative Extension Service Office for more educational information on garden-related topics. If you need further information about this week’s show, call (405) 744-5404 or visit our website [http://www.oklahomagardening.okstate.edu](http://www.oklahomagardening.okstate.edu). Thank you for your continued support!

---

**Oklahoma Gardening Information Sheet (#3704)**

OETA air date: July 24 and 25, 2010

OETA airtime: Saturday 11:00 a.m., Sunday 3:30 p.m.

**Oklahoma Agritourism**—As we continue our tour of Southeast Oklahoma, we visit two Agritourism sites. Barbara Brown also takes to the road, visiting with Jeff Weeks, the Eastern Region Coordinator of Oklahoma Agritourism to learn more about the program. Oklahoma Agritourism is a program run by the Oklahoma Department of Agriculture, Food and Forestry to provide resources for small agriculture-based businesses across the state. Agritourism encompasses a great diversity of attractions and activities, from specialty growers and wineries, to guest ranches and horseback riding.

Agritourism sites are more than just attractions and activities, they are experiences. These experiences exist throughout Oklahoma, everywhere from the big metros to the smallest of rural towns, and probably right down the street from where you live. Because they are usually small operations, their budget for advertising ranges from small to non-existent. This is where the Oklahoma Department of Agriculture, Food and Forestry steps in to help promote these local businesses through Agritourism.

For more information about Oklahoma Agritourism, please call 405-522-5652 or visit their website at [http://oklomaaagrutourism.com](http://oklomaaagrutourism.com).

**HoneyBear Ranch**—In this segment we visit Honey Bear Ranch in Broken Bow, a market garden owned by Sandy and Phil Harris. HoneyBear Ranch came to be in March of 2005. Phil and Sandy had fallen in love with the Broken Bow area and bought "the ranch" as a place to retire and follow their dreams. They had both always wanted to raise their own food and be as self-sufficient as possible. They produce organic vegetables from seed started in their greenhouse. Their gardens are fed with natural fertilizer provided by calves, chickens and the compost brewed on the ranch.

Sandy and Phil often host free clinics to teach others how to grow food for their families. They believe it is important to pass on what we've learned from trial and error. This year they are opening a Garden Center at HoneyBear Ranch to allow them to add flowers and other products to the inventory. They offer sauces, jams, jellies, pickles and dried vegetables that have been prepared with produce from the gardens.
Sandy and Phil specialize in tomatoes and plant mostly heirlooms – the old varieties that are sometimes hard to find. They grow some of them in a hoop house, which allows them to have tomatoes from early May through December.

The Community Garden had been a dream of Phil and Sandy’s for the last two years. This year, they made that dream a reality. The Community Garden is a place where anyone with an interest in growing their own food can come and plant a garden. Everyone is welcome – including children! If you don't know where to start, they’ll help you get started.

For more information about the HoneyBear Ranch, visit their website at http://www.honeybear-ranch.com.

Echo Canyon Spa Resort – In this segment we visit another Agritourism site owned by Joe and Carol Van Horn. Echo Canyon is located in the beautiful Arbuckle Mountains right next to Chickasaw National Recreation Area, Oklahoma's only National Park. The Sulphur area has been known for hundreds of years for its healing mineral waters. Echo Canyon Resort puts these healing waters to use in their spa and mineral baths.

The spa is situated on a sprawling orchard exploding with fruit of all types: peaches, plums, apples, pears and more. A recent addition includes an extensive planting of blackberries. Some of the less common fruits include muscadines, figs, sand plums and persimmons. Carol tends the orchard and uses the produce to make delicious fruit sauces and drinks for the spa’s dining room. Visitors love to stroll through the orchard and pick fresh fruit right from the tree. The orchards also connect visitors to the land.

For more information about the Echo Canyon Spa Resort, visit their website at http://www.echocanyonmanor.com.

Sincerely,
Kim Rebek
Oklahoma Gardening Host

Kiamichi Forestry Research Station – In this segment we travel to McCurtain County to visit OSU’s Kiamichi Forestry Research Station. Bob Heinemann, Senior Station Superintendent, introduces us to a number of programs taking place at the research station, a 160 acre tract of land east of Idabel, Oklahoma. While the research conducted at Kiamichi is mainly forestry-based, the station has a strong horticulture background and continues to maintain a small educational arboretum. The station also maintains a small tree bank for educational, demonstration and community projects.

Trees found at the research station are Loblolly Pine (Pinus taeda), Slash Pine (Pinus elliottii),
Longleaf Pine (*Pinus palustris*), Sawtooth Oak (*Quercus acutissima*), Italian Cypress (*Cupressus sempervirens*), Eastern White Pine (*Pinus strobes*) and Ohio Buckeye (*Aesculus glabra*).

The station annually hosts OSU departmental field trips that educate students about forest ecology, wood products, forest hydrology and wood technology. They regularly welcome colleges, high schools, elementary schools and scout trips from across the state and provide workshops for professional groups and associations from across the country.

**Forest Tree Improvement Center** – Kiamichi Research Station also houses programs operated by the Oklahoma Department of Agriculture, Food and Forestry (ODAFF) Forestry Services. In conjunction with ODAFF the station host a Christmas tree seed orchard that produces seed to grow Virginia pine seed/seedlings for Oklahoma Christmas tree growers. Seedlings sold through ODAFF’s tree seedling program are also grown on site. Justin Jones, Manager of the Forest Tree Improvement Center, joins us to talk about the plant production programs run by ODAFF. Oklahoma Forestry Services sells over 30 varieties of trees and shrubs chosen for their ability to meet the challenges of Oklahoma's tough climate. Seedlings are used to create wind breaks, stabilize soils and provide wildlife habitat. New this year, Forestry Services has introduced wildlife habitat improvement packets containing 25 each of 4 different varieties of trees and shrubs chosen specifically to enhance the wildlife habitat on your property. Landowners can select from the Deer Habitat Package, Songbird Package or Rural Wildlife Habitat Package. For more information on purchasing seedlings visit: [http://www.forestry.ok.gov/conservation-seedlings](http://www.forestry.ok.gov/conservation-seedlings).

**Champion Trees** - Oklahoma Forestry Services, in cooperation with the Oklahoma Forestry Association, maintains records on the largest specimens of many of Oklahoma's tree species. This list has been updated and published periodically since the early 1960s. The last publication was in 2000, but now the list is continuously updated, maintained and displayed on the web ([http://www.forestry.ok.gov/champion-trees](http://www.forestry.ok.gov/champion-trees)).

McCurtain County is home to an amazing 29 of the 78 recorded champion trees in Oklahoma. Dennis Wilson, Research Specialist at Kiamichi Forestry Research Station joins us to look at a few of Idabel’s champions including Chinese Parasol tree (*Firmiana simplex*), Red Maple (*Acer rubrum*) and Sassafrass (*Sassafras albidum*).

**Softwood Cuttings with Camp T.U.R.F.** – In this segment we join Shelley Mitchell, Horticulture Extension Associate, 4-H and Youth Programs, and her team of Camp T.U.R.F. participants to demonstrate how to take a softwood cutting. Camp T.U.R.F. (Tomorrow’s Undergraduates Realizing the Future) is a summer academy funded by the Oklahoma State Regents for Higher Education. The purpose of the summer academy is to give first-generation college students the confidence to attend college. In Camp T.U.R.F., high school students from across the state were introduced to a wide variety of horticultural fields. They joined us at Oklahoma Gardening to shoot a segment on propagation from softwood cuttings.

One way to asexually (without seed) reproduce plant material is through the use of cuttings. Cuttings can be taken from woody growth, called hardwood cuttings, or the tender shoots produced on the current season’s growth, called softwood cuttings. Some plants respond better
to softwood cuttings and others to hardwood cuttings. We are using softwood cuttings to propagate a Mockorange (*Philadelphus virginalis*).

Begin by cutting an 8 inch length of stem. Strip the outer, tender bark layer by cutting two rings around the stem about one inch apart. Then cut a line lengthwise down the stem between the two rings. The bark between the rings should peel easily. Dip the exposed end of the cutting in a rooting hormone to promote root production. Stick the striped end of the cutting in damp soil, mist the plant and cover it with a clear plastic bag to prevent the plant from desiccating. The cutting will begin to develop roots within four to six weeks. Once roots have established, the cutting can be transplanted to a container of the landscape.


**Cooking with Barbara** – Barbara Brown, Extension Food Specialist, gives us information on pickled eggs and beets.

**Pickled Beets and Eggs**

There are no home canning directions for pickled eggs. All of the following pickled egg recipes are for storage in the refrigerator. Pickled eggs should never be at room temperature except for serving time, when they should be limited to no more than 2 hours in the temperature danger zone of 40° to 140°F.

**Caution:** Home pickled eggs stored at room temperature have caused botulism. For the report from the Centers for Disease Control and Prevention (CDC), see [http://www.cdc.gov/mmwr/preview/mmwrhtml/mm4934a2.htm](http://www.cdc.gov/mmwr/preview/mmwrhtml/mm4934a2.htm) The Editorial Note in this report cautions against room temperature pickling and storage, also. The CDC further cautions that to reduce the risk for botulism when pickling, food items should be washed and cooked adequately, and utensils, containers, and other surfaces in contact with food, including cutting boards and hands, should be cleaned thoroughly with soap and warm water. Containers (e.g., jars and lids) in which pickling will occur should be sterilized.

**Pickling Tips**

Pickled eggs are peeled, hard-cooked eggs in a solution consisting basically of vinegar, salt, spices, and perhaps other seasonings. Pickling solutions are heated to boiling, simmered for 5 minutes, and poured over the peeled eggs. Egg whites tend to be more tender if a boiling solution is used instead of room temperature solutions.

Eggs used for pickling should have clean, sound shells. Small or medium
eggs are usually a good choice for pickling so the seasoning can penetrate into the egg. Fresh eggs are the best to use for pickling to ensure the highest quality possible since the eggs will be stored over a relatively long period of time. However, eggs at least a few days old will peel better after boiling.

Cooking and Peeling Eggs

According to the Georgia Egg Commission, the following method of hard-cooking facilitates peeling of ultra fresh eggs. Make a pinhole in the large end of the egg, place the eggs in a single layer in a saucepan, and cover with cold water to an inch above the layer of eggs. Place a lid on the pan and bring eggs to a boil. Turn down the heat and simmer for 15 minutes. Place the eggs in cold water and when cool, remove shells. Crack the shell of the egg all over. Peel, starting at the large end of the egg. The peeling may take place under cold running water to help wash the shell off the egg.

Containers for the Pickled Eggs

The container should be one that can be closed or sealed tightly; glass canning jars work well, and sterilized. Eggs are to be completely covered with the pickling solution during storage. A quart-size canning jar will hold about one dozen medium sized eggs.

To sterilize empty jars, put them right side up on the rack in a boiling-water canner. Fill the canner and jars with hot (not boiling) water to 1 inch above the tops of the jars. Boil 10 minutes at altitudes of less than 1,000 ft. At higher elevations, boil 1 additional minute for each additional 1,000 ft. elevation. Remove and drain hot sterilized jars one at a time.

Storing Pickled Eggs

After making the eggs, the eggs require some time to season (i.e., pick up the flavors from the pickling brine). Keep them refrigerated at all times. If small eggs are used, 1 to 2 weeks are usually allowed for seasoning to occur. Medium or large eggs may require 2 to 4 weeks to become well seasoned. Use the eggs within 3 to 4 months for best quality.
Recipes

Each of these recipes uses 12 peeled, hard-cooked eggs. The directions for each recipe are to bring all the ingredients except the eggs to a boil, reduce the heat and simmer for 5 minutes. Pack no more than one dozen peeled, hard-cooked eggs loosely into a warm, pre-sterilized quart jar (or other similar size container which can be closed tightly). There needs to be plenty of pickling solution, and enough to completely cover the eggs. Pour the hot pickling solution over the eggs in the jar, cover, and refrigerate immediately.

### Pickled Beets and Eggs
- 1 cup red beet juice (from canned or cooked and peeled beets)
- 1-1/2 cups cider vinegar
- 1 teaspoon brown sugar
- A few canned whole tiny red beets (or several slices of beets can be used)
- 1/2 cup white vinegar
- 6 thin slices of onion
- 12 teaspoons salt
- 1 teaspoon whole pickling spice
- 1 peeled garlic clove

### Sweet and Sour Eggs
- 1-1/2 cups pasteurized apple cider
- 1/2 cup cider vinegar
- 1 package (about 12 oz.) red cinnamon candy
- 1 tablespoon mixed pickling spice
- 2 tablespoons salt
- 1 teaspoon garlic salt
- 1-1/2 cups pasteurized apple cider or apple juice
- 1/2 cup white vinegar
- 6 thin slices of onion
- 12 teaspoons salt
- 1 teaspoon whole pickling spice
- 1 peeled garlic clove

### Dilled Eggs
- 1-1/2 cups white vinegar
- 1 cup water
- 3/4 teaspoon dill weed
- 1/4 teaspoon white pepper
- 3 teaspoons salt
- 1/4 teaspoon mustard seed
- 1/2 teaspoon onion juice or minced onion
- 1/2 teaspoon minced garlic or 1 peeled garlic clove

### Dark and Spicy Eggs
- 1-1/2 cups cider vinegar
- 1/2 cup water
- 1 tablespoon dark brown sugar
- 2 teaspoons granulated sugar
- 1 teaspoon mixed pickling spice
- 1/4 teaspoon liquid smoke or hickory smoke salt
- 2 teaspoons salt
- 1-1/2 cups cider vinegar
- 1/2 cup water
- 1 tablespoon dark brown sugar
- 2 teaspoons granulated sugar
- 1 teaspoon mixed pickling spice
- 1/4 teaspoon liquid smoke or hickory smoke salt
- 2 teaspoons salt

### Cidered Eggs
- 1-1/2 cups pasteurized sweet apple cider or apple juice
- 1-1/2 cups pasteurized sweet apple cider or apple juice

### Pineapple Pickled Eggs
- 1 can (12 oz.) unsweetened pineapple juice*
- 1-1/2 cups white vinegar
- 2 medium onions, peeled and sliced
- 1-1/2 cups white vinegar
- 2 medium onions, peeled and sliced
*If sweetened pineapple juice is used, omit sugar

Acknowledgements

Recipes adapted and used with permission from:
*Peter Piper Picked A Peck of Pickled Eggs*, Georgia Egg Commission (undated).

Original Acknowledgements on the Georgia Egg Commission publication: Dr. James C. Acton, Department of Food Science, Clemson University; Dr. Walter M. Britton, Department of Poultry Science, University of Georgia; The American Egg Board, Park Ridge, Illinois; and *Preserving and Pickling Eggs at Home*, Cooperative Extension Service, University of Wisconsin.
In this week’s program the Oklahoma Gardening team hits the road to kick off our tour of Southeastern Oklahoma. This diverse corner of the state varies significantly from other areas, with higher rainfall and hilly terrain. The warmer winter temperatures allow for a different assemblage of plant material than can be grown in northern Oklahoma gardens. We will air segments from our Regional Tour throughout the month of July. Join us to learn about research, community projects, specialty crops and more in this part of the state. We will also feature Oklahoma Agritourism with visits to registered sites and information about the program. This week we start with a visit to the Murray County 4-H Community Garden, a home visit in Ardmore, and a close-up look at native palmettos growing in McCurtain County.

Native Palmettos – Of the 2,500 plants in the palm family, just one is found to grow naturally in Oklahoma. The Dwarf Palmetto (Sabal minor) is one of just a handful of palms native to the United States. In this segment we follow plant enthusiast Wes Lanphier into the swampy woods of McCurtain County to look at a dense population of dwarf palmettos and learn more about these magnificent plants.

The dwarf palmetto is a perennial palm that grows throughout the Gulf States, extending northward into the Carolinas, Georgia, Arkansas and Oklahoma. The plants are found primarily in lowland swamps, floodplains and river terraces. These moisture-loving plants are also surprisingly tolerant of drought conditions and are cold hardy to zone 6. Plants can tolerate short periods of temperatures as low as −22°C (−7.6°F). Extended periods of drought or cold can cause the leaf tips to turn brown. The dwarf palmetto tolerates a range of light conditions, from full shade to full sun, but tends to grow taller and fuller in shady conditions.

The palm-shaped leaves are evergreen and can remain on the plant for years. Mature plants produce clusters of small white blooms followed by black fruits. Plants are propagated from seed. The seedlings have a grassy appearance and are often not recognized as palmetto seedlings. The fully divided fan-shaped leaves do not develop until the plant has grown for several years.

Dwarf palmettos make an excellent addition to the ornamental landscape, providing evergreen color, excellent, upright structure and a touch of the tropics.

The Home Gardens of Sarah Thompson, Carter County Master Gardener – In this segment we travel to Ardmore to visit the home gardens of Sarah Thompson. Sarah is a Carter County Master Gardener and has been tending her landscape with passion for thirty five years. Everything is hand-built, from the trellises and arbors, to the berms and beds. Her large vegetable garden feeds family and friends alike and provides much bounty for preserving. Plants
Murray County 4-H Community Gardens – In this segment we join Carl Oblander, Murray County Extension Educator for Agriculture and 4-H Youth Development, to visit the community gardens he recently built with his team of 4-H and Junior Master Gardeners. A new project, the community gardens serve to educate the youth on how to grow healthy produce, tend the land and protect the soil. They also serve as a living classroom for the Junior Master Gardener curriculum.

The youth gardeners raise a variety of vegetables to share with their families, and extra produce is sold at the newly established Sulphur Farmers Market. Funds raised on sales go back to support the 4-H programs. A great deal of community involvement and support has helped make this project a great success. A handful of the 4-H gardeners join us to share their experiences in the gardens.


Parent Volunteers: Gene and Teresa Allen, Mary Edmonds, Amanda Gee, Chris and Patricia Howe and Toni Baringer.

Sincerely,
Kim Rebek, Oklahoma Gardening Host

Writing by: Sonja Pawlik
Writing by: Sonja Pawlik

Oklahoma Gardening Information Sheet (#3701)
OETA air date: July 3 and 4, 2010
OETA airtime: Saturday 11:00 a.m., Sunday 3:30 p.m.

Cutting Back Sedum – Stonecrop (Sedum telephium ‘Autumn Joy’) often grows so vigorously in the summer that by fall when it blooms, it is falling all over the garden. To help avoid flopping later in the season, we cut our plants back now to promote more compact growth. Use the Fourth of July as a date for scheduling this task. Simply cut the stalks back to a height one third to one half the present height. New growth will quickly start to fill the plant back in.

Grapevine Fertilization – We began to manage the soil fertility of our grape planting early this season prior to planting. Adjustments in phosphorous and potassium, as well as pH were made.
as determined by a soil test. Nitrogen is not applied before planting as it will be lost from the soil before the plant can utilize the nutrient. We also do not apply nitrogen at the time of planting as this can cause root damage. Nitrogen is applied after the growth has begun, at least four to six weeks after planting and not before the end of June. Nitrogen is the critical nutrient utilized by developing plants; however, applications must be made carefully. Excessive nitrogen can damage the vine or cause rapid, weak growth. The resulting wood is susceptible to cold injury.

Before beginning, loosen the soil around the plant by gently cultivating. You do not want to damage the roots, so do not cultivate deeply. Spread ¼ pound of 10-10-10 garden fertilizer in a circle 12 to 18 inches away from the trunk. If your soil tests have indicated adequate or high levels of phosphorous or potassium in the soil, a nitrogen only fertilizer, such as 10-0-0 will suffice. Be careful not to get fertilizer against the trunk because this will damage the vine. It is best to apply fertilizer when the foliage is dry and avoid getting any on the leaves. If the fertilizer does come in contact with leaves brush it away immediately afterward.

Once you have spread the fertilizer, gently work it into the soil to a depth of 2 inches. Apply about one inch of water if rain is not expected within a day or two. We will not need to fertilizer our grapes again until next season.

**Horticulture Tips for July with David Hillock**
- Watering plants properly is an important task during the summer. Water deeply to encourage deep root growth. Become familiar with plants’ needs.
- Towards the end of the month, divide and replant spring-blooming perennials like iris, peonies and daylilies if needed.
- Make fall vegetable garden plantings in late July. ([HLA-6009](#))
- Continue protective insect applications on the fruit orchard. A good spray schedule is often abandoned too early. Follow directions on last application prior to harvest. ([EPP-7319](#))
- Providing birdbaths, shelter and food will help turn your landscape into a backyard wildlife habitat. ([HLA-6435](#))
- Water compost during extremely dry periods so that it remains active. Turn the pile to generate heat throughout for proper sterilization.

**Turf**
- Sharpen or replace mower blades as needed. Shredded leaf blades are an invitation to disease and allow more stress on the grass.
- Mowing heights for cool-season turf grasses should be at 3 inches during hot, dry summer months. Gradually raise mowing height of bermudagrass lawns from 1 ½ to 2 inches.
- Vegetative establishment of warm-season grasses should be completed by the end of July to ensure the least risk of winter kill. ([HLA-6419](#))
- Brown patch disease of cool-season grasses can be a problem. ([HLA-6420](#))
- Fertilization of warm-season grasses can continue if water is present for growth. ([HLA-6420](#))

**Native Splendor: Purple Prairie Clover and Blanket Flower** – Most of us are familiar with blanket flower or *Gaillardia*, which is our state wildflower and an Oklahoma Proven plant. This selection of Gaillardia is called ‘Arizona Sun’ and is popular for its large flowers, compact form, and long blooming period. The red-orange daisy-like blooms have a red eye and a bright yellow fringe. Flowers appear earlier than many other gaillardia selections and bloom all summer long.
into fall. ‘Arizona Sun’ is perennial, and like all blanket flowers, is quite drought and heat tolerant once established. The common name, blanket flower, came about since the striking three-colored flowers of gaillardias resemble the colors commonly found in blankets woven by Native Americans. Use gaillardia at the front of a sunny border where it will attract butterflies to the garden.

A less commonly known native perennial is Purple Prairie Clover (Dalea purpurea). It produces tiny purple flowers in dense, cone-like heads that remind me of pineapples. The cones can be as large as 2 inches long and stand atop erect, wiry stems. The showy flowers attract butterflies and the plant is host to the dogface butterfly, a dainty yellow member of the Sulfur Family. The flowers are complemented by fine delicate foliage. Plants have deep tap roots enabling them to withstand drought.

Prairie clover is a member of the Fabaceae or Pea family; it fixes nitrogen in the soil and is a very important component of the prairie ecosystem. The plants are also highly nutritious as forage but can be damaged by heavy grazing. Native Americans enjoyed chewing the roots for their sweet taste. The leaves were also dried and used for tea. The Pawnee tribe calls the plant broom weed, because the tough stems were once used to sweep out lodges.

**Gardening in Miniature** – In this segment our Garden Manager Jane Carter joins us to share her designs for the miniature and container gardens she created for our Patio Garden this season.

**Disc Planters:** Jane started by creating undulating berms for visual interest, depth and movement. They were topped with Zoysia sod that we have intentionally left un-mowed. This creates a nice, lush, green solid-colored backdrop for the disc plantings, so they can take center stage. The planters were created with plow discs that were originally used on agriculture implements for breaking up the soil. They were welded onto old 4” diameter steel pipe. Jane alternated both the sizes of discs and the heights at which they were placed. This variation serves to further accentuate the visual interest and movement that was started at ground level with the rise and fall of the berms. Before planting, Jane placed a small piece of screen over the existing holes in the discs to prevent the loss of any soil media. Then she used a well-drained soil mix, which is needed for cactus and other succulents, consisting of 1/3 course sand, 1/3 topsoil, and 1/3 compost and mounded it into the discs. After planting the cacti, she topped off the soil mix with some decorative rock, which is important to prevent the mounded sandy soil from washing away from the roots in heavy rains like we have experienced lately!

