

June 20 & 21

June 2009—*Oklahoma Gardening Shows*

June 13 & 14

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June 6 & 7

Oklahoma Gardening Information Sheet (#3552)

OETA air date: June 27 and 28, 2009

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

Integrated Pest Management with Dr. Tom Royer: Corrective Measures – In this segment we continue to explore aspects of Integrated Pest Management (IPM) with Entomology Professor and IPM Coordinator Tom Royer. Integrated Pest Management or IPM is an effective and environmentally sensitive approach to pest management that relies on a combination of common-sense practices including cultural and physical techniques, biological control and chemical pesticides. IPM focuses on preventing pest problems before they occur. When pest problems do arise, management options focus on those with the least possible impact on the health of humans and the environment. In this segment, we look at corrective measures that can be taken when pest problems arise.

Despite measures taken to prevent pest outbreaks, occasional problems still occur. One of the simplest ways we can manage pests once they are present is to physically remove them by hand. This is most commonly applied to weed pests, but we can also easily remove large insects such as tomato hornworms or Colorado beetles by hand. We can also squish the eggs of plant pests such as squash bugs and Colorado potato beetle. Pruning out diseased tissues from plants can help reduce the spread of disease agents in the garden.

Biological control agents, which we discussed in a previous IPM segment (see show notes for May 2 and 3, 2009), can also be released to manage a pest outbreak. This form of biological control is known as inundative control. With this approach the goal is to overwhelm the pest with a large number of natural enemies and provide a remedial, knockdown effect. This approach requires the purchase of natural enemies from a reputable supplier and their release into the landscape. There are many natural enemies available for purchase, but it is important to recognize that just because you can purchase it, does not mean it will work. The following tips will help you be successful in using inundative biological control measures:

- Know your pest.
- Know your natural enemies – some are very specific.
- Know your supplier and build a relationship with them.
- Know how to use the natural enemy – they are perishable!
- Have realistic expectations.

Another type of corrective measure that can be taken to manage pest outbreaks is chemical control. There are many different types of chemical controls, some of which are compatible with IPM. Many people think that chemicals do not have a place in IPM however, when used responsibly they can fit well into an IPM plan. Broad-spectrum chemicals kill beneficial insects as well as pests. When selecting chemicals look for products that are highly specific in action. Also consider microbial insecticides, such as Bt or Beauveria, which have a narrow host range. Likewise, a number of biorational products, such as spinosad, are available. Many of these products are not only safer for non-target, beneficial insects, but also safer for the environment. It is best to rely on chemical pesticides as a last resort in IPM. Be sure to identify the pest and only treat primary pests. Spot treat only those plants that are affected by the pest.

Japanese Gardens in the Medieval Period – During the Medieval Period between the 12th and 15th Centuries, gardens became smaller in size, but more artistic. Many designs focused on viewing from a single vantage point within an open sitting room. The Shoguns very much enjoyed viewing gardens and so they flourished during this period. During this time, Zen Buddhism spread across Japan and greatly influenced garden design. Landscape gardening was an instrumental component of the monk's path to enlightenment and grew to a fine art during this period. Most notable of these is the dry landscape or karesansui garden.

Karesansui Garden – Often called Zen gardens due to their close association with Zen buddhism, a karesansui or dry landscape garden is unique in that it uses no water. Instead, gravel or sand, raked or unraked, is used to symbolize water and the movement or feeling of water. Karesansui gardens are extremely abstract and represent miniature landscapes or mindscapes. Every element in the garden is representative of a larger, landscape component. Large boulders are used to represent islands, mountains or boats and are often set upright or at odd angles. We commonly see rocks set in groups of odd numbers and in triangular shapes reminiscent of the mountains. Moss is used to represent land or forests, and gravel or sand is used to represent rivers, lakes and seas. These dry water masses have as much impact in the garden as true ponds, and allow for a variety of expression through raking. Pruned trees and shaped shrubs can be used interchangeably with rocks to represent land forms. Like the larger viewing gardens of the time, Karesansui gardens are often meant to be viewed from a single vantage point.