**Wagons:** Jane is always on the look-out at estate sales and salvage yards for old or antique items that can be repurposed into planters for the garden. These children’s wagons and old wash tubs are some of her favorite finds. Jane drilled holes for drainage and used the same soil mix as the disc planters. She used blue tumbled glass and small pieces of rock to create a “lake” for the landscape. Then she used some Dwarf Boxwood (Buxus sempervirens), Dwarf Juniper (Juniperus communis) and ‘Autumn Joy’ Sedum to imitate trees, serving as anchors and creating a back-drop, just as you would in a normal size landscape. The rest was filled in with dwarf plants and succulents, imitating shrubs and groundcovers. Mulch with a natural colored pea gravel to imitate soil and rock. The nice thing about the wagons is that they are mobile, so if you decide you want them in a different location, you can just roll them any place you want!
Raised Corrugated Aluminum Planter: Jane wanted a raised planter so that plants of such small stature could be more easily appreciated. She chose standard 4’x 8’ corrugated aluminum panels, which are normally used for roofing and siding. She liked the contrast of this shiny, modern element with the rusty steel of the discs and antique wagons and also liked the vertical element. We cut the panels to 18” lengths and secured them with roofing screws to treated 4 x 4’s every 4’ and at all of the corners. We then topped it off with 2 x 6’s also screwed into the 4 x 4’s, which provides a place to set and enjoy the garden. 2” x 2”s were added under the 2 x 6’s to add trim and further support the aluminum against the pressure created by the weight of the soil.

The goal, again, was to create or imitate a landscape. Jane did this by varying the height of the soil and adding other natural features, such as water and stone. She also used miniature pea gravel in a natural color as a ground cover for this planter. Because this garden is in full sun, Jane utilized many interesting succulents to serve as miniature trees, shrubs and ground covers. She chose them for their unique shapes, textures and colors to provide maximum contrast and interest.

Tea for Two!: Jane attached a sturdy wire mesh to the table top by wiring it every few inches. Then she added a cut-to-fit cocoa liner around the sides and trimmed a piece of landscape fabric to cover the bottom. She added a “skirt” or “table cloth” held by elastic at the top, but they aren’t necessary. She used a light potting soil and added “dishes” after drilling holes for drainage. You can use a ceramic drill bit to do this. Jane also put some small stakes through the holes to help secure the “dishes” in place. Next, she planted them with various succulents. Jane painted the table and chairs the same cobalt blue as the fountain located at the other end of the garden. This is also the same color as the blue tumbled glass used in the bottom of the fountain and used to represent “water” in some of the other miniature planters.

This was a fun garden to create and it has been just as fun watching visitor’s reactions to it!

**Cooking with Barbara** – Barbara Brown, Extension Food Specialist, prepares a trail mix.

**Trail Mix**

- 1/2 cup lightly salted peanuts
- 1/2 cup unsalted almonds
- 1/2 cup dried apple pieces
- 1/2 cup dried cranberries
- 1/2 cup oat circles
- 1/2 cup unfrosted whole wheat cereal squares

Mix all ingredients in a large bowl. Stir well. Divide into seven equal amounts in small resealable plastic bags.

Serves 7 (1/2 cup per serving).

**Nutrition Facts**

Servings per recipe: 7
<table>
<thead>
<tr>
<th><strong>Calories 179</strong></th>
<th>Calories from fat 99</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>% Daily Value</strong></td>
<td></td>
</tr>
<tr>
<td>Total Fat 11g</td>
<td>16%</td>
</tr>
<tr>
<td>Saturated Fat 1g</td>
<td>6%</td>
</tr>
<tr>
<td>Cholesterol 0mg</td>
<td>0%</td>
</tr>
<tr>
<td>Sodium 50mg</td>
<td>2%</td>
</tr>
<tr>
<td>Carbohydrate 20g</td>
<td>7%</td>
</tr>
<tr>
<td>Dietary Fiber 4g</td>
<td>15%</td>
</tr>
<tr>
<td>Protein 5g</td>
<td>10%</td>
</tr>
<tr>
<td>Vitamin A: 2%</td>
<td>Vitamin C: 5%</td>
</tr>
<tr>
<td>Calcium: 4%</td>
<td>Iron: 10%</td>
</tr>
<tr>
<td>Folacin: 9%</td>
<td>Potassium: 4%</td>
</tr>
</tbody>
</table>

Sincerely,
Kim Rebek, *Oklahoma Gardening* Host
Blueberry Fertilization – Kim opens the show with the third and final fertilizer application to our blueberry plants for the season. For these acid-loving plants, an ammonium form of nitrogen fertilizer is applied; we are using urea. Our blueberries are in the second year of growth and require 0.5 ounce of urea around each plant. Nitrogen needs will increase as the plants age and come into production. Next season will be the third growing season for our plants and we will finally be able to produce a crop.

Renovating Strawberries – The heavy rains this spring have caused some problems in our strawberry beds. Many strawberry growers may be experiencing soft or watery fruits. This is simply because there has been so much rain and our beds have not been able to dry, despite the fact that they are raised. Soft fruits should be eaten or frozen immediately as they will not keep. We are also experiencing a disease problem with botrytis fruit rot. This is a common disease during cool, wet springs. Practice good sanitation and remove the infected fruits from the garden to reduce the disease pressure next season. Do not dispose of these in your compost. Next year, we can also follow a preventive chemical control plan to reduce disease problems in the bed.

Once we have all the diseased berries cleaned up we can start to renovate our beds. June bearing strawberry plants can maintain production for several fruiting seasons if they’re properly renovated after harvest. Renovation prepares the bed for the next growing season. It involves four steps: mowing the plants, cultivating between rows, thinning plants and fertilizing the bed.

After harvest is complete, mow the foliage off leaving 1 to 2 inches of stem above the crowns. If your plants are in the ground you can use a lawn mower to cut back the plants. In a raised bed, such as ours, a set of shears will do the job. Be careful not to scalp the crowns of the plants, which is the growing point of the plant.

Next, cultivate between the rows to narrow the width of each row to 10 to 12 inches. For large beds, a tiller can be used. After tilling, thin the plants if they have grown in too densely. Leave the largest, healthiest looking plants, thinning to a spacing of 3 to 4 inches between plants. If you notice diseased plants, be sure to remove and destroy these as you work.

Once you have finished renovation, apply a fertilizer to the bed. The general recommendation is to apply 2 to 3 pounds of 10-10-10 balanced fertilizer per 100 feet of row. This single application should be sufficient to sustain summer growth and allow the plants to set flower and fruit buds for next season’s crop.

This is a good time to weed the bed and lay out straw as a mulch to preserve soil moisture and cool soils.

Renovation is only used with June-bearing strawberry plants. For everbearing varieties, such as our
Ozark Beauty, we will simply narrow the rows once the fall harvest is complete.

**Cedar Mulch Studies with Dr. Rod Will** – In this segment Dr. Rod Will and graduate student Adam Maggard of the OSU Department of Natural Resource Ecology and Management joins us to look at the benefits of mulching with Eastern Red Cedar. Eastern Red Cedar (*Juniperus virginiana*) is a native plant that has become invasive in prairie habitats. Historically, natural fires kept Eastern Red Cedar in check on the prairies, but with the suppression of wildfires, the trees have spread aggressively. The best way to manage Eastern Red Cedar is to prevent invasion through prescribed burning or good land management practices. However, if a landowner misses the window of opportunity to eliminate cedar when they’re small, mature trees require cutting and removal. The cost of removal prevents people from taking action. Selling removed cedar trees for use as mulch materials is one way landowners can offset the cost of clearing land. This offers an economic incentive to care for the land and a potential way to restore prairie. Red cedar mulch is locally produced, keeps money in the state, provides tax receipts, and helps reduce red cedar on the landscape.

Through funding from the Oklahoma Center for Advancement of Science and Technology, Rod has worked with a number of collaborators at OSU including Tom Hennessey, Janet Cole and Craig McKinley to study the use of Eastern Red Cedar as mulch material. Adam Maggard, a graduate student working with Dr. Will, joins us to explain his ongoing research.

The study compares Eastern Red Cedar to a number of commonly used mulch materials such as pine bark, cypress mulch and hardwood mulch. Adam is measuring soil moisture, decomposition, soil pH and nutrients, soil temperature, weed suppression, termite activity and plant growth in plots covered with the different mulch materials, as well as control plots that have no mulch. Over two years, a variety of trees, annuals and perennials have been included in the study including Shumard Oak (*Quercus shumardii*), Eastern Redbud (*Cercis canadensis*), Impatiens, Begonia, Lantana, Salvia, Coleus, Black-eyed Susan (*Rudbeckia hirta*), Blanket Flower (*Gaillardia* hybrid ‘Arizona Sun’), Sweet William (*Dianthus* species) and Stonecrop (*Sedum telephium* ‘Autumn Joy’). They have found that all mulch materials increases soil moisture, decreases soil temperature and increases plant growth. In terms of plant growth and soil variables, red cedar mulch ranks among the best. The study has also included a survey to identify gardener’s preferences for different mulch materials. Preliminary findings indicate red cedar mulch ranks favorably in visual preference.

**Native Splendor Garden: Northern Sea Oats and Buffalograss** – Oklahoma has a number of native grasses and we have several planted in our Native Splendor Garden. Northern Sea Oats (*Chasmanthium latifolium*) is a most adaptable and useful grass because it grows well in the shade and tolerates dry soils. Its native habitats range from coastal sand dunes to dry woods. On sandy sites it acts to stabilize the soil, and is great for securing soil in critical areas of erosion such as on slopes. It is used often as a tall groundcover and looks best when planted in mass.

Another common name for *Chasmanthium* is Fish on a Pole. This name comes from the attractive seed heads that form on stalks with flat, dangling, oat-like seed heads that resemble fish hanging from a fishing pole. The seed heads are often cut and dried for use in arrangements. They will keep for a very long time once dried. In the garden, the seeds can be somewhat problematic, as the plants will readily seed and spread through the garden. We find sea oats popping up in the beds near to where we have clumps growing. It is easily removed, or you can manage seeding by removing the mature seed heads once they have turned brown, before they release the seeds.
Another small grass is Buffalograss (*Bouteloua dactyloides*). While we are using it as an ornamental grass, it is more commonly used as turfgrass. Buffalograss is, perhaps, our only truly native turfgrass. It is tolerant to prolonged droughts and to extreme temperatures, and requires very little irrigation or fertilization. Buffalograss forms a fine textured, relatively thin turf with a soft blue-green color.

Buffalograss is native throughout the Great Plains from Mexico to Montana. It is one of the grasses that supported the great herds of buffalo that roamed the Great Plains. Buffalograss also provided the sod from which early settlers built their houses.

**Cooking with Barbara** – Barbara Brown, Extension Food Specialist, makes a light hummus.

**Light Hummus**

- 1 15-ounce can chick peas (garbanzo beans), rinsed and drained
- 2 cloves chopped garlic
- 1 tablespoon tahini*
- 6-8 tablespoons reduced sodium vegetable broth
- 2 tablespoons fresh lemon juice
- 1/2 teaspoon extra virgin olive oil
- 1/2 teaspoon salt
- 1/2 teaspoon ground black pepper
- Hot pepper sauce (optional)
- Paprika (optional)
- Cut raw vegetables and/or pita bread wedges.

1. Put chickpeas, garlic, tahini, lemon juice and olive oil in a blender or food processor. Blend on high until mixture is coarse but smooth.
2. Add salt, pepper and hot pepper sauce, if using, and blend in.
3. Transfer hummus to a serving bowl. If desired, sprinkle lightly with paprika. Serve with cut-up raw vegetables and pita bread.

Serves 10 (2 tablespoons per serving).

*Tahini is a sesame seed paste. While there is no good substitute, you could make your own by combining 1/4 cup each toasted sesame seeds and vegetable oil plus 1 teaspoon toasted sesame oil in a blender. Blend until the mixture is smooth.

**Nutrition Facts (without hot pepper sauce and paprika)**

<table>
<thead>
<tr>
<th>Servings per recipe: 10</th>
<th>Calories 70</th>
<th>Calories from fat 18</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>% Daily Value</td>
<td></td>
</tr>
<tr>
<td><strong>Total Fat</strong> 2g</td>
<td>3%</td>
<td></td>
</tr>
<tr>
<td>Saturated Fat trace</td>
<td>1%</td>
<td></td>
</tr>
<tr>
<td><strong>Cholesterol</strong> trace</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td><strong>Sodium</strong> 297mg</td>
<td>12%</td>
<td></td>
</tr>
<tr>
<td><strong>Carbohydrate</strong> 11g</td>
<td>4%</td>
<td></td>
</tr>
<tr>
<td>Dietary Fiber 2g</td>
<td>9%</td>
<td></td>
</tr>
<tr>
<td><strong>Protein</strong> 3g</td>
<td>5%</td>
<td></td>
</tr>
<tr>
<td>Vitamin A: 3%</td>
<td>Vitamin C: 6%</td>
<td>Folacin: 8%</td>
</tr>
<tr>
<td>Calcium: 2%</td>
<td>Iron: 5%</td>
<td>Potassium: 3%</td>
</tr>
</tbody>
</table>

Constructing a Rain Barrel with Jason Vogel – In this segment Dr. Jason Vogel, Stormwater Specialist from the Biosystems and Agricultural Engineering Department, joins us to install a rain barrel. When it comes to rain barrels, homeowners have the choice of purchasing and installing a commercially produced, ready to install system or building one themselves. We are constructing a do-it-yourself rain barrel using a recycled olive barrel.

All of the materials we used to build our rain barrel are inexpensive materials that can be purchased from your local hardware store. You may have to look a little harder to locate the barrel itself, but once you start looking you will find many options available. Ours is a purchased recycled olive barrel, we have also re-used containers that held pool chemicals, soda and more. One of the nice features about this barrel is the removable lid, which will allow us to reach inside as we insert a spigot on the barrel. The size of your barrel will be determined by the space you have available as well as the area of roof from which water is collected. Often we are limited by container size. We have a tight corner, so our barrel is not very large.

Begin by setting a firm foundation for the rain barrel. Once it is full of water, the barrel will be very heavy and can settle into loose soil. The foundation must be strong enough to hold the weight of a filled barrel. Remember, a gallon of water weighs 8.3 pounds, so our 60 gallon barrel will weigh about 500 pounds when it is full. We have already set a base using stone pavers. Cinder blocks also make an excellent foundation.

The height of the foundation will depend on your intended use of the collected water. If you are planning to simply use the water to fill a watering can or bucket, the foundation only needs to be high enough to set a container below the spigot. If you intend to connect the barrel to a drip irrigation system, the higher you can place the barrel, the greater pressure you will be able to create for moving water. As a rule of thumb, every 2.3 feet of elevation will generate 1 pound per square inch of water pressure. The elevation is measured from the water surface, so a full barrel will generate more pressure.

The first step in preparing our barrel is to attach a spigot. The spigot needs to be securely fastened with a good fitting to withstand the physical pressure of repeatedly opening and closing the spigot. Your barrel may come with a hole drilled for the spigot, or you can drill one yourself. We also need to drill a hole in our lid where water will enter the barrel. This hole needs to be large enough to accommodate a 1 ½ inch hose.

The next step is to construct what is called a first flush device. This unit is designed to collect the initial water that falls on the roof, which will have washed impurities from the roof. By collecting this first wash of water separately, we keep the water in our barrel cleaner. The first flush device is constructed...
out of a 2 foot section of 3-inch PVC. We have a cap for the bottom of the tube, which has a very small hole drilled into it. This hole will allow the water to drain very slowly out of the first flush device. If you want, you can use a small diameter tubing to carry this water away from your foundation. Next we have a series of “T” connectors. The lower one has a 1 ½ inch side connection. This is where we connect the hose that will drain water into our rain barrel. The upper “T” is an overflow outlet. Once our rain barrel is full, any excess water washing through the downspout will overflow through this opening. This prevents water from backing up in our gutters and overflowing along the house. You can use hosing to carry the overflow water away from the foundation of your house. We have had a problem with water pooling in front of our doorway after a heavy rain, so we will lead our overflow water farther south, away from the door. The final PVC section attaches the first flush device to the downspout. We have painted all of the PVC and flexible tubing to match our building. The paint will also protect the PVC from light and extend its life. Now we need to prime and glue all of the pieces together.

We are ready to install our rain barrel and first flush device. First, we need to cut away a section of the downspout. To determine how high the cut should be made, set the rain barrel in place and connect the first flush device. Maintaining a downward slope in the tubing, mark the height of the first flush device on the guttering and cut the excess with a hacksaw. Attach the first flush device to the downspout and secure it to the wall. You can use the existing gutter strips to secure the first flush device, drilling screws right into the PVC.

Insert the water intake hose into the hole in the lid of the rain barrel. We are also attaching hose to run the overflow water away from our building foundation. This can be hidden under mulch or a thin layer of soil, so long as it slopes away from the building.

Our rain barrel is now ready to collect water. We will use that water to irrigating the surrounding beds. For this, we need to install drip tubing. The area that can be irrigated by the rain barrel is limited by water pressure. If you are collecting enough water to irrigate a large area and want to move the water farther, you can add a fountain pump to increase water pressure.

You can learn more about installing rain barrels by visiting Dr. Vogel’s LID website at [http://lid.okstate.edu](http://lid.okstate.edu).

**4H2O Program** – The rain barrel demonstration in our studio gardens is part of a grant from the Coca-Cola Foundation through the National 4-H Council. Dr. Jeff Sallee, 4-H Extension Specialist, has worked over the past year to establish a variety of water-related education demonstrations throughout the state. To date, demonstrations have been established in the following counties: Muskogee, Greer, Cleveland, Major, Murray, Alfalfa and Bryan. These range from a mobile rain barrel educational display to a 12,000 gallon rain harvesting and irrigation system.

An educational campaign, coupled with the 4-H curriculum 4H2O, has addressed practical, day-to-day practices that families can follow to reduce the amount of water they use each day. As part of this educational campaign, Dr. Sallee has been encouraging homeowners to take the 40-Gallon challenge, a pledge to save water in and around the home.

You can learn more about the 4H2O curriculum and take the 40-Gallon Challenge by visiting: [http://oklahoma4h.okstate.edu/4h2o](http://oklahoma4h.okstate.edu/4h2o).
**Native Splendor Garden: Ferns** – Ferns make an excellent addition to the shade garden, and Oklahoma has a number of native ferns which we have featured in our Native Splendor Garden. Autumn Fern (*Dryopteris erythrosora*) ‘Brilliance’ is very popular and widely available commercially. It is a colorful groundcover with pink fiddleheads that turn coppery orange as they unfurl. The fronds turn a dark green with age and remain intact well into winter. New growth continues through the season, giving a colorful tapestry effect of copper and green from spring to late fall.

Autumn Fern is hardy throughout Oklahoma. However, it requires a moist growing environment. It is intolerant of drought and poor soils. Autumn Fern is used to add a touch of the tropics to a garden, or as a backdrop for shade-loving flowering perennials.

Another native fern is the Lady Fern (*Athyrium felix-femina*). Lady Fern is a deciduous, perennial fern that grows fairly large, reaching 2 to 3 feet in height. Its light green, lacy leaves are two feet long and 6 to 9 inches wide. Many Lady Ferns will grow in a group in the shape of a circle. As they grow farther and farther outwards, the centers die away, leaving a ring of Lady Ferns.

Ghost Fern (*Athyrium* hybrid) is a hybrid between Japanese Painted Fern (*Athyrium niponicum* 'Pictum') x Southern Lady Fern (*Athyrium filix-femina*). It combines the best features of both parents, with the height and upright structure of Lady Fern, and the silvery grey foliage of Japanese Painted Fern. The result is a beautiful formal appearance that really stands out in the shady garden.

**Preventive Grub Control in Turf with Tom Royer** – In this segment Dr. Tom Royer, State IPM Specialist at OSU, joins us to discuss preventive approaches to managing grubs in turf. White grub is a general term used to describe certain beetle larvae whose immature stage is a white colored grub. In Oklahoma, the species of greatest concern from a pest perspective include:

- Japanese beetle, *Popillia japonica*
- Southern masked chafer, *Cyclocephala immaculata*
- May and June beetles, *Phyllophaga* species

The larvae of these species feed on the roots of turfgrass, weakening the plants and causing stress that appears much like water stress. This is because the plants are unable to take up adequate water through damaged roots. The best strategy to managing any pest is to use an Integrated Pest Management strategy in which a number of management tools are used to control beetle populations. We begin by following good cultural practices to maintain a healthy lawn. These include:

- Thatch management
- Water management
- Fertility management (specifically, do not over fertilize)

Many of the adult beetles of these turf pests are attracted to lights in the landscape. We are all familiar with the May and June beetles bumping into our windows on spring nights. In the landscape, areas with lighting tend to have higher concentrations of beetle larvae. The beetles are less attracted to sodium vapor lights, and switching our landscape lighting to these bulbs can help reduce beetle problems. We can also select resistant turf varieties as a way to reduce pest pressure. For example, bermudagrass can tolerate more grub damage than other types of turfgrass.

Several biological controls are used in managing white grubs. Typhiid and Scoliid wasps are naturally occurring in the landscape and feed on white grubs. Because they appear menacing, homeowners often consider these beneficial insects as a nuisance. Applications of microbial biological control agents can
be made much in the same manner in which we apply pesticides. The bacteria *Phenbacillus papillae* and the fungi *Beauveria* and *Metarhizium* both attack white grubs. Likewise, parasitic nematodes have been used in white grub management. The most common commercially available nematode is *Steinernema*, however it is not as effective in managing white grubs as *Heterorhabditis*.

Of course there are also chemical controls used to manage white grubs. White grub damage is most apparent in the fall, when the larva are large and their damage extensive. However, the larvae are most susceptible to pesticides when they are young. For this reason, preventive chemical applications should target the young larvae. Dr. Royer has been studying the flight patterns of the adult beetles to identify the ideal times for making pesticide applications to newly hatched larvae. Their findings indicate the ideal time for pesticide applications to prevent grub damage is June through early July, as shown on the diagram below.

**Flight Periods for Major Turf-infesting White Grub Species**

<table>
<thead>
<tr>
<th>April</th>
<th>May</th>
<th>June</th>
<th>July</th>
<th>August</th>
<th>Sept</th>
</tr>
</thead>
<tbody>
<tr>
<td>(preventive)</td>
<td></td>
<td></td>
<td></td>
<td>(corrective)</td>
<td></td>
</tr>
</tbody>
</table>

*Phyllophaga bipartita*, *calceata*, *congrua*, *Phyllophaga crassissima*, *profunda*, *Phyllophaga crinita*, *submucida*, *torta*; *Cyclocephala* spp.

**Announcements:**
OSU’s Annual Vegetable Field Day at Bixby Research Station will be held Wednesday, June 23 from 10 a.m. until noon, with lunch to follow. If you are interested in attending the field day and lunch please RSVP by 5 p.m. June 22 by calling 405-744-5404. Bixby Research Station is located at 13711 S. Mingo Road, near Bixby.

Sincerely,
Kim Rebek, *Oklahoma Gardening* Host

---

**Oklahoma Gardening Information Sheet (#3650)**

**OETA air date:** June 12 and 13, 2010

**OETA airtime:** Saturday 11:00 a.m., Sunday 3:30 p.m.

**Solar and Wind Applications to the Green Cottage with Scott Frazier** – In this segment Assistant Professor of Biosystems and Agricultural Engineering Scott Frazier joins us to talk about some of the other conservation and alternative energy applications on our Green Cottage.

The GREEN Cottage employs a variety of alternative energy and resource conservation techniques applicable to the home landscape. The cottage serves as an educational tool and research site. Systems
are monitored regularly, and collected data is used to evaluate the viability of such systems for Oklahoma consumers. The home-like setting allows visitors to visualize the integration of components in a real landscape. Systems include passive solar heating and lighting, electrical energy from the sun and wind, rainwater capture and redistribution, and an energy saving landscape plan.

The renewable energy system providing electrical power to The GREEN Cottage is a combination solar photovoltaic (PV) and wind turbine generator system. It is a stand-alone system and is not connected to the municipal electrical grid. Often times, the wind is blowing on days the sun is not shining. The wind turbine works in conjunction with the photovoltaic system to keep the batteries charged during cloudy conditions. The hybrid solar-wind system was installed to demonstrate the full range of possibilities for utilizing renewable energy in the home landscape. Some areas of Oklahoma are better suited to capturing the power of the wind than others.

Solar radiation provides the main source of energy supplying approximately 90% of the stored electrical power. Because homeowners are more familiar with alternate current electricity, our system converts direct current (DC) to alternate current (AC). This allows us to use common household tools and lighting systems in the workshop housed inside The GREEN Cottage.

**Hybrid Solar-Wind Energy System**

**System Capabilities:**
- Power total of 15 amps at 120 Volts for 3-4 hours per day (1,800 Watts)
- Estimated energy generation in Stillwater is 1,071 kWh per year
- System reserve capacity of 2 days (no sun or wind)

**Typical Loads:**
- Power Tools (Circular Saw) = 1,200+ Watts
- Power Tools (3/8” Drill) = 500 Watts
- Computer = 100 Watts
- Lighting = 100 Watts

A passive solar thermal wall heats The GREEN Cottage in winter. This heating system does not use electrical energy; instead, it captures and circulates the heat energy of the sun. The passive solar thermal wall is easy and inexpensive to build and install. It functions much like a miniature greenhouse heating air in a wood-framed collection cell attached to the exterior wall of The GREEN Cottage. Black paint and a dark metal screen inside the cell maximize heat capture from the sun. Convection currents circulate air through vents cut in the wall at floor and ceiling levels. As air is heated in the collection cell, it rises and enters The GREEN Cottage through the upper vent. Cool air inside The GREEN Cottage falls toward the floors and is pulled back into the cell where it is heated and re-circulated. The circulation and heating of air continues as long as the sun is shining on the collection cell.

**Don’t Bag It: Grass Clippings** – Yard waste contributes significantly to landfill, increasing the total volume of residential waste by 20 to 50% during the months of March through October. But yard waste is very useful when left in the landscape. In fact, we need to change the way we think of it, instead of waste, think about our grass clippings and fallen leaves as free fertilizer.

In nature, fallen leaves and dead plants decompose in place and the nutrients in the plant tissues are added back into the soil. The decomposing tissue also adds organic matter to the soil, improving the water and nutrient holding qualities. We can give back to the soil in our yards by leaving our lawn clippings in place. We will save time, energy, and money when we follow the “Don’t Bag It” lawn care
plan. And our lawns will become more efficient at using water and more evenly green in color.

The “Don’t Bag It” plan saves us time in mowing by not bagging clippings and the mower will be easier to push without the heavy bag attachment. We save money in the cost of garbage bags and disposal bills. And our landfills will last longer when they are not filled with plant tissues.

Some people are concerned that grass clippings left in the lawn will contribute to thatch. Thatch is caused by tough runners, rhizomes, and roots. Grass clippings are very tender and decompose quickly; they do not contribute to thatch.

The “Don’t Bag It” plan follows a regular mowing, fertilization, and watering schedule. Our goal is to have a slow, even-growing lawn. As a rule of thumb for mowing, remove only one-third the leaf blade at a time. Adjust the height of your mower to achieve this goal. You will most likely need to cut less of the blade with each mowing. You do not have to use a mulching mower. However, mulching mowers or mowers with a mulching kit installed will cut the leaf blades very fine, improving the appearance of the lawn. If you simply cannot leave the grass clippings in place, rather than bagging, add them to your compost pile.

Water and fertilize your lawn regularly, but do not over fertilize. Excess fertilization will cause excess growth, increasing your need to mow. Slow-release fertilizers work best with the “Don’t Bag It” plan.

You can learn more about the “Don’t Bag It” lawn care plan from OSU Fact Sheet L-253.

Native Splendor Garden: Indian Pink and Butterfly Weed – The Indian Pink (Spigelia marylandica) plant has attracted a lot of attention in our garden this spring with its magnificent blooms. Indian Pink is a clump-forming perennial which occurs in moist woods and streambanks from Texas to Florida and North to Illinois and Indiana. It is relatively easy to grow and tolerates a wide range of soil conditions and various amounts of sun or shade. The plant prefers a moist soil and will bloom well even in heavy shade.

The showy flowers make this native an excellent landscape plant. The crimson tubular flowers have a bright yellow throat that flares at the top creating a yellow star. The flowers are a favorite of hummingbirds. In fact, Indian Pink is listed among the top ten plants for attracting hummingbirds. They also make a good cut flower. Blooms appear late May into June.

Looking at these bright red flowers makes you wonder where the name Indian Pink comes from. Another common name for Spigelia is pinkroot, and so the pink in the name refers not to the flower but the root. Another common name, “Worm grass” refers to the Native American practice of using extracts from the root to rid the body of parasitic worms. The plant was also used by the Cherokee and other American Indians tribes as a ritual and ceremonial herb to induce visions and foretell the future.

Although Spigelia marilandica has been used in traditional medicine, all parts of the plant contain alkaloids that may cause vision problems, dizziness, muscle spasms, increased heart action, convulsions and death. This one is best grown for its pure beauty.

Another prolific bloomer is Butterfly Weed (Asclepias tuberosa). We will see this blooming all summer long in the garden as well as in the prairies and meadows to which it is native. Flowers are a nectar source for many butterflies and of course many of us are familiar with the colorful monarch butterfly larvae that use the butterfly weed leaves as a food source.
Flowers give way to prominent, spindle-shaped seed pods that are 3-6" long. The pods split open when ripe releasing numerous silky-tailed seeds for dispersal by the wind. Plants may freely self-seed in the landscape if seed pods are not removed prior to splitting open. The intact seed pods are valued in dried flower arrangements. While butterfly weed may be one of our most common natives, it is also among the showiest and should be considered for the landscape.

**Air Layering Roses** – Air layering is a propagation technique in which an aerial portion of an existing plant is rooted to create a new, smaller plant. It is a useful technique to propagate large, overgrown house plants such as rubber plant, croton or dieffenbachia that have lost most of their lower leaves. It is also used on woody ornamentals such as azalea, camellia, magnolia, and holly as well as some fruit trees. Air layering is the quickest way to get a nice size rose bush on its own root stock.

It is believed air layering was developed centuries ago by the Chinese. It has been used successfully as a means of propagating some of the more difficult-to-root plants. Because it requires excessive care and patience, air layering is generally used only for plants that do not root easily by other less complicated methods.

The basic procedure involves wounding the stem or branch of a plant and enclosing the wounded area with moist sphagnum moss or similar rooting medium until roots develop from the wound.

For optimum rooting, make air layers in the spring on shoots produced during the previous season or in mid-summer on mature shoots from the current season's growth. On woody plants, stems of pencil size or larger are best. The stem may be much thicker on the more herbaceous house plants.

1. Choose an area just below a node and remove leaves and twigs on the stem 3 to 4 inches above and below this point. This is normally done on a stem about 1 foot from the tip.
2. Remove a one-inch ring of bark from around the stem. With a sharp knife, make two parallel cuts about 1 1/2 inches apart around the stem and through the bark and cambium layer. Connect the two parallel cuts with one long cut and remove the ring of bark, leaving the inner woody tissue exposed.
3. Dust the wound with rooting hormone.
4. Apply a handful of damp sphagnum moss so that it envelopes the wounded portion of the stem. Tying the moss in place with string helps keep it in position while completing the process. The sphagnum moss should be soaked several hours to insure that it is thoroughly moist. Squeeze out surplus water before using, since excessive moisture will result in decay and deterioration of the plant tissue.
5. Using a sheet of polyethylene film approximately 6" x 12" or 8" x 12", depending upon the size of the plant stem, wrap the ball of sphagnum moss using the butchers fold to secure a tight seal where the two ends of the sheet are joined.
6. Draw the upper end of the film snugly around stem making sure that none of the moss is exposed. Fasten securely with electricians tape, taking care that the tape extends beyond the film and adheres to the stem. Repeat the procedure on the lower end, again making sure there is a snug fit. Moisture must not escape and excess moisture must not enter when watering or syringing the plants. Support the plant with stake or splint to prevent breakage at the wounded area.

It will take several weeks for roots to form. Be patient. We will remove the rooted cane once we can see roots penetrating through the moss ball on all sides.

**Cooking with Barbara** – Barbara Brown, Extension Food Specialist, makes a peas and peanuts salad.
Peas and Peanuts Salad

- 2 cups green peas, shelled or 2 cups frozen peas, thawed
- 1 cup lightly or unsalted roasted peanuts
- 1 cup chopped celery
- 1/4 cup chopped red onion
- 3 tablespoons crumbled, crisp bacon
- 1/2 cup reduced fat mayonnaise
- 1 tablespoon fresh lemon juice

1. For fresh peas, blanch shelled peas 1-1/2 minutes. Drain and chill in ice water for 2 minutes. Drain well. Pat dry.
2. In large bowl, combine peas, peanuts, celery, onion, and bacon.

Nutrition Facts (with unsalted peanuts)

Servings per recipe: 8

| Calories | Calories from fat
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>189</td>
<td>117</td>
</tr>
</tbody>
</table>

% Daily Value

- **Total Fat** 13g 21%
- **Saturated Fat** 2g 11%
- **Cholesterol** 8mg 3%
- **Sodium** 171mg 7%
- **Carbohydrate** 12g 4%
- **Dietary Fiber** 4g 14%
- **Protein** 7g 14%

Vitamin A: 6% Vitamin C: 16% Folacin: 13%
Calcium: 3% Iron: 6% Potassium: 7%

Barbara Brown, Food Specialist
Oklahoma Cooperative Extension Service

Announcements – The Central Oklahoma Hemerocallis Society presents the 2010 Daylily Flower Show on Saturday, June 19 from 1:00 p.m. - 4:00 p.m. at the Will Rogers Exhibition Garden Center in Oklahoma City. The event is free and open to the public. Come on out to see one of the best collections of daylilies in Oklahoma.

Sincerely,
Kim Rebek, Oklahoma Gardening Host

*****************************************************************************************************
***
Rain Gardens with Kevin Gustavson – In this segment we visit the home of our 2010 GardenFest speaker Kevin Gustavson. Kevin currently represents the Oklahoma Blue Thumb Program, part of the Oklahoma Conservation Commission (OCC) Water Quality Division. The Blue Thumb Program utilizes trained volunteers for stream monitoring and to conduct outreach education on water quality and conservation issues. Through his job, Kevin promotes the benefits of keeping rainwater onsite in rain gardens, and using native plants to xeriscape in any landscape. Kevin is also a gardener who is converting his own grass lawn into a native plant landscape that maximizes the use of rainwater.

During our visit, Kevin explains the impact home gardeners can have on water quality. We look at ways homeowners can reduce their environmental footprint such as by maintaining wise turf areas, managing fertilization, and reducing run-off. We see how Kevin is managing rainwater in his landscape through the use of eight interconnected rain gardens.

June Horticulture Tips with David Hillock
- Remain alert for insect damage. Spider mites can become a real pest in hot, dry weather.
- Pine needle disease treatments are needed again in mid-June.
- Cultivate and then mulch ornamental beds to control weeds and moderate soil temperature and moisture.
- Softwood cuttings of new growth of many shrubs and trees can be rooted.
- Pinch back leggy annuals to encourage new growth. Fertilize and water appropriately.
- Fertilize established perennials.
- Stake tall perennials before toppling winds arise.
- Protect trees from lawnmowers and weed eaters by mulching or using protective aerated covers.
- Fertilize warm-season grasses; use about 1 lb. actual N/1,000 sq. ft.
- Seeding of warm-season grasses should be completed by the end of June.
- Brown patch disease of cool-season grasses can be a problem.
- Post-emergent control of crabgrass and summer annuals is best performed on young plants.
- Water deeply; one inch per application.

Rainwater Sand Cistern Part 4: Carrying Water to the Cistern – As we work the soil around our rainwater sand cistern, we need to move water from the roof of our Cottage to the cistern. We start by collecting rainwater runoff in gutters that drain toward the east end of the building. The gutter in the front is on a porch, and we thought it would be more attractive to move the water to ground level using a rain chain, rather than a gutter downspout as we have on the south side of the building. Rain chains can be functional, as used here, but are also very decorative and they come in a wide range of styles to match any home. On the south corner of the Cottage we have a traditional gutter downspout.

Once the water reaches ground level, it can be moved across the surface of the soil or below ground to the cistern. Above ground, a small dry creek bed can be used to carry rainwater and add a decorative feature. A solid drain pipe can be used and buried below ground to hide it from view. With both techniques, a gentle slope is necessary to move water downhill toward the cistern.

Dry creek beds have a number of applications in the landscape. They are used to move water away from an area where it collects and pools, or to slow the flow of water that runs down a slope, reducing erosion.
problems. Dry creek beds are also very attractive in the landscape and are often built purely for aesthetic purposes.

Start by determining the path the dry creek will follow. We used hoses to lay out lines in the landscape, and in fact, we used one when creating the shape of our rainwater sand cistern. True creeks twist and curve; a dry creek bed will look more natural if it meanders rather than running straight. The width of the bed is very flexible, but one rule of thumb may help with the design—creeks tend to be wider than they are deep. A 2:1 ratio is about right, with our dry creek being two times wider than it is deep. Our dry creek does not need to be very deep, so it can also be fairly narrow. Another consideration however is the aesthetic appearance. A skinny creek bed might look forced or unnatural in the landscape. Size the dry creek according to its surroundings as well as the volume of water it may carry.

Now we can dig out a shallow trench for our creek bed. The lowest point of our dry creek must be at the end where it empties into the cistern. This will limit the depth we can work. Also, mound the soil excavated from the bottom of the creek up along the sides as you work. This will reduce the amount of digging necessary to make the creek bed deeper than its surroundings because we are raising the sides at the same time we are lowering the base. Tamp down the soil as you work.

The steps for constructing a dry creek are the same regardless of your intended use, whether for drainage or erosion control. However, for the purposes of moving water into our cistern, we will use plastic mulch rather than a fabric weed mat. The plastic will reduce the amount of water lost as the rain moves from roof to cistern. A fabric base would allow some of the water to percolate into the soil before it reaches our cistern. We used plastic liner left over from the installation of the cistern. We have cut it large enough to cover the bottom of the creek bed and also cover the mounds built up along the sides of the bed. Use fabric pins or landscape staples to hold the plastic in place.

Now it is time to add the stone that will be the decorative component of our dry creek bed. Use rocks of various sizes and shapes, but stick to a single type of rock so that the color is consistent. You can use rounded river rock of flatter stones, depending on your personal design style. Place the smaller river rock in the bottom of the channel. Water will flow over this base. Larger river rock can be used on the sides of the bed, and pea gravel can be spread to fill empty spaces. Use larger boulders at the curves and bends of the dry creek and at the head of the creek. Also, set a few boulders at random places along the length of the creek bed. The edges of the dry creek bed can be softened with plantings.

Our cistern will now capture the rain falling on our roof. We will be back later to install the pump that will move water into our irrigation system. We have had a number of people help us with this project. Glenn Brown and Sharla Lovern from OSU’s Department of Biosystems and Agricultural Engineering helped with designing and installing the cistern; Michael Holmes of the Department of Horticulture and Landscape Architecture designed the plantings and aided in site planning; Laura Payne, Keith Reed, Kenton Peters here at the Botanic Gardens; volunteers Mike Adams and Steve Miller pitched in; and Kevin Gragg, our videographer and director, moved more sand and soil than he cares to remember. Thank you to everyone who helped make this project possible.

**Xeriscape Gardening with David Hillock** – Xeriscape gardening, quality landscaping that conserves water and protects the environment, is a concept that has been around since the early 80s. The term Xeriscape was coined in Denver, Colorado in 1978 in an effort to educate the public and encourage them to use less water during the peak summer months. Today the concept takes on many forms such as Water-Wise Gardening, WaterSmart Gardening, etc., but the principles are all the same. Based on seven sound horticultural principles, the Xeriscape concept provides guidelines for the gardener that helps
ensure a beautiful, thriving landscape that also conserves water and is environmentally friendly.

The seven principles of Xeriscape landscaping are not new; they have been practiced in the landscape industry for decades. The concept of combining all seven guidelines into one effort toward landscape water conservation is what makes Xeriscape landscaping unique. The principles are given below:

1. *Plan and design* – planning and design is the foundation of any water-wise landscape.

2. *Consider improving the soil* – soil analysis will determine whether soil improvement is needed for better water absorption and improved water-holding capacity.

3. *Create practical turf areas* – practical turf areas suggest that turfgrasses be used as a planned element in the landscape. Avoid impractical turf use, such as long, narrow areas.

4. *Use appropriate plants and zone the landscape* – appropriate plant selection keeps the landscape more in tune with the natural environment. Both native and exotic plants make up the huge variety of plants available for Xeriscape landscaping. Group plants together based on their watering needs.

5. *Irrigate efficiently* – by simply using efficient irrigation, you can instantly save 30 to 50 percent on your water bill.

6. *Consider using mulches* – use mulches in flower and shrub beds to increase water penetration during irrigations and prevent water loss from the soil through evaporation.

7. *Maintain the landscape appropriately* – appropriate maintenance preserves the beauty of the Xeriscape landscape plus saves water. Pruning, weeding, proper fertilization, pest control and irrigation system adjustments all conserve water.

If you are in the Oklahoma City area and would like to see an example of Xeriscape Gardening, visit the Xeriscape Demonstration Garden at the Bickham-Rudkin Park on 33rd and Rankin Road in Edmond. We also have some new publications, L-332 is a leaflet that highlights the Xeriscape concepts and the demonstration garden in Edmond; L-333 is a leaflet that provides suggested plant material that are drought tolerant or low water requiring plants.

Next week at the Summer GardenFest, a walking tour and discussion period is scheduled where we will discuss the Xeriscape principles in more detail and look at some good Xeriscape plants. Lou Anella will discuss and demonstrate the use of drip irrigation systems.

**Announcements:**
The Central Oklahoma Hemerocallis Society presents the 2010 Daylily Flower Show on Saturday, June 19 from 1:00 p.m. to 4:00 p.m. at the Will Rogers Exhibition Garden Center in Oklahoma City. The event is free and open to the public. Come on out to see one of the best collections of daylilies in Oklahoma.

Sincerely,

Kim Rebek
Oklahoma Gardening Host
May 2010—Oklahoma Gardening Shows
Scroll down to find earlier programs in May or click the date on the right.

Please contact your local Oklahoma Cooperative Extension Service Office for more educational information on garden-related topics. If you need further information about this week’s show, call (405) 744-5404 or visit our website http://www.oklahomagardening.okstate.edu. Thank you for your continued support!

Oklahoma Gardening Information Sheet (#3648)
OETA air date: May 29 and 30, 2010
OETA airtime: Saturday 11:00 a.m., Sunday 3:30 p.m.

Botanic Garden Ambassador Olen Thomas and the Native Splendor Garden – In this segment we welcome Botanic Garden Ambassador Olen Thomas to the show. Olen has been a volunteer at the gardens for 18 years, since the very beginning of the Ambassador program. He has a passion for native plants as well as gardening for birds. We asked Olen to help us in designing a garden where we could feature plants native to Oklahoma. Olen shares some of his design ideas with us and tells how he selected the plants included in Native Splendor. Some of the plants used in the garden are Native (coral) Honeysuckle (Lonicera sempervirens), Rayless gaillardia (Gaillardia suavis), Butterfly Weed (Asclepias tuberosa), Blue Lovegrass (Eragrostis elliottii), Little Blue Stem (Schizachyrium scoparium ‘The Blues’), Switchgrass (Panicum virgatum ‘Cloud Nine’) and Indian Pink (Spigelia marilandica).

Oklahoma City Farmer’s Market – In this segment we visit the Farmers Market in Oklahoma City at OSU-Oklahoma City. Oklahoma has a number of farmer’s markets located throughout the state. These local markets are excellent places to find not only fresh produce, but also dairy products, meats, grains, cut flowers, bedding plants, and more. Farmer’s markets vary in size from a few vendors set up at a local parking lot or city park, to the large, indoor market at OSU-Oklahoma City.

There are many benefits of shopping at your local farmer’s market. Of course, the availability of fresh fruits and vegetables is the greatest advantage. Fresh produce also has better flavor. Because the food travels fewer miles to reach the market, growers are able to harvest produce at the peak of ripeness, once the full flavor potential has been realized. We also find a greater selection of produce, including many heirloom cultivars that we won’t find at the local grocery store. The diversity of cultivars offers a wider range of flavors to delight the palette.

Many growers offer organic produce at the market. A great advantage of buying direct from the grower is that you can develop a relationship with the person producing your food. You can learn how the produce is produced. Growers also often provide recipes or have helpful tips on storing and preparing the produce. This personal interaction is what makes the market a special place to shop.

There are also economic and environmental advantages to shopping locally. When you support your local growers, your food dollars stay in the community. Since the food travels fewer miles to reach the market, less pollution is added to the atmosphere in transportation.

The OSU-Oklahoma City Farmer’s Market features over 30 vendors and is open year-round. The market is a member of the Oklahoma Grown Farmer’s Market Program and the Oklahoma Farmer’s Market Alliance. All items for sale are grown or made in Oklahoma. Market hours and locations are:

Winter Market: Saturdays, OSU-Oklahoma City Horticulture Pavilion, 10 a.m. to 1 p.m.
Summer Markets: Saturdays, OSU-Oklahoma City Horticulture Pavilion, 8 a.m. to 1 p.m. and
Wednesdays, Glenbrook East Parking Lot, 2:30 p.m. to 7 p.m. (N.W. 63rd Street, between N. Western and N. Grand Boulevard)

Visit the OSU-Oklahoma City Farmer’s Market Website to Learn What’s Fresh at the Market: www.osuokc.edu/farmersmarket/

The Oklahoma Grown (www.okgrown.com/markets/) and Oklahoma Agritourism (www.oklahomaagritourism.com/) websites have directories to farmer’s markets throughout the state. Visit their web pages to find a market near you.

Native Splendor Garden: Red Cup-leaf Penstemon, Tubeflower Penstemon, American Ipecac, and Barbara’s Buttons – This week in our Native Splendor Garden we have a magnificent perennial blooming, the Red Cup-leaf Penstemon (Penstemon murrayanus). Penstemon in Greek means five stamens. The stamens are the male reproductive structures of a flower, each stamen has a stalk called a filament and an anther, which contains the pollen sacks. In penstemons, four of the stamens are fertile and one is sterile. The plants are commonly called beard tongue because the sterile stamen has a tuft of small hairs along the filament.

Of the 13 penstemon species native to Oklahoma, this is the only species with a red or orange colored bloom. The flowers are very striking, and the red-hued stems provide even more color. The bold reds are set against interesting blue foliage. If you look at the upper set of leaves, you can see how they are joined together around the stem forming a cup. This is where the red-cup leaf penstemon gets its name. The small cup is the perfect place for rain drops to collect and butterflies can come take a drink.

The flowers of red cup-leaf penstemon are present from April through June and flower stalks reach a height of around 18 inches. Hummingbirds love sipping nectar from these flowers, so be sure to plant one near a window where you can watch the action. Like many of our natives, this plant does not want to be pampered. Plant it in an unamended, well-drained soil and you will enjoy the red-cup-leafed penstemon year after year.

Another native penstemon is the Tubeflower Penstemon (Penstemon tubaeflorus). This is a very elegant bloomer with long stalks of pure white flowers that reach up to three feet in height. Flowers are present May through June. This is easily one of the showiest penstemons. The plant itself forms a tight clump spreading 18 inches wide. Tubeflower penstemon is tolerant of more moisture than the red-cup-leaf penstemon, but still requires a well-drained soil. Avoid over-watering this plant. Penstemons look great in sunny borders.

Gillenia stipulata or American ipecac is a member of the rose family. It has an upright growth habit making the plant well suited for planting at the back of a bed or border. The leaves have a soft, medium texture and are palmately lobed. The new foliage at the bottom of the plant is more finely cut than the upper, older leaves. Both are deeply veined and have a serrate or toothed edge. The red stems are another attractive feature.

American ipecac flowers are white stars with five petals that appear late spring into early summer. The plant performs best under slightly mesic or wet conditions and will be most successful in Oklahoma if it receives light shade, especially from the afternoon sun. The mature size of American ipecac is three feet by three feet.

Many of us are familiar with syrup of ipecac, which is used to induce vomiting. Syrup of ipecac
actually comes from a different plant called ipecacuanha, but Gillenia has the same properties and has been used as a substitute for ipecacuanha. American ipecac was used by the Native Americans, and became known as an emetic to the colonists at an early time.

Another early bloomer is this low-growing perennial commonly called Barbara's Buttons (*Marshallia caespitos*). This plant belongs to the aster family, as evident by the daisy-like flowers. These floral "buttons" have no ray florets, or petals, instead consisting of frilly disk florets that are very showy. The flowers sit atop 12- to 18-inch stalks that emerge from a rosette of attractive strap-like leaves. The flowers are sweetly fragrant and work well as cut flowers. They are relished by butterflies, and when seed is formed, provide food for finches and other small birds. This is a pretty but tough plant, tolerant of a wide range of soil types and moisture regimes.

Native plant experts everywhere agree that Barbara's Buttons is an exceptional and garden worthy perennial. It is a very compact native plant growing 16 by 16 inches, and fits well in the front of a border or in a rock garden. Barbara’s Buttons require full sun and moderate to low moisture. Like many natives it performs best in a well-drained un-amended soil.

**This Week in the Vegetable Garden** – This is the last week that we will plant in our vegetable garden until late July when we will start some of our fall vegetable crops. This week we are seeding southern peas and transplanting sweet potato slips.

Southern peas are sown May through early June. You can stagger plantings three weeks apart to spread out the harvest. Seeds are sown directly into planting beds using a spacing of 4 inches between seeds. We are using a planting grid with 2 inch squares, dropping a seed into every other hole. The planting grid makes it easier to achieve proper plant spacing. Grids are easily constructed out of scrap lumber and wire or string.

Southern peas or cowpeas are an African crop and were brought to the United States in early Colonial times. They can be eaten as green shelled peas or left to dry on the vine for later use. Plants are highly tolerant of drought and a wide variety of soil conditions, including heavy clay and sandy soils. They also really like the heat. In fact, in cooler areas they tend to have insect and disease problems that are much less common in hotter regions.

Sweet potatoes are very tender annuals and require hot temperatures to produce well. Like the southern pea, sweet potato plants will tolerate relatively dry weather. Sweet potatoes are planted from slips. Slips can be started indoors or purchased locally or on-line. Plant “slips” after the soil has warmed to at least 65°F. Two types of plants are available, those that grow as a vine and those that have a bushing habit. Using an intensive bed system, space slips one foot apart and set them four inches deep. Sweet potatoes prefer light, sandy soils but will grow well on heavier soils, high in clay. They can also tolerate light shade, so can be planted beneath a taller crop such as okra where they will serve as a living mulch to shade out weeds.

As the plants begin to grow you can harvest young leaves and shoots to eat as fresh greens. The foliage is very nutritious. Eat it in a green salad or sauté with other vegetables.

**Announcements:**
The Garfield County Master Gardeners will hold a garden tour in Enid on Friday, June 4 from 6 to 9 p.m. and Saturday, June 5 from 9 a.m. to noon. Proceeds from the tour will support a scholarship for students in the Horticulture and Landscape Architecture Program at OSU. For more information,
contact the Garfield County Extension Office at 580-237-1228.

The Central Oklahoma Cactus and Succulent Society will hold a cactus and succulent show and sale at the Will Rogers Garden Center in Oklahoma City on Saturday, June 5 from 8:30 a.m. to 5:00 p.m. and Sunday, June 6 from 9:00 a.m. to 4:00 p.m. Admission to the show is free and thousands of plants will be available for purchase. For more information, contact Joyce Hochtritt at 405-737-1831 or by e-mail at cactibud@cox.net; or you can call the Will Rogers Garden Center at 405-943-0827.

Our annual Summer Garden Fest is just 2 weeks away. This year our theme is “Water you Doing for the Landscape” as we take a look at ways to conserve water in our own backyards. Next week we will visit with our keynote speaker Kevin Gustavson to see how he is collecting and managing rainwater in his backyard. Kevin currently represents the Oklahoma Blue Thumb Program, part of the Oklahoma Conservation Commission (OCC) Water Quality Division. Oklahoma Gardening is excited to join forces this year with the City of Stillwater to present a hands-on rain barrel construction workshop as part of GardenFest. We will also have a wide variety of demonstrations from xeriscaping to drip irrigation. Be sure to put Saturday, June 12 on your calendar and plan on joining us for GardenFest 2010.

Sincerely,
Kim Rebek, Oklahoma Gardening Host

****************************************************************************************
Oklahoma Gardening Information Sheet (#3647)
OETA air date: May 22 and 23, 2010
OETA airtime: Saturday 11:00 a.m., Sunday 3:30 p.m.

**Strawberries** – As a strawberry patch comes into production you will want to harvest every other day. Leave the berries on the plant one to two days after they reach full color. Avoid picking strawberries that have a white tip – these have not reached their full potential and the white tip will not have good flavor. Harvest berries by twisting the stem and fruit from the vine, leaving the green hulls attached to the fruits. It is best to harvest early in the morning when the berries are cool. Store them in a cool place or refrigerate for up to 5 days. Wait to wash your strawberries until just before using them to prevent softening and decay.

**Native Splendor Garden: Wisteria and False Indigo** – Our Native Splendor Garden is really starting to come alive. The wisteria buds have opened in our Native Splendor Garden and the show is simply spectacular. Our native species is called *Wisteria macrostachya.* The large chains of purple-blue blossoms are sweetly scented and just as magnificent as their Asian counterparts. However, they bloom slightly later than Asian wisteria, and because of this are more reliable bloomers. The flower buds are rarely lost to late spring freezes. It is also a bit better behaved than the Asian wisteria as it is not prone to sucker and has more controlled growth. The plant will vine to 25 or 30 feet and is very hardy. Native wisteria will tolerate partial shade, but will bloom best in full sun.

Another wonderful native perennial is Golden False Indigo (*Baptisia sphaerocarpa*). It is also called wild indigo or simply baptisia. Baptisia is a member of the Fabaceae or Pea Family and you can certainly see the resemblance between the baptisia flowers and those of our garden and sweet peas. The golden yellow blooms on this species sweep downward rather than being held upright like those of other baptisia, such as the Blue False Indigo (*Baptisia australis*). A single specimen of Golden baptisia can make a striking display in the garden. Like the amsonia, baptisia grows in a three foot mound with
graceful foliage. The mature seed pods are an ornamental feature throughout winter and are wonderful for use in dried arrangements.

The plant is drought tolerant and has a deep tap root. For this reason, baptisia do not respond well to being transplanted or divided. Fortunately, they need no dividing, they are a rare gem in the garden as they stay in one place. Be patient when you plant a baptisia, it may take a few years of establishment before the plant will bloom. But it is certainly worth the wait. Perhaps the greatest feature of baptisia is how easy it is to grow. Set this plant out in the worst spot of your garden and it will thrive. As legumes, they fix their own nitrogen and actually grow better in poor soils than rich ones, even heavy clays!

The closely related Blue False Indigo (*Baptisia australis*) has been named the 2010 Perennial Plant of the Year by the Perennial Plant Association. It is native to the eastern United States. This species has upright violet-blue flowers clustered in 10 to 12 inch racemes that are present for 3 to 4 weeks. The foliage also has a delicate blue tinge and creates a beautiful 3 to 4 foot clump. Recently, breeders have begun working with Baptisia to develop exciting new cultivars. We have the cultivar ‘Twilight Prairie Blues’ growing in our rock garden. The plant is a hybrid of two hardy prairie species and has interesting smoky violet-blue, almost copper colored flowers highlighted with a lemon keel.

All the baptisias have a shrub-like habit and are excellent plants to anchor the edge or back of a sunny border. They also work well in cottage-style gardens. Baptisia attract numerous species of butterfly and are insect and disease free.

**Managing Fleas and Ticks in the Landscape** – In this segment IPM Extension Specialist Dr. Tom Royer joins Kim to discuss ways to manage fleas and ticks in the landscape. These pests can be difficult to control effectively in the landscape and are best managed on your person or pet. Treat your dogs regularly for fleas and ticks, and control areas where they frequent. Flea larvae feed on dead skin cells from your pets and will be found in greatest numbers in the areas where you pet likes to lay in the yard. These areas can be spot treated with an insecticide to manage the pest population. Products with insect growth regulators are among the safer products to spray in the landscape.

Ticks require a blood meal to survive and reproduce. They are most common in landscapes frequented by wildlife such as deer and rabbits. Managing deer is one way to reduce tick populations. This is done by fencing or otherwise creating a barrier to the landscape. Of course, many gardens enjoy the wildlife in their yards, and fencing may not be an option. In this case, managing ticks on your body is the best choice. When working in the yard, where light-colored long sleeved shirts and pants. Tuck your socks into your pants and spray around your ankles with an insect repellent. You will be able to see ticks crawling up light-colored clothing easier than on dark colors.

Keeping the landscape tidy can also help with managing fleas and ticks. Keep the grass mowed short and manage vegetation to prevent weedy areas.

**Planting the Rainwater Sand Cistern** – We are finally ready to plant our rainwater sand cistern. A wide variety of native and non-native can be planted in the rainwater sand cistern. Plant species suitable for planting in a rain garden are also suitable for the cistern as both systems have a similar growing environment. Plants must be able to tolerate both temporary pooling of rainwater as well as dry periods between rainfall events. Using a variety of plants will make your rain garden more effective and less susceptible to disease as well as more attractive. Also, select plants that compliment the rest of the landscape. It is best to use plants with a developed root structure instead of starting plants by seed as seeds will have a hard time establishing in the conditions of a rain garden.
When selecting plants for our cistern, we had a few additional criteria. Of course, we selected plants that could tolerate the conditions, but we also designed with low maintenance needs in mind. For this reason, the cistern is planted with perennials rather than annuals that would require yearly replacement. We also wanted to use plants that were very familiar to most gardeners. Our final plant list includes monarda or beebalm; miscanthus and Karl Forester feather reed grasses; iris and daylilies; cardinal flower and echinacea. This represents just a handful of the many plant species suitable for planting in a rain garden or sand cistern.

Be careful when digging in your cistern, you do not want to tear the weed fabric separating the soil and sand layers. We also want to avoid the sand columns when planting. The sand columns should remain free of vegetation. This may require some thinning in the spring time as our plants become established and start to expand over time.

Once the bed is planted you want to mulch to help with weed management and to protect the soil from wind erosion. We want to limit the amount of organic matter that buildup in this system to avoid clogging the pore spaces in the sand. Because organic mulches such as wood chips decompose over time, we have chosen an inorganic mulch, one that will not break down over time. We are using 3/8 inch pea gravel. The water will also be able to move freely through the stone mulch. Spread a three to four inch layer as you would in any other garden.

The OSU Low Impact development website has a number of resources for rainwater harvesting and rain gardens: [http://lid.okstate.edu/osu-extension-fact-sheets](http://lid.okstate.edu/osu-extension-fact-sheets). Also, Texas Agrilife Extension has a list of plants suitable for rain gardens in Texas, many of which also perform well in Oklahoma: [http://rainwaterharvesting.tamu.edu/Rain%20Garden%20Plant%20List%202011-02-09.pdf](http://rainwaterharvesting.tamu.edu/Rain%20Garden%20Plant%20List%202011-02-09.pdf). Later this season we will install irrigation around our cistern and start to pump out the water we collect. If you are interested in learning more about what you can do to manage and capture rainwater in the landscape, be sure to join us for our annual Summer GardenFest this year on Saturday, June 12. Our featured speaker, Kevin Gustafson of the Oklahoma Conservation Commission, will speak about Home Gardening Techniques for Wise Water Use.

**Cooking with Barbara** – Barbara Brown, Extension Food Specialist, makes Sauteed Sugar Snap Peas with Radishes and Dill.

**Sauteed Sugar Snap Peas with Radishes and Dill**

- 1 tablespoon vegetable oil
- 1/2 cup thinly sliced onion
- 1 clove garlic, minced
- 3 cups sugar snap peas, strings removed
- 2 cups thinly sliced radishes
- 1/4 cup white wine
- 1 teaspoon dill seeds
- 1 teaspoon dried dill weed
- 1/2 teaspoon salt
- 1/2 teaspoon black pepper

1. Heat oil in large skillet over medium heat. Add onion and sauté until transparent and golden, about 5 minutes. Add garlic. Continue cooking and stirring for 30 seconds.
2. Add sugar snap peas and sauté, stirring, 4 minutes.
3. Stir in radishes and sauté 1 minute.
4. Add wine, dill seeds and dill weed and cook one minute longer.
5. Remove from heat and season with salt and pepper.

Serves 6.

<table>
<thead>
<tr>
<th>Nutrition Facts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Servings per recipe: 6</td>
</tr>
<tr>
<td>Calories 64</td>
</tr>
<tr>
<td>% Daily Value</td>
</tr>
<tr>
<td>Total Fat 2g</td>
</tr>
<tr>
<td>Saturated Fat trace</td>
</tr>
<tr>
<td>Cholesterol 0mg</td>
</tr>
<tr>
<td>Sodium 191mg</td>
</tr>
<tr>
<td>Carbohydrate 7g</td>
</tr>
<tr>
<td>Dietary Fiber 2g</td>
</tr>
<tr>
<td>Protein 2g</td>
</tr>
<tr>
<td>Vitamin A: 7%</td>
</tr>
<tr>
<td>Calcium: 5%</td>
</tr>
</tbody>
</table>


Barbara Brown, Food Specialist
Oklahoma Cooperative Extension Service

This Week in the Vegetable Garden (Planting Peanuts) – This week in the vegetable garden we are planting peanuts! Peanuts are warm-season annuals that require a minimum of 120 frost free days to reach maturity. This means they need a very long growing season to mature.

The peanut is a legume with compound leaves similar to clover and yellow, pea-like flowers. Peanut varieties can be classified by growth habit which includes bunch or runner plants, and also by nut type including Virginia or Spanish. Virginia and Spanish peanuts are both bunch type plants. Virginia types have large pods and usually contain 1 or 2 large kernels per pod. Spanish types have smaller pods and contain 2 or 3 small kernels per pod.

Peanuts grow best in loose, well-drained soils. Avoid poorly drained, clay type soils and if you do have heavy clay, mound the earth up or plant in raised beds. Plant peanuts after the danger of frost has passed and soils have warmed to 65°F. Sow peanut seeds 1 to 1 1/2 inches deep and 6 to 8 inches apart. Spanish peanuts are very well adapted to Oklahoma. Pronto, Spanco, Tamspan 90 or other spanish varieties would be the easiest to grow in a home garden.

Peanuts should be relatively trouble free as long as you avoid throwing soil up against the vines. Though some insect pests might occur, such as thrips, it is recommended not to spray for these insects, as the typical result is a flare up of a secondary pest, the spider mite.

We also need to be careful; not to cut off the pegs while we hoe. The flowering and fruiting of peanuts are unique. Plants flower above ground, but the pods develop below ground. The pegs are narrow stems that connect the flower above the ground to the seed pod below. We will come back to look at how this occurs once our flowers have been pollinated. In the mean time, mulch your peanuts after the seedlings have emerged and soils have warmed to 75 degrees. This will help the pegs grow into the ground.
Announcements:

The Garfield County Master Gardeners will hold a garden tour in Enid on Friday, June 4 from 6 to 9 p.m. and Saturday, June 5 from 9 a.m. to noon. Proceeds from the tour will support a scholarship for students in the Horticulture and Landscape Architecture Program at OSU. For more information, contact the Garfield County Extension Office at 580-237-1228.

The Central Oklahoma Cactus and Succulent Society will hold a cactus and succulent show and sale at the Will Rogers Garden Center in Oklahoma City on Saturday, June 5 from 8:30 a.m. to 5:00 p.m. and Sunday, June 6 from 9:00 a.m. to 4:00 p.m. Admission to the show is free and thousands of plants will be available for purchase. For more information, contact Joyce Hochtritt at 405-737-1831 or by e-mail at cactibud@cox.net; or you can call the Will Rogers Garden Center at 405-943-0827.

Sincerely,
Kim Rebek, Oklahoma Gardening Host

**********************************************************************************

Oklahoma Gardening Information Sheet (#3646)
OETA air date: May 15 and 16, 2010
OETA airtime: Saturday 11:00 a.m., Sunday 3:30 p.m.

Passionflower – There are over 400 species of passionflower or Passiflora, many of which are tropical. Few species are hardy to Oklahoma’s climate, but one, Passiflora incarnata, is native. The native passionflower is also called maypop, and is a deciduous vine that can tolerate freezes. Passiflora incarnata is hardy to zone 6 and will die back to the ground each winter. It is also a host plant for larvae of the gulf fritillary butterfly, a beautiful orange visitor throughout the summer. The flowers of passionflower themselves are immensely complex and beautiful, but we are growing the vines for the small, egg shaped fruits. If you’ve ever drank Hawaiian Punch you know the distinct flavor of the passionflower fruit.

Training Fruiting Vines – Our fruiting vine crops must be trained to the trellis system. To train our kiwi, we simply set a bamboo cane or other pole in the ground next to the plants and tied the vine on using stretchy tape. You want to be sure the material used for tying stretches so that it cannot girdle the stem. As the vine grows, continue to tie it on to the poles until it reaches the top wire. Once it is firmly attached to the top wire, you can remove the tape and pole along the trunk.

Another way to train vines is to tie a string to the top wire and secure it to a stake in the ground. Vines that produce tendrils, like our passionflower, will climb the string without assistance. Tendrils are thin, modified leaves that twine around whatever they touch. The plant uses this growth habit to support itself as it grows upward. Tie the string to the center wire, and secure it firmly into the ground. We can remove the string once the plant reaches the top wires, or leave them in place for next season. Remember, passionflower dies back to the ground each winter and will have to be trained each year.

We also need to train our grapes to the top cordon wire. For this we will again use a plant stake set next to our plant. Several shoots have emerged and we select the most vigorous cane to train as our trunk by simply tying it to the stake. Eventually, we will need to remove the subordinate canes that are not being trained as the trunk, but for now we will allow them to grow and contribute photosynthetic energy to the growth of our trunk. We will return in three weeks to trim the lateral shoots. Just like our blueberries, if we see flowers developing on the grapes these need to be removed for the first season to allow all of the
Our blackberries and raspberries are establishing well, and although we have installed our trellis system, we are not going to train the canes to the trellis until winter. This first growing season we want to allow the plants to put on as much growth as possible as they become established.

**Disease and Insect Pests in the Orchard** – Dr. Eric Stafne joins us to take a look at disease and insect pests in the orchard. Fire blight is a common disease of pome fruits, such as apples and pears. Fire blight is a bacterial disease which can severely damage apples and pears. Blossoms, fruits, fruit spurs, twigs, and branches are affected and sometimes the entire tree may be killed. The first sign of fire blight is a watery, light tan bacterial ooze that exudes from branch, twig or trunk cankers (small to large areas of bark killed by the pathogen during previous seasons). The ooze turns dark after exposure to air, leaving dark streaks on branches or trunks. However, cankers may be inconspicuous and infections may not be noticed until later in spring when flowers, shoots, and/or young fruit are affected. Blighted twigs and watersprouts wilt at their tips giving the appearance of a shepherd's crook. They then shrivel and turn black in color. These blackened areas appear burned and give fire blight its name.

Prevention is the key to managing fire blight, especially in large trees. A copper-based fungicide can be applied during the dormant season, though coverage on a large tree can be very difficult. Smaller trees are more easily managed. Affected tissue can be pruned, cutting back affected tissues to a healthy side branch. Always disinfect equipment after pruning a diseased tree to avoid spreading the disease to other plants in the landscape. In addition to pome fruits, fire blight can affect Quince (*Pyracantha* species), Hawthorn (*Crataegus* species), *Spiraea*, *Cotoneaster*, *Photinia* species, Juneberry or Serviceberry (*Amelanchier* species), Loquat, Mountain Ash (*Sorbus* species), and other related plants.

Vigorous young growth is highly susceptible to infection. Another management strategy is to limit nitrogen applications to pear trees. There are also many resistant cultivars available when selecting fruit trees for the landscape.

Another pest common this time of year is the plum curculio, a small beetle belonging to the weevil family. Plum curculio (*Conotrachelus nenuphar*) is one of the most important insects attacking tree fruits. Despite its name, a wide range of plants serve as host to this pest including apple, nectarine, plum, cherry, peach, apricot, pear and quince. The plum curculio can also survive on wild plum, hawthorn and native crabapple. Plum curculio is capable of causing great damage and is considered a difficult pest to control. The female makes distinctive, crescent-shaped wounds on the skin when laying eggs. The larvae that hatch from these eggs then cause internal injury by burrowing in the fruit to feed. Most of the larvae-infested fruits drop to the ground during June. Plum curculio can be managed using a carboryl or malathion based insecticide. Organic growers can use pyrethrum products to manage this pest.

**Cooking with Barbara** – Barbara Brown, Extension Food Specialist, creates a dish using spring pasta, asparagus, spinach and bacon.
Spring Pasta with Asparagus, Spinach and Bacon

- 8 ounces whole grain pasta, uncooked
- 1 tablespoon canola oil
- 1/2 cup chopped sweet onion
- 1 pound asparagus, tough ends removed, cut in 1-inch pieces
- 1 cup fat-free, reduced sodium chicken or vegetable broth
- 4 cups fresh spinach, coarsely chopped
- 1/4 cup Parmesan cheese, shredded
- 1/4 teaspoon black pepper
- 2 slices cooked bacon, crumbled or imitation bacon bits
- 1/4 cup Parmesan cheese, shredded

8. Transfer mixture to serving dish and sprinkle with crumbled bacon and remaining 1/4 cup Parmesan cheese.

Serves 4.

<table>
<thead>
<tr>
<th>Nutrition Facts</th>
<th>Calories 320</th>
<th>Calories from fat 81</th>
</tr>
</thead>
<tbody>
<tr>
<td>Servings per recipe: 4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Calories 320</td>
<td></td>
<td>Calories from fat 81</td>
</tr>
<tr>
<td>% Daily Value</td>
<td>% Daily Value</td>
<td></td>
</tr>
<tr>
<td>Total Fat 9g</td>
<td>14%</td>
<td></td>
</tr>
<tr>
<td>Saturated Fat 3g</td>
<td>14%</td>
<td></td>
</tr>
<tr>
<td>Cholesterol 11mg</td>
<td>7%</td>
<td></td>
</tr>
<tr>
<td>Sodium 268mg</td>
<td>11%</td>
<td></td>
</tr>
<tr>
<td>Carbohydrate 48g</td>
<td>16%</td>
<td></td>
</tr>
<tr>
<td>Dietary Fiber 7g</td>
<td>29%</td>
<td></td>
</tr>
<tr>
<td>Protein 16g</td>
<td>32%</td>
<td></td>
</tr>
<tr>
<td>Vitamin A: 49%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vitamin C: 31%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Folacin: 43%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Calcium: 21%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Iron: 20%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Potassium: 15%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Modified from original source: Cooking Light at http://find.myradical.com/recipe
Barbara Brown, Food Specialist
Oklahoma Cooperative Extension Service

This Week in the Vegetable Garden – This week in the vegetable garden we are transplanting winter squash and okra. We are also seeding cover crops on our fallow plots. The fallow period allows our soils to rest and provides a chance to add nutrients and organic matter back into the soil through the use of green manure. Green manure plants are grown in an area and then cut down and allowed to decompose in the growing bed, adding the nutrients it used to grow back into the soil while also adding organic matter. A related, but distinctly different term used to describe non-crop plants is cover crop. A cover crop is any plant grown on a piece of land when the usual crop is not there. Sometimes the two phrases green manure and cover crop are used interchangeably, but there is an important difference in that green manures add back to the soil base.
In addition to soil building, cover crops and green manure crops also protect the soil from wind and rain erosion during the fallow period. We can also grow cover crops or green manures during the winter months to help protect soils.

Legumes make excellent cover crops because they fix nitrogen from the air and add it to the soil, even if the aerial portions of the plant are harvested. Legumes can also be used as green manures. Austrian winter pea is a commonly planted winter cover crop. Since we are entering the warmest part of the growing season, we need a warm-season green manure. For a legume, cow peas can be used. A green manure that produces a great deal of biomass or organic matter to the bed is the sunflower. I have chosen sunflowers as our green manure because it is not only a good source of organic matter, but also quite beautiful and the flowers are an excellent pollen source for natural enemies and crop pollinators.

Cover crops should be cut down before they seed, otherwise we will have weedy seedlings to deal with in the next growing season.

Next week we will be planting peanuts. It may be hard to locate peanuts for planting. You can order peanuts through seed catalogs, or ask a grower at your local farmer’s market for a local supply source.

Sincerely,
Kim Rebek, Oklahoma Gardening Host

Oklahoma Gardening Information Sheet (#3645)
OETA air date: May 8 and 9, 2010
OETA airtime: Saturday 11:00 a.m., Sunday 3:30 p.m.

Pruning Crapemyrtle – Crapemyrtle (Lagerstroemia indica) is incredibly tough and adaptable. It has very few pests, blooms all summer long without irrigation, and has spectacular exfoliating bark and smooth trunks. My favorite feature of crapemyrtle is the vase-like form of the plant and its magnificent branching structure. You can imagine how outraged I was my first spring here when I saw my neighbor cut his magnificent tree-sized crapemyrtle to an even four feet all around, a technique called topping. The magnificent form was gone and he was left with thick stumps protruding from the ground. This practice went against everything I knew about pruning, so of course, I was curious as to why people pruned this way. Everybody I spoke to had a very strong opinion on how to prune crapemyrtles. But research shows all this pruning is unnecessary.

So why all the topping? One reason may be to control the size of the plants. Many crapemyrtle cultivars can grow to 30 or 40 feet, at least in areas where they never freeze back. A better way to manage plant size is by choosing the right variety for the location. No amount of pruning will change a crapemyrtle’s ultimate growth habit. Today, many cultivars are available that range from a mere 1 foot in height to 30 or 40 feet.

Crapemyrtles bloom on the current season’s growth of new stems. This may be another reason for topping crapemyrtles, to promote plenty of new growth blossoms. However, topping results in a "witch’s broom" appearance with profuse growth at the site of the pruning and much sprouting from the plant base. This new growth is very thin, and not only is it out of proportional in appearance to the older wood it is also weaker and more susceptible to disease, insects, and breaking from wind. The dense new growth reduces air movement and light penetration to the inner branches.
Properly pruning of crapemyrtles is very simple. Start by remove suckers from the bottom of the plant. Also remove crossed, damaged or diseased branches. For crossed branches, remove the weaker of the two limbs that are crossing or rubbing. You can also thin out small twiggy growth to allow air to better circulate in the canopy. If the tree is small you can prune the tips of the branches to remove old flowers, but this is purely for aesthetic reasons. Removing dried pods does not promote any more bloom during the summer. However, removing blooms as they fade during the current does promote faster re-bloom.

For larger, tree-formed crapemyrtles, it is good practice to thin out the number of trunks leaving somewhere around 3 to 7 permanents trunks. The fewer trunks you have, the more light will penetrate the inner branches and the better your blooms. Begin this practice when plants are young. Each season, new shoots will emerge from the base. These can be pruned out, or used to replace older, trunks if a more compact form is desired.

You can rehabilitate a crapemyrtle that has been reduced to knuckles from continual topping. One way to do this is by selecting the strongest two or three sprouts from each stub and remove all of the other sprouts. This will encourage the remaining sprouts to be stronger and the canopy of the tree to be more open. If you follow this procedure for a couple of seasons, the tree is sure to be much improved in health and appearance. Another option is to cut the tree back to within one to two inches of the ground while the tree is dormant. This practice is called rejuvenation pruning. After two to three weeks of growth, select three to five of the most vigorous new shoots and remove all others. Remove any new shoots that emerge later. Within three to five years, you will again have a natural-looking crapemyrtle. Sometimes, a deep freeze will cause a crapemyrtle to die back all the way to the ground naturally and re-grow in much the same manner as rejuvenation pruning.

We had a fairly cold winter this season and may watch for freeze damage on our crapemyrtles. Often times after a deep freeze, crapemyrtle may leaf out later and many plants may remain dormant longer in the spring. We may also see dieback in some of the shoots. The ideal time to assess winter injury to crapemyrtles is after new growth begins to emerge in the spring.

Harvesting the Rain: Installing a Rainwater Sand Cistern – In this segment Kim introduces the “Green” cottage, a site used to demonstrate a number of alternative energy and water conservation practices. One of the goals of the Green Cottage is to collect rainwater that falls on the roof and re-use it for irrigation.

There are a variety of systems to capture rainwater and each has its advantages and disadvantages. We are installing a rainwater sand cistern. This system stores rainwater below ground in the air spaces in sand. It is a closed system so the water is not exposed above ground. This eliminates problems with mosquitoes and also keeps the water cooler. This is a benefit for irrigation purposes and it also helps prevent algae growth in the system.

We more readily associate the word cistern with the large metal or plastic barrels used to store water, but our sand cistern will function much the same way. Some people find above ground cisterns unsightly. This is another advantage of the sand cistern. Once it is installed it disappears into the landscape. In fact, we will eventually plant it like a rain garden.

Another difference between a traditional above ground cistern and our sand cistern is how we move the water. Above ground systems can use gravity to move water, while below ground systems require a pump to pull water to the surface. We will look more at the pump when we install irrigation.
The first step in installing a rainwater sand cistern is to excavate the hole. Our hole measures 10 feet by 20 feet by 4 ½ feet deep and was excavated using a backhoe. The size of the hole depends upon how much rain you are trying to capture. This can be calculated based upon the area of your roof, your irrigation needs and average rainfall for your area. To give an idea of our potential capture off the roof, 600 gallons of rainwater can be collected off of 1,000 square feet of roof. Our roof is approximately 432 square feet and our cistern is sized to collect 1,000 gallons or 4 inches of rain.

The hole is slightly deeper at one end so that water will drain to a low spot. This is where we will take water into our pump. Once the hole is dug line it with plastic sheeting. A 6 mil construction grade plastic is sufficient. If more than one sheet is needed, multiple sheets can be connected using vapor barrier tape. Our cistern uses a pond liner, which has been cut to size. The liner will keep water from draining out of the cistern.

The next step is to coil drainage pipe in the bottom of the hole. The drainage pipe serves two functions. It serves as an empty space to store water but more importantly, creates a water reservoir from which water can be pumped more easily. The drainage pipe should be covered with a sediment barrier to prevent sand from filling the pipe. Our hole has 100 feet of pipe coiled back and forth to create a single layer. Connect both ends of the drainage pipe to a PVC “T” joint. This “t” joint will serve as our well and should be placed in the lowest area along the bottom of the hole.

To the third opening on the PVC “T” attach and seal a five foot section of PVC that is either perforated or has holes drilled along the shaft. The openings will allow additional water to seep into the pipe. This pipe will be set in a vertical position and serve as a housing for our water pump intake hose. Stabilize the vertical pipe using poles and string so that it remains upright while filling the hole.

We are now ready to backfill our hole with sand. The sand will act both as a storage area for the water, and will also filter the water as it moves through the system. Water pack the sand after each vertical foot is added. Continue filling until you reach a depth that is 18 to 26 inches below the surrounding soil surface.

The rainwater sand cistern will store water in a sand layer set below a surface layer of soil. The soil layer will be used to grow plants. The exact depth of the sand layer will depend upon the hole depth. The goal is to lay a 12 to 18 inch layer of soil above the sand for planting. The final surface of the soil layer should be depressed 6 to 8 inches below the surrounding surface grade. To account for enough space to lay a layer of soil and still have the soil surface 6 to 8 inches below the surrounding soil, sand should be filled to a point that is 18 to 26 inches below grade. The purpose of having the cistern depressed is to create an area where water can sit and pool as it percolates into the sand layer below.

Another way to achieve the depression is to berm soil up around the outside edge of the cistern. If your cistern is in an area where exposed soil might wash into the depression, a berm can help keep this contaminated water out of the system.

An overflow drain is needed to carry excess water away from the soil layer. Plants cannot tolerate sitting in water-saturated soil for an extended period of time. If your cistern is full, excess water needs to be drained out of the depressed area. This can be achieved by laying a drain pipe at the surface of the sand layer to carry water to a lower point outside the cistern. Another option is to dig a shallow swale to the depth of the sand layer that slopes away from the cistern.
Once an overflow drain has been established, we are ready to lay our soil layer. It is best to segregate the soil layer from the sand layer to prevent soil sediments from filling the pore spaces in the sand. Any non-woven weed fabric can be used to separate the two layers. It is important to use a non-woven material as it allows water to percolate easily into the sand below. To hasten percolation, maintain several areas free of soil where sand columns extend from the surface to the sand layer below. We achieve this by cutting the bottoms out of large plastic planting containers and setting them throughout the cistern. The containers are filled with sand and the soil is filled around the containers. Continue filling the hole with soil until it reaches a depth that is 6 to 8 inches below the surrounding soil surface.

We will continue to work on this project in future episodes as we berm around the cistern, plant the cistern, and install dry creek beds to carry water from our gutters to the cistern.

**Thinning Peaches** – In this segment Kim is joined by OSU Fruit Crop Extension Specialist Eric Stafne to learn about thinning fruits. Many fruit trees require thinning of the fruit to lighten the fruit load which results in larger, sweeter fruits. Thinning also helps avoid stress to the trees from an over-abundant crop and reduce potential damage that can occur to the tree from a heavy fruit load. Thinning is not always required. Some years, late spring freezes thin out some or all of the fruits. Other years, particularly in years following a freeze, the tree produces too much fruit, often to compensate for poor fruit production the previous growing season.

Peaches are thinned when fruits reach the size of a dime or nickel in diameter, before the pit hardens. A good rule of thumb is to use your hand for spacing fruit along the branch. Leave one to two fruits at intervals spaced a hand width apart. On short side shoots it is best to leave only one or two fruits. Other stone fruits such as plums, apricots, and nectarines are thinned in a similar manner to peaches.

Pome fruits, which include apples and pears, produce fruits in clusters. To thin fruits from these trees we want to both reduce the number of clusters and reduce the number of fruits per cluster. Thin the fruit clusters by pinching them off, leaving one cluster every 6 to 8 inches. Reduce the number of fruits in each cluster to 2 or 3 fruits.

Sincerely,
Kim Rebek, *Oklahoma Gardening* Host

---

**Oklahoma Gardening** Information Sheet (#3644)

**OETA air date:** May 1 and 2, 2010
**OETA airtime:** Saturday 11:00 a.m., Sunday 3:30 p.m.

**Junior Master Gardener Program with Shelley Mitchell and Sue Wright** – In this segment, 4-H and Youth Horticulture Programs Extension Associate Shelley Mitchell tells us about the Junior Master Gardener Program. We visit an active program at Skyline Elementary School in Stillwater, where one of our very own Garden Ambassadors, Sue Wright, leads a group of third graders in a hands-on propagation project. The program Sue uses is called “Literature in the Garden” and is just one portion of the Junior Master Gardener curriculum. We will follow students through the project and learn why they enjoy the JMG program.

**Italian Arum** – In this segment we take a look at Italian Arum (*Arum italicum*). This perennial has an interesting life cycle. It is a winter ephemeral, meaning the foliage is present during the winter months, after which it goes dormant during the summer. Before entering dormancy in the spring, the plant blooms. The flowers are a spathe, similar to those of Jack-in-the-pulpit. Flowers are followed by large
clusters of bright red-orange berries. By the time the berries have developed, the foliage of the plant has died back, leaving large clusters of seed heads protruding from the soil. Visitors to the gardens are always curious as to what plant the seed heads belong. Italian Arum makes a good companion to hostas in a shade garden. The hostas provide summer color and the arum fills in during the winter when the hostas are dormant.

**Introduction to Native Splendor Garden: Lonicera and Pale Pink Poppy Mallow** – Oklahoma has a great diversity of native plants, adapted to a variety of habitats. This year, we will highlight a number of Oklahoma natives in our Native Splendor Garden, designed by one of our dedicated Garden Ambassadors, Olen Thomas. Olen will join us as the garden comes alive to share his design with us. Today, I’d like to showcase a few of the early bloomers in the bed.

Coral Honeysuckle or Trumpet Honeysuckle (*Lonicera sempervirens*) is a native relative of the more commonly planted Japanese Honeysuckle (*Lonicera japonica*), which can be rather invasive. Coral Honeysuckle grows naturally throughout eastern and central North America, from Canada south to Texas. It is a very hardy perennial vine usually growing to 20 feet. It is a good climber or ground cover, but is not overly aggressive. The species name “sempervirens” refers to its evergreen habit typical of Southern growing specimens.

The smooth, glossy, paired, leaves are evergreen or semi-evergreen in Oklahoma. The leaves immediately adjacent to the flowers are fused at the base. This vine has showy, trumpet-shaped flowers, red on the outside and yellow inside. The flowers form in several whorled clusters at the ends of the stems from March through June and are followed by bright red berries. The orange-brown bark is papery and exfoliates as the vine ages. This beautiful, slender, climbing vine is frequently visited by hummingbirds.

This dainty flower belongs to the hibiscus family. It is the Pale Pink Poppy Mallow (*Callirhoe alcaeoides*). This delicate looking perennial is a very tough plant. It is very drought tolerant and adapted to dry, rocky or sandy sites, though it also grows well in clay soils. The plant sprawls along the ground, spreading about 18 inches, and the soft pink flowers will stand about a foot tall. Give the pale pink poppy mallow plenty of sunshine.

**Cooking with Barbara** – Barbara Brown, Extension Food Specialist, makes wilted garden leaf lettuce.

**Horticulture Tips for May** – David Hillock, Extension Horticulturist, gives us tips for May.

**Trees and Shrubs**
- Prune and feed azaleas and other spring blooming plants immediately after blooming.
- Insect Alert: ([EPP-7306](#))
  - Bagworms on juniper and arborvitae. (Late May)
  - Elm leaf beetles and larvae on elms. (Late May)
  - Lace bugs on sycamore, pyracantha and azalea.
- Pine needle disease treatments are needed in mid-May. ([EPP-7618](#))

**Turfgrass**
- Cool-season lawns can be fertilized again. If you did not fertilize cool-season grasses in March and April, do so now. This should be the last application until fall.
- Warm-season lawns may be fertilized again in May. ([HLA-6420](#))
- Seeding of warm-season grasses such as bermudagrass, buffalograss, zoysiagrass and centipedegrass is best performed in mid-May through the end of June. The soil temperatures are
warm enough for germination and adequate growing season is present to promote winter hardiness.

- Vegetative establishment of warm-season grasses can continue. (HLA-6419)
- Nutsedge plants become visible during this month. Post-emergent treatments are best applied for the first time this month (HLA-6421). Make certain warm-season grasses have completed green-up.
- The second application of pre-emergent annual grass herbicides can be applied in late-May or early June, depending upon timing of first application (HLA-6421). Check label for details.

**Flowers**

- Annual bedding plants can be set out for summer color.
- Plant summer bulbs such as cannas, dahlias, elephant ear, caladiums and gladiolus.

**Water Gardens**

- Clean out water garden and prepare for season. Divide and repot water garden plants.
- Begin feeding fish when water temperatures are over 50°F.

**This Week in the Vegetable Garden** – This week in the vegetable garden we can transplant our melons. We also need to continue to thin our spinach, lettuce and chard. I like to thin a little at a time and harvest the young leaves for a delightful salad. We are also planting flowers in the vegetable garden to attract beneficial insects. We have many friends in the insect world. In the vegetable garden, our greatest allies are the predators and parasitoids that feed on garden pests. We call these insects natural enemies and the group includes a great diversity of insects. The best way to attract beneficial insects to the garden is to plant an abundance of flowers. Plants used to attract beneficial insects include a number of garden favorites. Slip them in wherever you have extra space in the vegetable garden, and plant them among your evergreens in the ornamental landscape as well.

The following is a list of good plants that attract good insects.

- **Aster Family (Compositae)**
  - Blanket flower – *Gaillardia* spp.
  - Cone flower – *Echinacea* spp.
  - Coreopsis – *Coreopsis* spp.
  - Shasta daisy – *Chrysanthemum maximum*
  - Calendula – *Calendula* spp.
  - Asters – *Aster* spp.
  - Zinnia – *Zinnia* spp.
  - Dahlia – *Dahlia* spp.
  - Cosmos – *Cosmos* spp.
  - Sunflower – *Helianthus* spp.
  - Yarrow – *Achillea* spp.
  - Goldenrod – *Solidago* spp.
  - Tansy – *Tanacetum vulgare*

- **Carrot family (Umbelliferae):**
  - Caraway – *Carum carvi*
  - Coriander – *Coriandrum sativum*
  - Dill – *Anethum graveolens*
  - Fennel – *Foeniculum vulgare*
  - Queen Anne's Lace (wild carrot) – *Daucus carota*
  - Wild parsnip – *Pastinaca sativa*
  - Flowering ammi/Bishop's flower – *ammi majus*
  - Toothpick ammi – *Ammi visnaga*

- **Pea family (Leguminaceae)**
○ Alfalfa – *Medicago sativa*
○ Clover – *Melilotus* spp.
○ Fava bean – *Vicia fava*

• **Mustard Family (Brassicaceae)**
  ○ Basket-of-gold alyssum – *Aurinium saxatilis*
  ○ Sweet alyssum – *Lobularia maritime*
  ○ Hoary alyssum – *Berteroa incana*
  ○ Mustards – *Brassica* spp.
  ○ Yellow rocket – *Barbarea vulgaris*

• **Other Plant Families**
  ○ Beebalm – *Monarda* spp.
  ○ Speedwell – *Veronica* spp.
  ○ Cinquefoil – *Potentilla* spp.
  ○ Milkweed – *Asclepias* spp.
  ○ Buckwheat – *Fagopyrum sagittatum*
  ○ Phacelia – *Phacelia* spp.

**Announcements**

Next Friday, May 7 is National Public Gardens Day, a day celebrating the nation’s 500 plus public gardens. In addition to being great places to relax or enjoy a walk, public gardens also play an important role as environmental stewards in the community. So, plan on taking some time next weekend to get outside and enjoy spring in all its glory by visiting a garden near you.

**Gardens throughout Oklahoma:**
- John E. Kirkpatrick Horticulture Center, Oklahoma City
- NOC Botanical Garden & Arboretum, Tonkawa
- Honor Heights Park, Muskogee
- Oklahoma City Zoo and Botanical Garden, Oklahoma City
- Lendonwood Gardens, Grove
- The Bivin Garden, Shidler
- Satsuki Garden, Grove
- Tulsa Garden Center at Woodward Park, Tulsa
- Jo Allyn Lowe Park, Bartlesville
- Will Rogers Park & Garden Center, Oklahoma City
- Philbrook Museum of Art, Tulsa
- The Botanic Gardens at Oklahoma State University, Stillwater
- Cann Memorial Botanical Gardens, Ponca City
- Myriad Botanical Gardens, Oklahoma City
- Historical Sculpture Gardens, Choctaw
- Linnaeus Teaching Gardens, Tulsa
- Tulsa Municipal Rose Garden and Woodward Park, Tulsa
- The Central Gardens of UCO, Edmond
- McAlester Arboretum, McAlester
- Washington Irving Park and Arboretum, Bixby
- Gilcrease Museum and Gardens, Tulsa
Wilted Garden Leaf Lettuce

- 1 bunch leaf lettuce
- 6 to 8 radishes, sliced
- 4 to 6 green onions, sliced
- 5 slices bacon, crisp-cooked and crumbled
- 1/4 cup white vinegar
- 1 tablespoon sugar
- 2 tablespoons water
- 1/2 teaspoon salt
- 1/4 teaspoon dry mustard
- 1/8 teaspoon pepper

9. Rinse lettuce and spin dry in salad spinner. Place dried lettuce in large bowl.
10. Add radishes, green onions and bacon to lettuce.
11. In small saucepan, bring vinegar, sugar, water, salt, dry mustard and pepper to a simmer.
12. Pour dressing over lettuce and toss to wilt.
13. Serve immediately.

Serves 4.

<table>
<thead>
<tr>
<th>Nutrition Facts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Servings per recipe: 4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Calories</th>
<th>Calories from fat</th>
</tr>
</thead>
<tbody>
<tr>
<td>88</td>
<td>36</td>
</tr>
<tr>
<td>% Daily Value</td>
<td></td>
</tr>
<tr>
<td>Total Fat 4g</td>
<td>7%</td>
</tr>
<tr>
<td>Saturated Fat 1g</td>
<td>7%</td>
</tr>
<tr>
<td>Cholesterol 7mg</td>
<td>2%</td>
</tr>
<tr>
<td>Sodium 411mg</td>
<td>17%</td>
</tr>
<tr>
<td>Carbohydrate 9g</td>
<td>3%</td>
</tr>
<tr>
<td>Dietary Fiber 3g</td>
<td>11%</td>
</tr>
<tr>
<td>Protein 4g</td>
<td>8%</td>
</tr>
<tr>
<td>Vitamin A: 11%</td>
<td>Vitamin C: 24%</td>
</tr>
<tr>
<td>Calcium: 5%</td>
<td>Iron: 7%</td>
</tr>
</tbody>
</table>

Barbara Brown, Food Specialist
Oklahoma Cooperative Extension Service

Information about the book, Living Well, is available by emailing: dana.baldwin@okstate.edu
Planting Hardy Kiwifruit – We are establishing kiwifruit in our orchard. Several weeks back we installed the trellis for the plants, today, we will set our vines in the ground. Kiwifruit need a site in full sun, and they should also be protected from wind if possible. Avoid areas prone to frost. If you have a number of spaces to choose from, a site with a slight slope to the north is preferred. This will help prevent spring frost injury and protect plants from southwest winds in summer.

A deep, well-drained soil provides the best planting site. Add plenty of organic matter to the soil to improve drainage of heavy soils. If soils drain poorly, raising the bed 6 to 10 inches can help improve soil drainage. As with most plantings, preparing the soil a year in advance can help with establishing proper nutrition and managing weeds, as well as adjusting soil pH when necessary. A pH between 5 and 6.5 is ideal for growing kiwifruit. Conduct a soil test several months in advance of planting and make adjustments as needed.

Before planting, prepare the soil by cultivating deeply. Work organic matter such as compost or composted cow manure to the top 3 to 6 inches of soil and allow rainfall to settle the beds, or use sprinklers.

There are four species of kiwifruit commonly cultivated for fruit. *Actinidia deliciosa* is the fuzzy-skinned, grocery-store kiwi. It requires a very long growing season, and it is not hardy in Oklahoma. *Actinidia chinensis* is closely related to *A. deliciosa*. Selections are being made for hairlessness, fragrance, and flavor. It is a small fruit and is suitable for southern Oklahoma, as current selections are hardy to U.S.D.A. hardiness zone 7. *Actinidia kolomikta* is an Arctic kiwi. The male is often used as an ornamental because of the pink and white variegation of its younger leaves. The fruit is small, very sweet, and very cold hardy (-30°F).

We are growing Hardy Kiwi, *Actinidia arguta* ‘Ananasnaya’ and ‘Issail’. It has small fruit with smooth skins, as opposed to the fuzzy skins we find in the grocery store. Fruits ripen in late summer and keep for 2 to 3 months in storage. This species has no disease or insect problems.

Kiwifruit have separate male and female plants. A plant of each sex must be growing near each other for fruit production. They should also belong to the same species to ensure that they bloom at the same time. In order to get more, larger fruit, it is often better to have male plants that are a different variety from the female plants. One male plant should be planted for every 6 to 8 females to ensure good pollination.
Plants can be set in the ground when dormant, in late winter or early spring (from about February through March), space plants 10 to 15 feet apart in rows that are 15 to 16 feet apart. Set male plants in a location central to the females so that honeybees will have access to them among several female plants. Kiwifruit plants should be set at the same depth or slightly deeper than they grew in the nursery row. Do not allow the plants to dry out during planting. Unless rain is likely, water the newly set plants.

Kiwifruit are perennial woody vines (lianas). Kiwifruit benefits from a thick layer of organic mulch such as pine bark. We lay the mulch about 4 inches deep. Mulch helps control weeds, conserves soil moisture, and shades the soil to keep it cooler during the summer. Mulch also helps prevent winter injury to crowns, promotes growth of the extensive fibrous kiwifruit root system, and helps control unwanted suckers.

Very little commercial fertilizer is needed during the first year of kiwifruit establishment, but regular irrigation will be required to establish vines. We need to train our young plants up to the trellis wires. To do this we simply set bamboo poles beside each plant. Our vines will reach the wire this season, but will not produce fruit for several years. Kiwifruit bear crops after 3 to 4 years, but once they begin, they can remain active for up to 60 years. We will check back in on the progress of our vines later this season.

You can learn more about kiwifruit in OSU Extension Fact Sheet HLA-6249 Kiwifruit Production in Oklahoma.

**Planting Elderberry** – Elderberries (*Sambucus canadensis* L.) are native to Oklahoma and other parts of North America. The fruit of this lesser known crop is often harvested from the wild and has a variety of uses, such as making jams, jellies, pies, juice, and wine. We have two elderberries planted in our small fruit garden. But unlike the other fruits, elderberries prefer shaded locations. It is best to choose a site that allows for good air circulation around the plants to reduce leaf and disease problems.

Elderberry cultivars may be difficult to find due to rather limited demand. One-year-old plants are best; though older plants can be used but are often less vigorous. Elderberries are only partially self-fruitful. Two or more cultivars should be planted near each other to provide for cross-pollination. Recommended cultivars for Oklahoma include ‘Nova’, ‘York’, ‘Adams’ and ‘Johns’. The plants we have established are ‘York’ and ‘Nova’. We added a third elderberry to our planting because of its ornamental characteristics. It is Black Lace™ elderberry. It has remarkable purple black foliage that is deeply cut much like that of a Japanese maple. The plant also produces beautiful creamy pink flowers in spring that contrast with the dark leaves. Even though Black Lace™ is generally sold as an ornamental plant, the blackish red fall berries are edible.

Elderberries grow very large, reaching about 8 to 10 feet in height. They should be spaced accordingly, setting plants 8 feet apart. In the fall or early spring before planting, mix additional organic matter with the soil such as aged manure or compost. Dormant plants should be set in February or early March, as soon as they are received from the nursery. If plants are actively growing like our Black Lace™, set them when the threat of frost has passed.

Before planting, remove damaged or broken parts and cut back the branches to 8 to 10 inches. Set the plant with the lowest branch at or just below the soil line and water thoroughly to settle
the soil around the roots.

Elderberries will likely require yearly applications of nitrogen. Young plants should receive one to two tablespoons of fertilizers like ammonium sulfate, ammonium nitrate, or urea annually in the spring. Older plants should receive three to four tablespoons of fertilizer. Nitrogen can also be supplied by using compost or manures. Elderberries are not drought tolerant and irrigation is necessary during dry periods. Watering should be done weekly if rainfall is insufficient. Trickle (drip) irrigation works well and mulching will also help to conserve soil moisture.

For more information, turn to OSU Fact Sheet **HLA-6256 Growing Elderberries in Oklahoma**.

**Tree Planting: Weeping River Birch** – When selecting and planting trees and shrubs in the landscape, a number of different options are available. Each has advantages and disadvantages, which dictate the manner in which they are handled and planted.

- Bare-root plants are shipped dormant during the winter months. They are planted between mid-February and mid-April or up to the end of the frost period. Other than seedling-sized evergreens, only deciduous plants can be transplanted with bare roots, and then only when dormant or leafless.

This time of year we are generally planting actively-growing trees and shrubs set in a soil medium. These include balled & burlapped, container-grown, and potted plants.

- Ball and burlapped (or B&B) plants are dug with roots and soil intact and covered with burlap. Despite the fact that they are dug with roots, up to 90 percent or more of the roots have been lost during the process. Evergreens and large trees are often sold B&B.
- Container grown plants are raised in containers. Less loss from transplanting occurs with container-grown plants since few to no roots are lost if the plant was grown in the container. Roots should not be growing out of container drain holes nor circling around the inside of the pot.
- Potted plants are bare-root plants that have been grown in the field, but they are put in a soil mix in papier mâché pots for ease of handling. This does not provide the same quality plant as a plant grown in a container. Roses, for example, are commonly marketed this way.

Planting time varies from fall to spring by plant type and method of growing.

- As I mentioned, early spring is best time for planting bare-root plants, but also for planting broadleaf evergreens, such as holly and Southern magnolia.
- The best time to plant balled and burlapped trees and pines, as well as container-grown plants, is in early fall. Plants planted in the fall have more time for the root system to become established before the onset of summer heat.
- However, many containerized plants can be planted any time if handled properly. We see heavy marketing of trees and shrubs in the spring, and this is also a good time for planting.
- Avoid planting during the heat of the summer. Plants installed during the growing season are susceptible to high transpiration rates leading to drying of plant tissues.
Preparing the planting area properly before planting is very important. Beyond climatic adaptation, soil drainage or percolation is the greatest limitation to successful transplants in urban soils. A poorly drained clay soil is either too wet or too dry for all but the most durable trees and shrubs. And most urban soils are abused during construction processes. Soil drainage and compaction problems must be resolved before planting is done. We address these problems by loosening a wide area of soil in and around the planting hole, not by amending the soil.

Dig the planting hole three times the diameter of the tree or shrub’s root ball and no deeper than the root ball itself.

Careful handling during planting is important to minimize plant stress. Always handle a plant by the container, not by the trunk or stems. It is critical to keep the roots of all plants damp or moist until the moment of planting.

Regardless of container material, papier mâché, ridged plastic or burlap, remove as much of the container as possible at the time of planting. Strings used to secure the burlap to the base of the tree and the burlap itself should be removed from the root ball after placing the root ball in the hole. Be especially careful to remove strings from around the trunk. When planting potted plants, tear or cut the sides off the pot and handle carefully.

Since most Oklahoma soils are clay, plant trees and shrubs one to two inches above grade. In sandy soils, plant trees and shrubs at original grade. Backfill with the original soil and do not amend that soil. Studies have shown that amendments to the backfill often delay establishment of the tree or shrub, and may result in further complications such as root rot. Also, do not put crushed stone or gravel in the bottom of the hole! Gravel placed in the bottom of the whole will not improve drainage as many people think, in fact, it can hinder water movement, creating soggy conditions in the bottom of the hole. The best backfill around a new tree or shrub is native soil. Fortunately, many ornamental trees and shrubs grow well in a variety of soils.

When backfilling, be sure to bring soil up to the top edge of the root ball so that roots are not left exposed. Planting above grade leaves soils susceptible to desiccation; therefore, it’s necessary to immediately mulch plantings.

Fertilization is not recommended at the time of planting because a new tree or shrub has a very limited capacity for utilizing fertilizer until it becomes established. Excessive fertilizer in the root zone can be damaging, so do not add fertilizer to the backfill or dump it into the bottom of the hole. Newly planted trees and shrubs should be watered well at the time of planting. Natural rainfall is usually not adequate to provide the moisture needs of recently installed landscape plants. Young plantings need an equivalent of one inch or more of rain per week. Newly planted trees and shrubs may need to be watered two or three times a week in extremely hot, dry, windy weather because their root systems cannot take up the amount of water needed to replenish the water lost through leaves. Watch for signs of wilting as one indicator that the plant needs water. But also be aware that some plants in chronically wet sites may also wilt. Feeling or probing in the soil around the root ball is also another way to monitor soil moisture. Apply water slowly at the base of newly installed plants, such as through a trickle irrigation system.

Keep a four to six foot, grass-free circle around young trees and shrubs the first two to three years. Benefits of mulching to create a weed and turf-free area include reduced plant competition for water and nutrients and even soil temperature and moisture. Keep the grass-free
circle filled with two to four inches of organic mulch, such as leaf mold, compost, bark, grass clippings, or straw. Do not mound mulch up against the trunk of trees or shrubs. Keep the mulch two to four inches away from the trunk; this is particularly helpful in preventing rodent damage during winter months. Excessive mulch against a trunk may also result in an environment favorable to disease and insect attack.

DO NOT use plastic under the mulch to prevent weeds. Roots are drawn to the surface and may be damaged by summer heat and winter cold. Also, rock mulches that transfer heat directly to the roots or limestone chat that releases calcium into the soil are not recommended.

When transplanting woody plants, the only necessary pruning is the removal of broken or damaged branches. Excessive pruning at planting reduces leaf area, which decreases the amount of plant energy generated that is needed to create a healthy root system. Another common practice when planting trees is to stake the tree. Stake young trees only when they are top-heavy or planted in windswept areas. Prolonged staking can have detrimental effects on the development of the tree. Too often, staking materials end up injuring or girdling a tree. If staking is necessary, leave stakes in place very briefly.

Trees are a large investment for the landscape, but can greatly increase the value of a home, as well as create a desirable living environment. Take special care to establish trees properly. OSU Extension Factsheet HLA-6414 Planting Trees and Shrubs provides more information to help you be successful.

**Cooking with Barbara** – Barbara Brown, Extension Food Specialist, makes an Italian garbanzo soup.

**This Week in the Vegetable Garden** – This week we can continue to transplant tomatoes, eggplant, peppers, and tomatillos into the vegetable garden. And if you haven’t done so already, start your okra and winter squash seeds if you are planning to grow your own transplants. We are finally out of the cold weather and should not have to worry about frosts, but we can keep our row covers out and use them for insect protection. Summer squash and cucumbers are often inundated with insect pests. Some of these, such as the squash vine borer can kill plants outright. A row cover will help prevent squash bugs, vine borers, and cucumber beetles from reaching plants. But cucumbers and squash are insect pollinated, so we will have to remove these in a few weeks when flowers develop.

**Announcements:**
The Oklahoma Horticulture Study Group, Inc. will hold an Heirloom Tomato, Veggie and Herb Sale on Saturday, May 1 from 9 AM until 4 PM at the Tulsa Garden Center next to the Linnaeus Gardens. Over 60 varieties of heirloom tomato will be available along with sweet potato slips, and many more vegetables and herbs. For more information and a complete list of plants, e-mail OKHortStudyGroup@aol.com or call 918-827-6455.

The Fred A. Barkley Branch of the American Begonia Society will hold its annual plant sale from 8:30 AM to 4:00 PM on Saturday, May 1, at the Will Rogers Garden Center, 3400 NW 36th Street, in Oklahoma City. For more information please call (405) 390-4228.
The Tulsa Perennial Club Perennials and More Plant Sale will be held Saturday, May 1 at the Tulsa Garden Center Auditorium, 2435 S. Peoria, from 9:00 AM - 3:00 PM. Perennials, annuals, herbs and craft items will be for sale. For more information visit: www.tulsaperennialclub.com.

Sincerely,
Kim Rebek, Oklahoma Gardening Host

**Italian Garbanzo Soup**

- 2 cans, 15 ounces, garbanzos or chickpeas, rinsed and drained
- 2 large cloves garlic, peeled
- 2 cups fat free, reduced sodium chicken broth
- 2 teaspoons olive oil
- 2 cups cold water
- 1 medium onion, chopped
- 2 tablespoons tomato paste
- 1 teaspoon chopped fresh rosemary
- 1/2 teaspoon salt
- 1/2 teaspoon black pepper
- 1 teaspoon fresh lemon juice
- 2-1/2 tablespoons flat-leaf parsley, roughly chopped

1. In large saucepan combine garbanzos, garlic, chicken broth and water. Bring to a boil over medium heat. Reduce heat, simmer, covered, 20 minutes or until beans are very soft. Let cool at least 10 minutes.
2. While beans cook, heat oil in small skillet over medium –high heat. Add onion and cook 5 minutes, stirring often.
3. Transfer both/bean mixture and cooked onion to a blender in two batches. Add tomato paste and rosemary. Blend to desired smoothness.
4. Return soup to large saucepan, add salt and pepper and heat to desired temperature for serving. Remove from heat and stir in lemon juice. Garnish with parsley.

Serves 6.

**Nutrition Facts**

<table>
<thead>
<tr>
<th>Servings per recipe: 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calories 196</td>
</tr>
<tr>
<td>% Daily Value</td>
</tr>
<tr>
<td>Total Fat 3g</td>
</tr>
<tr>
<td>Saturated Fat trace</td>
</tr>
<tr>
<td>Cholesterol trace</td>
</tr>
<tr>
<td>Sodium 649mg</td>
</tr>
<tr>
<td>Carbohydrate 35g</td>
</tr>
<tr>
<td>Dietary Fiber 7g</td>
</tr>
<tr>
<td>Protein 8g</td>
</tr>
<tr>
<td>Vitamin A: 5%</td>
</tr>
<tr>
<td>Calcium: 6%</td>
</tr>
</tbody>
</table>

Barbara Brown, Food Specialist
Oklahoma Cooperative Extension Service 4/10
This week on Oklahoma Gardening we visit TLC Florist and Greenhouses in Oklahoma City to take a peek at new plants for the 2010 season.

**Annuals and Groundcovers** – April Enos joins us to present new annuals for the garden.

- **Euphorbia**, *Euphorbia hypericifolia* ‘Hip Hop’
- Scaevola, *Scaevola* hybrid ‘Bombay Dark Blue’
- Lobularia ‘Snow Princess’
- Scaevola, *Scaevola* hybrid ‘Topaz Pink’
- Scaevola, *Scaevola* hybrid ‘Topaz Blue Bicolor’
- Euryops, *Margarita amarilla* ‘Sonny’
- Ribbon Bush, *Homalocladium platycladum*
- Mexican Petunia, *Ruellia brittoniana* ‘Chi Chi’
- Salvia, *Salvia elegens* ‘Dancing Flame’
- Ornamental Pepper, *Capsicum annuum* ‘Purple Flash’
- Shrimp Plant, *Justicia brandegeana* ‘Hollandica’
- Salvia, *Salvia* hybrid ‘Cervina’
- Orange Sedge, *Carex testacea*
- Variegated Scented Geranium, *Pelargonium citronella*
- Lisianthus, *Eustoma grandiflorum* ‘Sapphire Pink Rim’
- Sun Coleus, *Solenostemon scutellarioides* cultivars
- Piggyback Plant, *Tolmiea menziesii*

**Ground Covers:** *Sedum* species
- Juniper Thyme, *Thymus leucotrichus*
- Silver Carpet, *Dymondia margaretea*
- Hens & Chicks, *Sempervivum tectorum*
- Variegated Pennywort, *Hydrocotyle vulgaris* ‘Variegata’
- Echeveria, *Echeveria nodulosa*

**Woody and Herbaceous Perennials** – Cindy Townsend brings us the best in new perennials for 2010.

- Columnar Plum Yew, *Cephalotaxus harringtonia* ‘Fastigiata’
- Spreading Japanese Plum Yew, *Cephalotaxus harringtonia* ‘Prostrata’
- Cranesbill/Hardy Geranium, *Geranium pretense*: ‘Hocus Pocus’ and ‘Cheryl’s Shadow’
- Endless Summer Hydrangea, *Hydrangea macrophylla* ‘Twist & Shout’
- Columbine, *Aquilegia chrysantha* ‘Denver Gold’
- Hellebores/Lenten Rose, *Helleborus* hybrids: ‘Onyx Odyssey’ and ‘Splashdown Strain’
- Foxglove, *Digitalis purpurea* ‘Candy Mountain’
- Fernleaf Bleeding Heart, *Dicentra formosa*: ‘King of Hearts’ and ‘Burning Hearts’
Itoh Peony, *Peonia x hybrid* ‘Sequestered Sunshine’
Hydrangea, *Hydrangea arborescens* ‘Incrediball™’ and ‘Invincibelle Spirit’
Dianthus/Sweet William, *Dianthus barbatus* ‘Heart Attack’
Scent First™ Dianthus, *Dianthus* hybrid ‘Tickled Pink’
Scent First™ Dianthus, *Dianthus* hybrid ‘Passion’
Salvia, *Salvia* hybrid, ‘May Night’
*Salvia, Salvia nemorosa* ‘Caradonna’
Mealy Cup Sage, *Salvia farinacea* ‘Cathedral Deep Blue’
Mullein, *Verbascum* hybrids: ‘Summer Sorbet’ (raspberry color), ‘Blue Pixie’ (purple/blue), ‘Jackie’ (light peach color), and ‘Flower of Scotland’ (dark peach color)

**This Week in the Vegetable Garden** – This week in the vegetable garden we transplant our solanaceous crops – the tomatoes, peppers, eggplant and tomatillos. Remember to set a stake or cage for your tomatoes and tomatillos at planting time to help support the plants as they grow.

**Cooking with Barbara Brown**

**Baked Oatmeal with Fruit and Nuts**

- 1-3/4 cups low-fat milk
- 2 teaspoons unsalted butter
- 1/8 teaspoon salt
- 1 cup old-fashioned rolled oats
- 1/4 cup dried apricots, chopped
- 1/4 cup dried cranberries, raisins or other small dried fruit
- 1 tablespoon lightly packed brown sugar
- 1/2 sweet apple, peeled and cored
- 2 tablespoons lightly packed brown sugar
- 3 tablespoons chopped pecans or walnuts

5. Preheat oven to 350°F. Spray a 2-quart microwaveable, ovenproof casserole with nonstick vegetable spray.
6. Heat milk and butter in casserole dish in microwave oven on HIGH until milk steams, 1 to 2 minutes. Mix in salt and oats. Set aside.
7. Mix chopped apricots, dried cranberries and 1 tablespoon brown sugar into oats. Shred apple into oats and mix to combine.
8. Bake, uncovered, 15 minutes. Stir oats then top with 2 tablespoons brown sugar and nuts. Bake, uncovered, 15 minutes longer, until oats are chewy. Serve at once.

Serves 4.
## Nutrition Facts
Servings per recipe: 4

<table>
<thead>
<tr>
<th></th>
<th>Calories</th>
<th>Calories from fat</th>
<th>% Daily Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Fat</td>
<td>8g</td>
<td></td>
<td>12%</td>
</tr>
<tr>
<td>Saturated Fat</td>
<td>2g</td>
<td></td>
<td>12%</td>
</tr>
<tr>
<td>Cholesterol</td>
<td>9mg</td>
<td></td>
<td>3%</td>
</tr>
<tr>
<td>Sodium</td>
<td>126mg</td>
<td></td>
<td>5%</td>
</tr>
<tr>
<td>Carbohydrate</td>
<td>32g</td>
<td></td>
<td>39%</td>
</tr>
<tr>
<td>Dietary Fiber</td>
<td>5g</td>
<td></td>
<td>16%</td>
</tr>
<tr>
<td>Protein</td>
<td>9g</td>
<td></td>
<td>17%</td>
</tr>
<tr>
<td>Vitamin A:</td>
<td></td>
<td></td>
<td>18%</td>
</tr>
<tr>
<td>Vitamin C:</td>
<td></td>
<td></td>
<td>4%</td>
</tr>
<tr>
<td>Folacin:</td>
<td></td>
<td></td>
<td>4%</td>
</tr>
<tr>
<td>Calcium:</td>
<td></td>
<td></td>
<td>16%</td>
</tr>
<tr>
<td>Iron:</td>
<td></td>
<td></td>
<td>9%</td>
</tr>
<tr>
<td>Potassium:</td>
<td></td>
<td></td>
<td>12%</td>
</tr>
</tbody>
</table>

Barbara Brown, Food Specialist
Oklahoma Cooperative Extension Service

---

### Announcements:

The Oklahoma Horticulture Study Group, Incorporated will hold an Heirloom Tomato, Veggie and Herb Sale on Saturday, May 1 from 9 AM until 4 PM at the Tulsa Garden Center next to the Linnaeus Gardens. Over 60 varieties of heirloom tomato will be available along with sweet potato slips, and many more vegetables and herbs. For more information and a complete list of plants e-mail [OKHortStudyGroup@aol.com](mailto:OKHortStudyGroup@aol.com) or call 918-827-6455.

The Fred A. Barkley Branch of the American Begonia Society will hold its annual plant sale from 8:30 AM to 4:00 PM on Saturday, May 1, at the Will Rogers Garden Center, 3400 NW 36th Street, in Oklahoma City. For more information please call (405) 390-4228.

The Tulsa Perennial Club Perennials and More Plant Sale will be held Saturday, May 1 at the Tulsa Garden Center Auditorium, 2435 South Peoria, from 9:00 AM to 3:00 PM. Perennials, annuals, herbs and craft items will be for sale. For more information visit: [www.tulsaperennialclub.com](http://www.tulsaperennialclub.com).

Sincerely,
Kim Rebek, *Oklahoma Gardening* Host

---

### Pruning Winter-burned Boxwoods

Wide fluctuations in temperature, prolonged dry periods, drying winds and bright sunshine can cause winter damage to many of our broadleaf evergreens such as boxwood. Boxwoods or *Buxus sempervirens* are rather susceptible to winter injury, especially if the health of the plant is compromised entering the winter. Various types of winter damage can occur. Most commonly, we see winter burn on foliage that has been desiccated. Water loss occurs in winter when high winds or temporary warm weather causes a plant to give...
off an unusually high amount of moisture. When this occurs during periods when the ground freezes, plants are unable to take up moisture from the soil. Such winter-burned foliage may appear reddish brown yellowish or grayish green, in color, or may completely lose color.

Another type of damage occurs from temperature fluctuations. During warm periods, the plant begins to come out of dormancy and water moves through the plant stems. When the temperature drops below freezing, the water freezes and expands, splitting plant tissues. With severe damage, we may see entire branches dieback, especially in the middle and apical parts of the crown. We may also see cracks develop in the stem.

Dead and damaged tissue will not recover and needs to be removed. This raises the question of how to prune boxwoods, should they be sheared or pruned? Shearing is the uniform removal of all or part of the latest flush of plant growth. Plants are sheared to increase compactness or to maintain a specified size or shape. During the first few years after planting, boxwoods should be sheared after each flush of growth to encourage additional branch development. After the first few seasons, boxwoods should only be sheared to maintain a desired shape or form. It is important to note that continuous shearing causes a thick outer shell of foliage that produces dense shade on the interior branches. Continuous shading of the inner branches results in foliage drop from those shoots and we end up with a plant that is bare beyond a thin, dense outer layer of foliage. This can have a negative impact on the overall appearance of the shrub.

Pruning is the removal of selected branches or plant parts. Plants are pruned to remove diseased, injured, dying or dead branches. We can also remove unwanted branches by pruning. Boxwoods are best pruned, rather than sheared, to maintain a natural shape and to keep plants at a desired size so that they do not outgrow their landscape value too quickly. Boxwoods usually require some pruning in spring to remove any branches that have been killed during the winter. Also, as plants get older, some of the older branches may have to be removed so that light can get to the inner shoots.

Envision the natural shape and selectively cut back out-of-place branches. A compact plant results when branches are pruned back to a lateral within the plant canopy. This will also hide the stub and extend the time between prunings. It is best to be slow and deliberate when pruning. Step back from the plant frequently to look at the overall shape, identify individual branches that need to be removed, and cut them to a lateral within the canopy. Don’t remove too much at once without rechecking the overall shape and appearance.

Now that we have a better idea of pruning methods, how do we deal with winter damage? Winter burn or tip burn is quite minor and only affects the tips of branches. Simply remove the dead tips with pruning shears or hand pruners. The plant will recover quickly.

Winter damage can cause one or more branches to die out completely. When we look closely at these damaged limbs, we find bark splitting which can often continue all the way to the base of the branch. Prune these branches back to the point where the splitting stops. Full recovery can take several years.

Winter burn of the total plant is the most devastating. In this case the whole shrub will turn a pale yellow and every branch will have splitting bark. For these plants, the only chance for recovery is to severely prune the plant. In spring after all chances of severe frost are past cut all branches back to a twelve to eighteen inch mound, depending upon the size of the plant. This
method is not always successful; be prepared to completely remove the plant if it does not recover.

Maintaining the health of the shrub throughout the growing season will help make it more resilient to winter damage. Water shrubs during dry periods throughout the year to maintain plant health. It is also important to fertilize plants at the proper time of year. Make all applications before July, as applications late in the year encourages new growth that does not have time to harden off before the winter. The same is true of pruning. Heavy pruning late in the season can cause excess growth of tissues that will enter the winter tender.

Resources:
- OSU Extension Factsheet HLA-6409 Pruning Ornamental Trees, Shrubs, and Vines
- NC State University Horticulture Information Leaflet “Growing Boxwood in the Landscape”: http://www.ces.ncsu.edu/depts/hort/hil/hil-8628.html

**Planting Brambles** – Blackberries are among the easiest of all fruits to grow. Few fruits produce more dependably. Properly maintained, irrigated plantings of good varieties may produce crops for 15 years or more. Blackberry fruit has a range of distinctive flavors which vary from sweet to tart. Blackberries and their hybrids have either an erect, semi-erect or a trailing growth habit. Semi-erect and trailing blackberries require trellises. While erect blackberries do not require a trellis, it is recommended to grow them with a trellis system to aid in plant maintenance and to help protect plants against wind damage.

When selecting blackberry cultivars, choosing several varieties with different maturation times can extend the harvest season considerably. Several good varieties of erect blackberries have been released by researchers in Arkansas. These seem well adapted to Oklahoma conditions and include a number of varieties named for Native American tribes, such as Navajo, Arapaho and Choctaw. When selecting cultivars, another consideration are the thorns. Some cultivars are thornless, which makes training and harvest a bit easier.

Raspberries are grown in many of the northern states, but are not very well adapted for Oklahoma. Buds often break during warm periods in January and February, making the plants very susceptible to cold damage from late frosts. Raspberries also are not heat tolerant. If you choose to plant raspberries, locate plants where they will receive afternoon shade or dappled shade all day. Cultivars vary considerable and produce fruits ranging from yellow to red to black. One cultivar that has demonstrated good performance in Oklahoma is ‘Heritage’. Raspberries generally require trellising.

Raspberries and blackberries are planted in the same way. Dormant plants are set in the ground during February or early March. Actively growing plants should not be planted outdoors until after the average frost-free date for your area. Space plants 3 to 4 feet apart in rows that are 6 to 8 feet apart. Plants should be set at the same depth at which they grew in the nursery row. Unless rain is likely, water the newly set plants.

During their first growing season after planting, erect blackberry plants often produce prostrate to semi-erect canes that sprawl over the ground. Erect canes will be produced in the following
years. First-year plants are allowed to produce as much growth as possible without pruning or training to a trellis. This season, our only maintenance concern is to keep our plants well irrigated and weed free, next winter I’ll return to start training the canes.

You can find more information on growing brambles in OSU Fact Sheet HLA-6215 Blackberry and Raspberry Culture for the Home Garden.

Gardening with Kids: The Bean Tepee – In this segment, 4-H and Youth Horticulture Programs Extension Associate Shelley Mitchell joins us to demonstrate a garden activity that is sure to bring children into the garden. We build a bean tepee that will support beans (or any vine) and create a fort for children to play inside.

Start by digging a shallow trench in a circle 3 to 5 feet in diameter, depending on the size of tepee you wish to build. To build the structure we used long linear branches from a crape myrtle, though any type of branch will work. Branches should be 6 to 10 feet, depending on the height you wish to build your tepee. Either tie all the branches together and set the tepee upright, or as we did, tie three branches to create your base. Then, stand the base up in the trench; this will act as your base for building the rest of the tepee. The base of the branches should be set in the dug trench. Place the remaining branches against the base until you have created a full circle. Be sure to leave a door for kids to enter the tepee.

Push the base of each branch into the soil as far as possible. Then, pull the soil back into your trench and around the base of each branch. This will help stabilize your tepee until the beans begin growing. Once the plants grow, the root system will further help in anchoring your tepee to the ground.

Tie all the branches together at the apex of the tepee. Use a strong twine or string and make sure to secure the branches well against the wind. Now, you are ready to plant. Any type of lightweight vine can be grown on the tepee, but to encourage children to eat more healthy vegetables, we are planting beans. Place 3 to 4 seeds at the base of each pole. Once the seedlings emerge, we will thin back to 2 plants per post.

This Week in the Vegetable Garden – This week we can transplant our cucumber and summer squash seedlings to the garden. I like to plant a few summer squash every other week for several weeks, so that the plants do not mature all at one time. We can also direct sow corn and bean seeds into the garden this week.

Sincerely,
Kim Rebek, Oklahoma Gardening Host

Types of Evergreen Plants – Today, David Hillock and I will demonstrate pruning techniques for evergreens. First, I am going to take a look at the different types of evergreen plants found in the landscape. Evergreens may be divided into two groups: broadleaf and narrowleaf or coniferous evergreens.
The term broadleaf evergreen is somewhat misleading since it includes evergreen shrubs with large leaves such as aucuba, but also includes evergreens with small leaves such as boxwood. The term broadleaf is used to include all evergreens having relatively broad or wide leaves rather than the needle- or scale-like leaves of conifers. Broadleaf evergreens include plants such as:

- **Aucuba, Aucuba japonica**
- **Camellia, Camellia species**
- **Boxwood, Buxus sempervirens**
- **Cherry laurel, Prunus caroliniana**
- **Holly, Ilex species**
- **Mahonia, Mahonia species**
- **Nandina, Nandina domestica**
- **Photinia, Photinia hybrids**

In contrast, the term narrowleaf evergreen refers to coniferous plants with needle-like or scale-like leaves. These are the plants that we more readily associate with the word evergreen. The narrowleaf evergreens can be further divided into two general classes: needle-leaf and scale-leaf. The proper time and methods of pruning depend on which of the classes the evergreen belongs.

The pine tree is a good example of a needle-leaf evergreen. Trees and shrubs in this class bear branches that radiate from the trunk in whorls, like spokes from a hub. There is a length of bare trunk between the whorls. This class includes:

- **Pine, Pinus species**
- **Yew, Taxus species**
- **Fir, Abies species**
- **Spruce, Picea species**
- **True cedars, Cedrus species**

Arborvitaes and junipers are good examples of the scale-leaf class of coniferous evergreens, which bear their branches irregularly, somewhat like deciduous plants. This class can be pruned just before new growth begins in the spring and again in May, June, or July to shape or control growth. David Hillock is going to demonstrate proper pruning techniques of scale-leaved evergreens. Examples of scale-leaved conifers:

- **American Arborvitaes, Thuja occidentalis**
- **Junipers, Juniperus species**
- **Cypress, Cupressus species**
- **False-cypress, Chamaecyparis species**
- **China fir, Cunninghamia lanceolata**
- **Incense-cedar, Calocedrus decurrens**

**Pruning Needs of Broadleaf Evergreens** – Most broadleaf evergreens require a limited amount of pruning. When pruning is necessary, it generally done just before new growth starts in the spring. This will allow the evergreen to grow and reform itself, and cover pruning scars. Evergreens that flower in early spring such as camellias and azaleas should be pruned immediately after they finish flowering.
Pruning before new growth begins is especially important for evergreens that have only a spring burst of growth, such as photinia. For these plants, leafy growth will not cover any pruning cuts made after the spring growth period until the following year. Generally photinia is pruned to control plant size; however with proper plant placement in the landscape and careful cultivar selection, photinia will form well-shaped plants without pruning. The same is true of many other broadleaf evergreen shrubs, camellia, as long as the plant is given enough growing space. Taking the time to select the right plant for a location will reduce your maintenance needs in the long run.

Certain broadleaf evergreens like hollies have a major burst of growth in spring and fall while others like abelia and elaeagnus grow all summer. Many of these produce long, vigorous shoots that extend well beyond the natural canopy. These should be cut back severely within the canopy in late winter or early spring before new growth begins. Cut far into the canopy, but leave a few leaves on the stem.

Mahonia and nandina plants sometimes develop leggy branches with foliage only at the top. These may be removed at ground level or at any height desired. New shoots will develop just below the cut. The best time to prune is after berries drop in the spring. Usually, only a few of the tallest and oldest branches should be cut back to achieve a layered look. New growth will help fill out the lower portions of the plant.

Sometimes evergreens become too large for their location and severe pruning is required. Healthy, broadleaf evergreens such as hollies, camellia, and mountain laurel can be cut back to a stump and regrow. Others like photinia and boxwood may die or recover very slowly if pruned severely. This severe type of pruning is called rejuvenation pruning, and is successful when done in late winter or early spring before new growth begins. Cut back stems just above ground level, or up to four feet. It will take the plant 2-3 years to recover.

There are also a number of broadleaf evergreen trees common in the Oklahoma landscape such as live oak and Southern magnolia. The southern magnolia responds poorly to heavy pruning. Do not remove the lower limbs when a magnolia is young, or the bark may sunscald. It also causes a great deal of maintenance in removing the thick leaves when mowing. It is better to allow the trees to grow to the ground, where the leaf litter is hidden and the canopy creates excellent wildlife habitat.

**Pruning Deciduous Shrubs** – Most deciduous shrubs are pruned in the late winter or early spring. But like our spring-flowering evergreens, deciduous plants that produce flowers in the spring should be pruned after they complete blooming. Forsythia (*Forsythia* hybrid) is a good example. If it is pruned during the dormant season, the flower buds will be removed and the plant will have a poor floral display.

Hydrangeas (*Hydrangea* species) are typically cut back to the ground in early spring before new growth emerges. However, many of the buds on aerial shoots can survive the winter. Old shoots can be left on the plant to provide additional height to the plant. Simply cut back the tips of the shoots to an outward facing bud that has some green coloration, indicating it is living. The plants will have a much taller appearance and a layered look, as new lower growing shoots fill out the bottom portion of the plant.

There is much confusion on the pruning needs of Crapemyrtle (*Lagerstroemia indica*). Crapemyrtles require very little pruning. Often they are cut back uniformly to a height around
three feet above ground level. This is unnecessary and results in the production of numerous, weak, upright shoots. These shoots are often brittle and susceptible to damage. Crapemyrtles left to grow naturally produce a beautiful vase-like form. Minor pruning to removed broken, crossing, or rubbing limbs is all that is generally necessary to maintain a healthy shrub. Also, there is a misconception that removing last year’s spent flower buds will increase floral production in the current season. But because crapemyrtle flowers are produced on new (current season) wood, the presence or absence of last season’s flower heads has no bearing on flower production. Most commonly, crapemyrtles are pruned to control size, but a better way to manage plant size is through cultivar selection. Many small-growing and dwarf cultivars of crapemyrtle are available commercially. Choose from these if you wish to place a crapemyrtle in a confined area.

**Horticulture Tips for April with David Hillock**

- **Spring is the time for foliar diseases.** Cedar apple and hawthorn rust, fire blight, Diplodia tip blight of pine, powdery mildew and leaf spots. Selecting and planting disease resistant varieties should be the first step in controlling diseases. Apply fungicides as preventative spray as buds break or leaves form on susceptible varieties.
- **Be alert for insect pests and their predators.** If sufficient predators are present, don’t use an insecticide. Hand pick if possible. Watch for cut worms and cabbage loopers and dust with Bt. Don’t spray insecticides during fruit tree bloom or pollination may be affected.
- **Do not cut back foliage of spring flowering bulbs until they yellow.**
- **Planting of summer annuals and summer bulbs can begin after danger of frost, which is generally around mid-April in most parts of Oklahoma.** This is also a good time to plant perennials and groundcovers to take advantage of their burst of growth. **Warm-season annuals should not be planted until soil temperatures are in the low 60s.**
- **Put soaker hoses in place; inspect and repair drip and in-ground irrigation systems.**
- **The first application of fertilizer can be applied to warm-season grass this month, usually in mid-April.** Apply 1 pound N per 1,000 sq. ft.
- **Mowing of warm-season grasses can begin now as well.** Cut height for bermuda and zoysia should be 1 to 1½ inches. Mow buffalo at 3 inches.
- **Spring dead spot disease in bermudagrass reveals itself this time of year.** Do not spray fungicides at this time; instead, perform practices to encourage rapid recovery.
- **Warm-season grasses can be established from sprigs, plugs or sod beginning late April.**

**Vegetable Garden Chores** – Despite the cold spring we’ve had, the weeds are growing vigorously. Make sure to cultivate regularly to keep on top of this chore. As the weather warms they can easily get out of control. This week we are starting seeds indoors for our melon transplants that we will plant out into the garden in early May. Our peas are coming up and we will need to think about what type of trellis to use to support the vines. Also, remember we are not yet safe from frosts, so keep those row covers or sheets handy and watch the weather report.

**Announcements:**

OSU Extension will host a Native American Horticulture Conference on Thursday, April 8 from 8:30 a.m. to 5:00 p.m. at the Payne County Expo Center in Stillwater. Featured speakers include head horticulturalist from the Smithsonian’s National Museum of the American Indian, experts from Indian Nations across the state, as well university specialists. Registration is $100 and includes lunch. For more information contact Stephanie Larimer at 405-744-5404.

The Central Oklahoma Hemerocallis Society (Daylily Club) will hold its Spring Daylily Sale on
Saturday, April 10 from 8:00 a.m. – 2:00 p.m. at the Will Rogers Garden Center in Oklahoma City. For more information call Brenda Jindra at 405-433-2217 or Faye Ramsey at 405-603-2225.

Sincerely,
Kim Rebek, Oklahoma Gardening Host
Building Trellises for Hardy Kiwi and Passion Fruit Vines – We are adding two uncommon fruits to our orchard, Hardy Kiwi (Actinidea arguta) and Passion Fruit (Passiflora species). Both of these fruits grow as a vine and require a substantial trellis system for support. A variety of trellis styles can be used, but T-bar trellises are best for disease control and ease of handling. They are also the least expensive to construct and are better suited to bee pollination. However, if you have a large pergola or arbor, you can also use these to support fruiting vines.

Trellis rows should be oriented north-south for maximum exposure to sunlight. A typical T-bar trellis consists of posts supporting a long cross arm. Canes of the kiwi plant are tied to wires stretched between the cross arms. The system is similar to the blackberry trellis we build last fall, only larger.

We have already set 4-inch diameter cedar posts set in the ground 2½ feet deep. The posts are spaced a maximum of 16 to 20 feet apart. Ours are set 15 feet apart, with two end posts and one more set at the center of our row.

Kiwi plants can produce over 100 pounds of fruit per vine, so the end posts will potentially bear a great deal of weight. There are a variety of methods that can be used to strengthen the end posts to help support the weight of all this fruit. We are running a brace wire from the top of our end post to an anchor set in the ground. Screw-in earth anchors can be purchased at many hardware stores or you can make your own by welding a metal plate to a steel shank. Another option is to set a tie-back post. Anchors are set in the soil so that the end hook rests 3 to 4 feet away from the end post. It is set at a 45- to 60-degree angle pointing toward the end post and extends up to 4 feet below ground. Tie-backs are 4- by 4-inch posts set at an angle slanting away from the end post. Drive the posts into the ground 3 to 4 feet, with 6 to 8 inches extending above the soil surface.

For either style of anchor, a double wire brace is run from the top of the end post to the anchor. Twist the wires together to tighten the brace. Remember to include enough space to set anchors when you are planning your planting.

The crossbar is set 6 feet above the ground and is made of a 5 foot length of 2 inch by 4 inch treated lumber. A notch is cut into the post, and the narrow side of the 2 inch by 4 inch board is fitted into the notch. The crossbar is fastened with a bolt, and the ends are braced to the post with wire or wood.
High-tensile, galvanized, 9- or 10-gauge wires are run down the row and fastened to the crossbars — one near each end and one in the center. Two additional wires can be added, one between the center wire and each end wire. Strong tension is needed on the wires to support the vines and crop. We are using wire vices to fasten our wires to the cross arms, just as we did with our grape and blackberry trellises.

Young plants are trained up a stake until they reach the center wire. We will return later this season to plant our kiwi and passion fruit vines and discuss training young plants.

Standard T-bar Trellis (Illustration Credits: Northwest Berry & Grape Information Network)

Resources:
- OSU Extension Factsheet: [HLA-6249 Kiwifruit Production in Oklahoma](http://extension.oregonstate.edu/SUB1545)
- The Northwest Berry & Grape Information Network [http://berrygrape.org/trellis-systems-for-kiwifruit/](http://berrygrape.org/trellis-systems-for-kiwifruit/): Sponsored by Oregon State University, University of Idaho, Washington State University, and USDA-ARS
- University of Florida IFAS Extension Fact Sheet “The Passion Fruit” [http://edis.ifas.ufl.edu/mg328](http://edis.ifas.ufl.edu/mg328)

**Fertilizing Blueberries** – Blueberry plants require specialized soils and sites for optimal growth and fruit production. Plants grow best in very acidic soil, preferably between pH 4.5 and 5.1. Many nutrients naturally occur at low levels in acidic soil. Blueberries evolved under these acidic, nutrient poor conditions, so their nutrition needs are somewhat different from other fruits commonly grown in the landscape. Blueberries require relatively small amounts of most nutrients. In fact, blueberry plants can easily be damaged or killed by excessive fertilization.
Nitrogen is generally the only supplemental element required. Nitrogen is available in different chemical forms, depending on the type of fertilizer used. For blueberries, we want to avoid using the nitrate form of nitrogen, since nitrates occasionally have been shown to be toxic to blueberry plants. Ammonium sulfate or urea is preferred, and ammonium sulfate will help lower soil pH. Ammonium nitrogen is the form of nitrogen used to fertilize blueberries. Urea, sulfur-coated urea, ammonium sulfate, and cottonseed meal are acceptable fertilizers. Any fertilizer sold for azaleas or rhododendrons should also work well. Because blueberry plants require a large amount of irrigation water, a slow-release nitrogen source is most desirable to prevent excessive losses by leaching.

Nitrogen application rates increase with plant age. Extension Fact Sheet HLA-6248 Blueberry Production for the Home Garden lists the amount of nitrogen fertilizer required per plant by age.

Table 3. Ounces of fertilizer per plant per application.

<table>
<thead>
<tr>
<th>Year</th>
<th>Urea</th>
<th>NH4NO3</th>
<th>S-coated Urea</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.5</td>
<td>1</td>
<td>0.7</td>
</tr>
<tr>
<td>2</td>
<td>0.5</td>
<td>1</td>
<td>0.7</td>
</tr>
<tr>
<td>3</td>
<td>0.4</td>
<td>1.5</td>
<td>1</td>
</tr>
<tr>
<td>4, etc.</td>
<td>1</td>
<td>2</td>
<td>1.2</td>
</tr>
</tbody>
</table>


In the first year of planting, only one application is required and should be applied in the fall after the first growing season. In subsequent years, nitrogen is applied in small applications at several times during the growing season. Applications are made once before bloom, once after fruit set, and once in the fall. If the plants will not be allowed to bear fruit due to their age, make three fertilizer applications at roughly 6 weeks intervals.

Our blueberries are in their second year and we are applying 0.5 ounces of urea around each plant. Apply fertilizers uniformly around the drip line of the plant and one foot outward, but never near the base of the plant. Fertilizer applications will stimulate plant growth, and once our plants become productive, will also increase berry size and boosts total production. This is the first of our three applications for the season. We will make another application in about six weeks.

Hellebores – Hellebores include some 20 species of herbaceous perennials belonging to the genus Helleborus. Many hellebores are evergreen. The plants have beautiful dark green, leathery foliage year round and a winter flowering habit. The exact flowering time is variable by species, and has given us the common names used for this group, which includes Christmas Rose (Helleborus niger) for those species flowering near the Christmas season, and Lenten Rose (Helleborus orientalis) for the late winter, early spring bloomers. The flowers are indeed rose-like in appearance and nod toward the ground. The plants readily seed and each spring you will find hundreds of seedlings near the base of your mature hellebores. However, most of the seedlings are out-competed for light and water by the parent plant, as such, hellebores do not become weedy. If you wish to multiply the plant it is best to transplant seedlings away from the
parent plant where they will not be shaded or smothered by the heavy foliage.
We look at several variations of *Helleborus orientalis*, the Lenten Rose or Oriental Hellebore. Plants hybridize readily, and most of the Oriental Hellebores now found in gardens are considered hybrids. Flower colors are diverse shades of lavender, pink, burgundy, purple, green, and yellow, as well as bi-colored mixtures of these hues.

Another interesting species of Hellebore is the Stinking Hellebore (*Helleborus foetidus*). This plant is so named because the foliage is pungent when crushed. The flowers of this species are different from those of the Oriental Hellebore, with clusters of drooping, lime-green flowers produced on upright stems in early spring. The foliage of the Stinking Hellebore is remarkable for its deep green color and finely divided leaves.

Hellebores prefer shaded, woodland conditions and fertile soils. Many species are very tolerant of dry soils and drought. *Helleborus foetidus* is particularly drought tolerant. Prized for their evergreen foliage, hellebores also put on a delightful floral show at a time when other flowers in the garden are fast asleep.

**Cooking with Barbara** – Barbara Brown, Extension Food Specialist, makes a cottage pie.

**Announcements:**
The Oklahoma Horticulture Study Group and OSU Extension Staff will host a Tomato Growing Workshop on Saturday, April 3 at the Tulsa Garden Center. Horticultural presentations will be made from Noon until 2 p.m. and plant sales will be held from 10 a.m. to noon, and 2 to 3 p.m. For more information e-mail OKHORTStudyGroup@aol.com.

OSU Extension will host a Native American Horticulture Conference on Thursday, April 8 from 8:30 a.m. to 5:00 p.m. at the Payne County Expo Center in Stillwater. Featured speakers include head horticulturist from the Smithsonian’s National Museum of the American Indian, experts from Indian Nations across the state, as well university specialists. Registration is $100 and includes lunch. For more information contact Stephanie Larimer at 405-744-5404.

The Central Oklahoma Hemerocallis Society (Daylily Club) will hold its Spring Daylily Sale on Saturday, April 10 from 8:00 a.m. – 2:00 p.m. at the Will Rogers Garden Center in Oklahoma City. For more information call Brenda Jindra at 405-433-2217 or Faye Ramsey at 405-603-2225.

Please contact your local Oklahoma Cooperative Extension Service Office for more educational information on garden-related topics. If you need further information about this week's show, call (405) 744-5404 or visit our website http://www.oklahomagardening.okstate.edu. Thank you for your continued support!

Sincerely,

Kim Rebek
*Oklahoma Gardening* Host
Cottage Pie

- 1 pound extra lean ground beef
- 1 cup diced onion
- 3 cloves garlic, minced
- 1-1/2 cups canned no salt added green beans, drained
- 1-1/2 cups peeled, sliced carrots
- 1-1/2 cups canned no salt added corn, drained
- 1/4 cup broth (low sodium beef broth or liquid drained from canned vegetables)
- 1/2 teaspoon pepper
- 1-1/2 teaspoons dried thyme
- 1-1/2 teaspoons dried rosemary
- 3 cups mashed potatoes
- Brown gravy, optional

1. Preheat oven to 350°F. Spray a 2-1/2-quart casserole with non-stick vegetable spray.
2. Heat a large skillet over medium heat. Add ground beef and onion. Cook 5 minutes or until meat is brown and onion is translucent. Add garlic and cook 30 seconds.
3. Add green beans, carrots, corn and broth; cover and cook 5 minutes or just until carrots are tender, stirring occasionally. Add pepper and herbs. Stir. Taste to check seasoning.
4. Pour beef mixture into a prepared casserole dish. Cover with mashed potatoes and bake 30 minutes or until edges brown. If serving with gravy, prepare gravy while casserole bakes.

Serves 6.

<table>
<thead>
<tr>
<th>Nutrition Facts without Gravy</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Servings per recipe: 6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Calories 340</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Calories from fat 144</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% Daily Value</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Fat 16g</td>
<td>24%</td>
<td></td>
</tr>
<tr>
<td>Saturated Fat 6g</td>
<td>30%</td>
<td></td>
</tr>
<tr>
<td>Cholesterol 54mg</td>
<td>18%</td>
<td></td>
</tr>
<tr>
<td>Sodium 326mg</td>
<td>14%</td>
<td></td>
</tr>
<tr>
<td>Carbohydrate 32g</td>
<td>11%</td>
<td></td>
</tr>
<tr>
<td>Dietary Fiber 5g</td>
<td>20%</td>
<td></td>
</tr>
<tr>
<td>Protein 19g</td>
<td>38%</td>
<td></td>
</tr>
<tr>
<td>Vitamin A: 178%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vitamin C: 23%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Folacin: 15%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Calcium: 8%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Iron: 21%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Potassium: 25%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Barbara Brown, Food Specialist
Oklahoma Cooperative Extension Service
Preparing the Planting Bed for Grapes – The weather has certainly slowed our progress in the small fruits garden, but there is still plenty of time to get our grapes in the ground. Previously, we established a trellis to support our grape vines. Today we will prepare the planting bed and put our grape plants in the ground.

The first consideration in establishing a grape bed is the planting site: grapes require full sun conditions. They can be grown on a wide range of soil types, as long as there is adequate drainage and moisture retention. If your soils do not drain well, establish your grapes on a raised bed. Grapes will require irrigation throughout the growing season, so make sure water is easily accessible at the planting site. When selecting a site you also want to avoid areas where cold air settles, such as at the bottom of a slope. These areas tend to have greater problems with frost damage.

We had not been able to work the soil until this week, because it has been too wet. To preserve soil structure, avoid tilling when soils are wet. You can tell if the soil is dry enough to work by squeezing a handful of soil lightly in your hand. If the soil sticks together in a ball it is too wet, if it crumbles easily it is dry enough to work.

Ideally, soil preparation begins the year before planting. It can take a full season to get perennial grasses like johnsongrass and bermudagrass under control. Last season we worked to remove the turf and reduce the weed pressure in our grape bed. Another job to tackle the season before planting is amending soil. Grapes grow best in soil with a pH range of 5.5 to 6.5. Conduct a soil test several months before planting grapes to determine soil pH and identify potential nutrient deficiencies. A soil sample can be taken to the local OSU County Extension Office. Refer to OSU Extension Fact Sheet PSS-2207 for tips on collecting a good soil sample.

Our soil pH was a little high, so we added sulfur to lower the pH. It can take several months to achieve the desired pH, so try to address soil preparation well in advance of planting. This season we are adding organic matter to our planting bed. Straw, manure or compost can be added by tilling or turning it into the soil several weeks before plant growth is initiated. We are using Boost-It humified compost from SoilSmart Organics donated by Ag Natural out of Bartlesville. Compost is an excellent source of organic matter. Think of organic matter as the magic elixir of soil, it loosens clay soils and increase the water-holding capacity of sandy soils. It also feeds important microorganisms.

Based on your soil test results, you may also need to add fertilizer to the soil to meet nitrogen, phosphorous, and potassium requirements. Base application rates on the recommendations provided with your soil test results. Generally, one-year-old vines require 15 pounds of nitrogen.
per acre per year. The rate of application you use will depend on the results of your soil test, the formulation of the fertilizer you choose, and the spacing of your vines. Ask your extension agent for help in calculating how much fertilizer should be applied near each vine.

**Planting Grapes and Gooseberries** – There are three optimal planting times for grapes. Dormant or inactive grape plants can be set between the first of February and mid-March. Actively growing plants should be planted after the frost-free date for your area, in Stillwater that will be April 15. In the southeastern portion of the state plants can also be set in the fall from October through mid-November. Plants should not be set during dry windy conditions or if extremely cold weather is predicted during the following few days.

There are many grape varieties that perform well in Oklahoma. Factsheet HLA-6246 lists a number of good cultivars and their characteristics. We are planting cultivars from the Arkansas breeding program that have been trialed at OSU’s research station in Perkins. We planted the cultivars ‘Mars’ and ‘Sunbelt’. These arrived bare-root, which means they are not potted in soil, but have the roots exposed.

Soak bare-root plants in water for two to three hours before planting. Do not allow plants to become dry during the planting operation. Plant the grapes at the same depth at which they grew in the nursery. This is very important because plants set too deeply may rot, and plants set too shallowly may dry out and die. You can see the soil line on the trunk to guide you in setting them at the correct depth. The planting hole should be 2 to 3 times wider than the root ball. Spread the roots out somewhat in the planting hole. You may wish to build a small mound under the center of the root ball to keep it at the proper depth. Pack the soil firmly enough to hold the vine in the ground if it is tugged on lightly, but not so firmly as to crush the plants. Space plants 8 feet apart in rows. We will come back after bud break to select a single shoot to train as our trunk.

We are also planting gooseberries in our small fruit garden. These are less fun to plant thanks to the spiny trunks. A good pair of leather gloves will help with this problem. Gooseberries are best planted while still dormant, from early February through mid-March. They tolerate heavy soils, but will need good drainage, so we are establishing them in a raised bed. They are planted in much the same way as the grapes, but they do not require as much space. Set the plants 4 feet apart in the row. Before setting plants, cut the tops back to 6 to 10 inches. Plants are also set slightly deeper than the soil line, so that the first branch starts just below the soil surface. This is to encourage a bushy habit.

Good cultivars for Oklahoma include ‘Poorman’, ‘Invicta’, and ‘Pixwell’. Gooseberries require plenty of moisture and will require regular irrigation. Mulch the plants to help retain soil moisture. This will also help keep soils cooler during the hot days of summer. We will return later this season to establish an irrigation system for our small fruit planting.

**Planting Fruit Trees** – We had a few gaps to fill in our orchard and after a little debate decided to plant a white peach tree and an apricot tree. Both these fruits can be difficult to produce in Oklahoma, as they tend to break bud early and a late spring frosts can kill the blossoms. Crops are inconsistent, but when you do produce a crop, it sure is worth the wait.

A number of cultivars are suitable for Oklahoma; refer to Extension Fact Sheet HLA-6222 Home Fruit Planting Guide for recommended varieties. Fruit trees should be planted when
they are dormant, from early February through mid-March. If you order your plants from a nursery, they will arrive bare-root. It is important that you do not allow the roots to dry out or freeze during the planting process. Prepare your planting hole, digging it wider than the diameter of the spread roots. The fruit tree should be set at the same depth as it grew in the nursery. This is determined by looking at the soil stains on the trunk. Generally, the plant is set so the root flare is just above soil level.

Trim off broken and dried roots and set tree at proper level. You may need to mound up soil under the root ball and spread the roots down and outward over the mound. Make sure the roots are left in a natural outward position. Place topsoil around the roots and firm the soil to exclude air. Always water after planting.

Fruit trees need plenty of room to establish a healthy root system. Space trees 18 to 20 feet apart in rows, with rows set 24 feet apart.

Sometime, we have to delay planting after we receive plants. We had this problem last week as the soil had been too wet to prepare our planting beds. When you have to hold bare-root plants, the best way is to heel them in by forming a mound of loose soil or mulching material. Place the roots into this mound, cover them, and moisten. The trees may be vertical or horizontal as long as the roots are covered. This protects them from drying or freezing until you are ready to plant.

**Horticulture Tips** – David Hillock, Consumer Horticulturist, gives us tips for March.

**Flower and Garden**
- Cultivate annual flower and vegetable planting beds to destroy winter weeds.
- Divide and replant overcrowded, summer and fall blooming perennials. Mow or cut back old liriope and other ornamental grasses before new growth begins.

**Tree and Shrubs**
- Prune roses just before growth starts and begin a regular disease spray program as the foliage appears. ([HLA-6403 & EPP-7607](#))
- Prune spring flowering plants immediately following their bloom period.
- Foliar diseases such as anthracnose on sycamore, maple, and oak and Diplodia Pine Tip blight control on pines should begin at bud swell. ([EPP-7634 & EPP-7618](#)).
- Dormant oil can still be applied to control mites, galls, overwintering aphids, etc. ([EPP-7603](#))

**Turf**
- Broadleaf weeds can easily be controlled in cool-season lawns at this time with postemergent broadleaf herbicides. ([HLA-6421](#))
- March is the second best time of the year to seed cool-season turfgrass; however, fall is the best time to plant. ([HLA-6419](#))
- Cool-season lawns such as bluegrass, fescue, and ryegrass may be fertilized now with the first application of the season. Usually, four applications of fertilizer are required per year, in March, May, October, and November. ([HLA-6420](#))

**Preemergent Weed Control of Summer Annual Weeds** – Now is the time to be thinking about controlling summer annual weeds such as crabgrass with preemergent herbicides. Actually we recommend applying preemergent herbicides as early as mid-February to control crabgrass and other weeds. So if you haven’t already applied one, you should do so as soon as possible. The idea is to have the chemical in place a couple weeks prior to conditions that are favorable for weed seed germination; germination can begin when the soil temperatures are in the mid to
upper 50s. Preemergent herbicides must be watered in through irrigation or rainfall to activate the chemicals within 24 to 48 hours after application. This is especially important in turf areas where the herbicide needs to be washed through the canopy of the turfgrass and down to the soil surface where the weed seeds germinate. Failure to do so will result in poor control.

There are several types of preemergent herbicides available; some are registered only for turf areas, some are registered for landscape and garden areas. Be sure to read the product label and select one that is labeled for use in the area you are using it and has the weeds you want to control listed. Heed label cautions when using any weed killers near or in the root zone of desirable plantings.

**Cooking with Barbara** – Barbara Brown, Extension Food Specialist, talks more about the Slow Food Movement.

Sincerely, Kim Rebek, Oklahoma Gardening Host

**********************************************************************

Oklahoma Gardening Information Sheet (#3634)

**OETA air date:** February 20 and 21, 2010
**OETA airtime:** Saturday 11:00 a.m., Sunday 3:30 p.m.

**Building a Grape Trellis** – This season we are planting grapes in our small fruits garden. To get ready for planting, we need to first prepare our planting site. Our soil needs a bit of preparation, but it is too wet to work, so that will have to wait. In the meantime, we will install our trellis system. A trellis is used to support the weight of the grape vine with a full fruit load.

There are three commonly used trellis systems. Last fall, we looked at examples of each of these with Dr. Eric Stafne at the Cimarron Research Station in Perkins. The style of trellis used depends on the type of grape that will be grown. American grape species and French-American hybrids tend to grow downward, while *Vitis vinifera* or European grapes grow upward. The downward growth of American and hybrid grapes is best suited to curtain style trellises. These include the High Cordon system, which supports the vine on a single wire 5 to 5 ½ feet above ground level. The fruiting shoots hang downward from this wire like a curtain. Another system is the Geneva Double Curtain, which adds a second top wire to the high cordon system. The Geneva Double Curtain is for extremely vigorous grape varieties and is not commonly used in the home setting.

*Vinifera* type grapes, including most wine grapes, are often grown with the Vertical Shoot Positioning or VSP System. This trellis system uses a low cordon wire set about 3 feet above ground level. The plant shoots grow upwards from this cordon wire and are woven through a series of horizontal catch wires as they grow vertically toward the top wire. The VSP system is more expensive to install and requires more continuous training and vine management. It is also not widely used in the home setting.

Most backyard grape growers use the High Cordon System as it is less expensive, simplest, and requires less upkeep with training vines. The trellis is fairly easy to install. It consists of line posts in the rows, end posts for support, and a high-tensile galvanized steel wire.

The first step is to set the end posts. End posts are usually cedar or cured lumber four by four
inch posts. We have already set our end posts, which are 8 feet long, with 2 ½ feet driven into the ground and 5 ½ feet above ground. For larger plantings, the end posts should be reinforced using a post anchor to help bear the weight of the fruit. If you are planting more than one row of grapes, set the rows 10 feet apart.

Grapes are set 8 feet apart in the row, with three plants set between line posts. This gives us a spacing of 24 feet between line posts. Our entire planting is only 24 feet long, so we will adapt the system slightly to our smaller space. Place a line post between each plant. This will help take some of the weight off of our end posts. Line posts are usually steel t-posts but can also be 3 to 4 inch wooden posts. Again, these are 8 foot posts driven 2 ½ feet into the ground.

Now we install the wire. Use a durable galvanized steel wire, we used a number 9 wire, which is recommended. The wires should be secured tightly, but allow a little bit of give. Wires stretch over time and will need to be tightened each spring. The wires can be stapled onto end posts, but this may make it difficult to tighten in the spring. Another option is to use wire vices on the end posts to allow for easy tightening. They also hold the wire securely. Wire vices are inexpensive and well worth the cost for ease of maintenance. The vices are set into drilled holes and screwed into place. Be careful to place them in the correct direction, as the wire can only be pulled through in one direction.

Stretch the wire through the end posts and secure snugly. Use wire ties to secure the wire to t-posts. Our trellis has a second wire three feet above the ground. We will use this wire to train the main trunk up to the top wire. We will be back later this season to plant, but in the meantime, we need to wait for the soil to dry out some so we can prepare our planting bed.

**Fruit Elimination on Ornamental Trees** – Every summer we get calls from homeowners who are dealing with messy fruits from landscape trees. Unfortunately, when we receive these calls it is usually too late to do much about it that year. Fruit control is possible, but timing is critical and must be done when flowers and fruits are forming in spring/early summer. Of course the best approach is to plant trees that don’t produce messy fruits or if you still have an appreciation for the fruiting characteristics, make sure you locate the plant in the landscape where the fruits can fall, but not be a nuisance. You could also consider planting fruitless varieties. These come as sterile forms of the tree species or in some cases as male selections. Some species produce male and female trees; obviously the female trees have the potential for producing those unwanted fruits; the males won’t produce fruit. For example, fruitless sweetgum varieties are available like ‘Rotundiloba’ which is a sterile or near sterile variety of sweetgum; Kentucky coffeetree is an example of a species with male and female plants, the most common male selection being ‘Espresso’.

If you are just stuck with existing trees in the landscape that produce those annoying fruits, you have some chemical options. Two types of chemical products are available for fruit control.

Etapheron is a plant growth regulator that when applied to plants reacts by liberating ethylene, which interferes with the plant growth process resulting in reduction or elimination of fruit. The only product registered in Oklahoma that is packaged for the homeowner is Florel® Brand Fruit Eliminator by Monterey Lawn and Garden Products. This product should be applied to the tree when it is in mid-to full-bloom and temperatures should be between 65-95 degrees Fahrenheit. The plants should also not be under stress. Complete coverage is necessary to achieve
satisfactory control. This may be a problem for the homeowner who is trying to control fruits on a large, mature shade tree such as sweetgum or sycamore, but may be an option for a smaller ornamental tree like crabapple. Most homeowners won’t have the equipment to reach high into large trees and get complete coverage so they have to hire a pesticide applicator or arborist to do the work. Drift should also be avoided as it may cause temporary modifications to plant growth of nearby plants. Of course, always be sure to read and follow all label directions!

The other product registered for use contains the plant hormone IBA, which promotes premature drop of flowers. However, it can only be applied by an arborist or commercial pesticide applicator. The product is applied as a trunk injection at the beginning of bud break for best results.

No matter which chemical approach you choose, both will need to be repeated yearly. Remember, the best approach is to plant trees that don’t produce those annoying fruits.

**Cooking with Barbara** – Barbara Brown, Extension Food Specialist, makes an Italian tomato sauce.

**Herbicide Applications to Dormant Bermudagrass** – With the cold temperatures and snow cover we have recently had, turfgrass weed management hasn’t exactly been at the front of our minds. But February is a good time to make herbicide applications to dormant bermudagrass for weed management. Products containing glyphosate (such as Round Up) can be used to control winter annual grasses and most winter annual broadleaf weeds. Adding a broadleaf herbicide such as Weed B Gone or Trimec is helpful in controlling a wider assemblage of broadleaves. Timing of applications is driven largely by temperature. Dormant applications work best if temperatures are in the low 60s or high 50s. When temperatures are cooler than this, the treatment is either slow to work or may be considerably less effective. So once those temperatures start to rise, we are ready to make the treatments. It is important that we do not make applications to frozen turf or frozen soil.

As this is a dormant application, the bermudagrass must be completely dormant. That is, it must have a completely tan canopy with preferably no green shoots of bermudagrass sticking above the tan canopy. This does not mean that if you parted the canopy with your hands you would not be able to find green, red or purple stems of bermudagrass below the tan canopy. In fact, one hopes they find green, red or purple stems of bermudagrass above the soil level but below the top tan canopy of leaves or else you have had a substantial winterkill of the aerial shoots at least to soil level. Scout your turf to make certain it is dormant before making the application. We often receive calls in our county extension offices of homeowners asking if the bermudagrass is dormant, but the only way to tell is to look at it. Bermudagrass generally breaks dormancy first on south facing slopes, along concrete and south side of structures where temperatures are warmer.

While we want our bermudagrass to be dormant, the weeds must be green and active for the herbicide application to work. This application does not kill seedling weeds that have germinated but are still located below the tan canopy of bermudagrass as they are protected from being hit by the herbicide. You have to be able to see the weeds. Also, this is not a pre-emergent herbicide application. Pre-emergent herbicides are used to kill weed seedlings and are applied before seeds germinate to manage annual weeds like crabgrass.
Before you treat your turf it is important to read the label carefully. Dormant bermudagrass must be listed on the label in order to use the product for that application. Be aware that many ready to use as well as consumer concentrate materials might not have dormant application on their label.

It is also important to make sure you are treating the proper species. Glyphosate is labeled for dormant bermudagrass treatments, but not dormant zoysiagrass. Be sure you are treating bermudagrass. Do not treat tall fescue, perennial ryegrass, Kentucky bluegrass or any desirable cool-season turf with the dormant glyphosate application. The cool-season grasses will be active and will be damaged by the treatment, if not killed.

**Additional points for dormant application:**
- Always follow the labeled application rate
- Do not apply to saturated soil
- Do not apply if rainfall is projected in the next 24 hours
- Follow all safety precautions in the label
- Store unused chemicals properly
- Marker dyes are helpful in seeing where you have sprayed

For more information on herbicide applications to dormant bermudagrass can be found in OSU Extension Fact Sheet, [HLA-6421 Controlling Weeds in Home Lawns](#).

**Cooking with Barbara** – Barbara Brown, Extension Food Specialist, introduces us to the Slow Food Movement.

Sincerely, Kim Rebek, Oklahoma Gardening Host

******************************************************************************

Oklahoma Gardening Information Sheet (#3633)
OETA air date: February 13 and 14, 2010
OETA airtime: Saturday 11:00 a.m., Sunday 3:30 p.m.

**Safe Removal of Hazard Trees** – In this segment Charlie English and his team from English Tree Service of Oklahoma City join us in the studio garden to tackle a large tree removal project. While Charlie and his team demonstrate professionals at work climbing and lowering the hazard tree limb by limb, Charlie joins Kim to discuss the potential hazards dead and damaged trees can pose in the landscape, when a hazard tree should be removed, and when a project is too large to do-it-yourself. Charlie recommends having a certified arborist assess the health of trees in your landscape at least once every two years. Large trees can become extremely dangerous as they die and fail. While homeowners are often hesitant to pay for tree removal, the potential monetary damage a fallen tree can create is well worth the expense.

The large hackberry (*Celtis occidentalis*) being removed from the studio gardens shelters a number of shade-loving trees and shrubs beneath its crown. We are taking steps to protect the plants from possible damage during the removal. Simple shelters built of scrap plywood, metal sheeting, and other materials on hand are used to protect our Japanese Maple (*Acer palmatum*) and Oak-leaf Hydrangea (*Hydrangea quercifolia*). Ladders and overturned garbage cans may be used to protect smaller shrubs. We must also consider long-term protection of the understory
plants, as they will now experience increased exposure to mid-day sun.

Many trees experience severe damage during wind and ice events throughout the winter months. If you have a tree that has been damaged, you can learn more about proper management in OSU Fact Sheet EPP-7323, “Managing Storm Damaged Trees.”

Oklahoma Arborist Association – The arborists volunteering their time in the studio are all members of the Oklahoma Arborists Association. This group of tree care specialists is dedicated to continuing education, safety, and professionalism. President Bill Long joins us in the studio to tell about the organization and what it does for the state of Oklahoma.

Certified arborists are knowledgeable about the needs of trees and are trained and equipped to provide proper care. Hiring an arborist is a decision that should not be taken lightly. Proper tree care is an investment that can lead to substantial returns. Well-cared-for trees are attractive and can add considerable value to your property. Poorly maintained trees can be a significant liability. Pruning or removing trees, especially large trees, can be dangerous work. Tree work should be done only by those trained and equipped to work safely in trees. You can locate an International Society of Arboriculture (ISA) Certified Arborist in your area through the ISA website: http://isa-arbor.org/findArborist/findarborist.aspx.

We certainly appreciate the time and energy volunteered by our work crew today. Members of the Oklahoma Arborist Association volunteer their time to work on a service projects at different locations throughout the state each year. This February, you will see their handy work at the Cowboy and Western Hall of Fame and Museum in Oklahoma City.

Three-Cut Pruning with David Hillock – In this segment David shows us the three-cut pruning technique. If it becomes necessary to remove a large limb, do so by using this 3-step method. The first cut is an undercut made about a foot away from the trunk across the bottom of the limb. The second cut is made further out on the limb from the first cut. This cut is made all the way through the limb removing the larger portion of the limb. The third cut removes the remaining stub and is made near the base of the limb just outside the branch collar. If you do not follow these three steps, often even on smaller limbs, the weight of the limb will split the limb at the halfway point and rip or peel the bark, leaving a gaping wound. Pruning wounds should be kept as small as possible. Do not cut flush to the trunk, even in the absence of branch collars. Instead, remove limbs with bulges (branch collar) flush to the bulge, not flush with the trunk. Remove limbs without the swelling almost flush with the trunk. For more information, see Fact Sheet – HLA-6409 Pruning Ornamental Trees, Shrubs, and Vines.

Corrective Pruning for Ice-Damaged Trees – In this segment Kim visits with State Urban Forester Mark Bays in Oklahoma City to discuss pruning needs for trees that are damaged in winter ice storms. While initial pruning efforts removed major damage, trees will continue to require pruning to help direct new growth. Mark shares with us both proper and poor pruning techniques using a Lacebark Elm (Ulmus parvifolia) that has served as somewhat of a laboratory tree.

Sincerely, Kim Rebek, Oklahoma Gardening Host

Best of Oklahoma Gardening Information Sheet (#3632)
OETA air date: February 6 and 7, 2010
OETA airtime: Saturday 11:00 a.m., Sunday 3:30 p.m.
(Rerun of Show #3607, originally aired on August 15 and 16, 2009)

**Lane Agricultural Center** – In this episode we visit the Wes Watkins Agricultural Research and Extension Center in Lane to learn more about organic vegetable production. The extension center is housed in conjunction with the South Central Agricultural Research Center of the USDA-ARS, and together they comprise the Lane Agricultural Center. Lane houses a unique certified organic research field, where a team of scientists from both OSU-Extension and the USDA test a variety of practices for improving organic production in Oklahoma.

Dr. Warren Roberts, Associate Horticulture Professor, joins us to provide an overview of organic vegetable production and helps take some of the confusion out of the word “organic”. He also discusses ways of building healthier soils, the foundation of organic production. We also take a look at some of the studies he is conducting with tomatoes. These include an experiment with canopy cover to manage foliar diseases, grafting heritage cultivars onto sturdy rootstocks, and testing different pruning practices to maximize yields. Some of his studies are in support of the Farm-to-School program, a program that connects growers to school cafeterias as a way to provide the children of Oklahoma with healthy, fresh food choices. One such study investigates planting dates for sweet corn, to better match harvest times with the return of children to class in fall. In the same plots, Dr. Roberts is also studying combinations of organic fertilizers to identify ideal delivery systems of important plant nutrients.

Dr. Angela Davis, Research Geneticist with the USDA-ARS, shows us a demonstration field that has been established to show growers the benefits and challenges of using different types of mulches in organic herb production. In addition to the benefits of mulches to plant culture, such as reduced soil erosion, better retention of soil moisture, and weed suppression, mulches also help to keep produce clean, a great benefit to market growers. In the demonstration, Dr. Davis compares plastic mulch to straw mulch, and bare soil.

Dr. Jim Shrefler, OSU Area Extension Specialist, shares an organic weed control study with us. Managing weeds organically is a great challenge to organic growers. While plastic mulches and cultivation are effective, they can be time consuming or expensive. Dr. Shrefler and collaborator Dr. Charles Webber of the USDA-ARS, are investigating a variety of substances for use as organic herbicides. While a number of substances are available commercially, few have been rigorously tested. The team is finding some success, but notes that timing is critical. As with any management strategy, control is much better when young weeds are targeted. Likewise, some weeds are much more easily managed with organic herbicides than others.

The work conducted in organic vegetable production supports a growing industry. Recent studies show that organic production is growing by more than 20% annually. OSU Cooperative Extension works to support all of Oklahoma’s producers, both traditional and organic growers, through scientifically based research and outreach.

Sincerely,
Kim Rebek, Oklahoma Gardening Host