The gravel features so prominently in the karesansui garden. We've used 3/8 inch limestone chips to represent the water in our garden. This is probably the largest size gravel I'd use, any larger and it would not rake nicely. The smaller the gravel, the more intricate your designs can be when raking. I purchased some pea gravel, which has much smaller particles than the gravel in our bed, and you can clearly see the difference in the raking between the two materials. When selecting gravel for a karesansui garden, you want small and uniform particles without fines (sometimes referred to as clean gravel).

The act of raking the gravel is both functional and meditative. The gravel is raked to create patterns recalling waves or ripples in water. This clearly adds to the overall aesthetical appearance of the dry garden. But for Zen monks, the practice of raking also helped them to focus their concentration, and so was a form of meditation. Achieving perfect lines is not easy, and so it requires mental focus and discipline. We are using a rake that the gardeners of Kameoka Exchange Center presented to the gardens years passed. Different rakes are used to achieve different forms and patterns. You can also use a garden rake to create similar lines in the gravel. The lines need not be static, but can change with your mood. Creating variations in pattern can be a creative challenge.

Our Karesansui garden is in full sun, but this style of garden is very adaptable to shady locations as well. A karesansui garden could be the perfect solution to those difficult to plant, heavily shaded areas of the landscape. In fact, many of the plants we commonly see in Japanese dry gardens, such as azaleas, mondo, and ferns require shade in Oklahoma. Many karesansui gardens outside of Japan utilize plants that are representative of the forms found in a traditional Japanese dry garden, but are better adapted to the local climate. A good example of plant replacement in our garden is the replacement of moss, the most typical ground cover, with something a little more tolerant of Oklahoma's heat. We have used Blue Star Creeper (*Laurentia fluviatilis*) quite successfully. It does well so long as you keep it watered.

Karesansui gardens were largely inspired by Japanese landscape painting and the two arts are closely linked. One magnificent example of karesansui is the garden at Ryoan-ji Zen Temple in Kyoto. This rectangular Zen garden is strikingly different from the pond and island gardens constructed in the medieval period. It

consists of only 15 boulders, white gravel and moss. It is up to the viewer to determine for his or herself what this garden signifies. The simplicity of the design and the contemplation it provokes are essential components of Zen philosophy. Laid out at the end of the 15th Century, the gardens at Ryoan-ji are considered one of the masterpieces of karesansui. The boulders are placed such that, when looking at the garden from any angle, only 14 of the boulders are visible at any one time. It is traditionally said that only when one reaches enlightenment is one able to view all 15 boulders.

Another interesting karesansui garden is at Ginkaku-ji Temple or the Temple of the Silver Pavillion in Kyoto. This dry garden, called Ginsyadan, consists only of white quartz, raked to symbolize waves and designed to be viewed by moonlight.

The poet Muso Soseki wrote a poem about karesansui in the late 1300s which nicely describes the symbolism evident in these Zen gardens.

Without a speck of dust being raised,
the mountains tower up,
without a single drop falling,
the streams plunge into the valley.

Ikebana – The Japanese Art of Flower Arranging – In this segment Kim shares a lesson in Ikebana. Ikebana is the Traditional Japanese Art of Flower Arranging. Like gardening and calligraphy, flower arranging is considered an art form and is traditionally passed from sensei to student. Kim's sensei was Mrs. Fujiwara, who studied Ikebana in the Ohara Ryu School, which follows the original style of Ikebana, and is one of 20 styles practiced today.

The Ohara Ryu style uses a very natural arrangement of flowers to highlight the natural beauty of plant forms. The tools we need to get started are a shallow container, a heavy holder, called a kenzan or frog, and of course plant material. Different schools of Ikebana use different types of kenzan. They are very heavy, and must be in order to support the plant material upright. Kenzan can be purchased at some florist shops or ordered on-line, just search Ikebana tools and you will find a number of suppliers.

Ikebana often emphasizes stems and leaves, rather than blossoms. The arrangements draw attention to shape, line and form rather than color. One aspect of Ikebana is the employment of minimalism. Arrangements consist of a minimal number of elements, but their organization is important and the essence of Ikebana. The structure is based on a triangle with the three points often considered to symbolize heaven, earth and man or the sun, the moon and the earth.

The three points of the triangle are created by the tips of the branches, flowers or foliage used in the arrangement. The first point of the triangle is upright and will be the tallest element of the arrangement. The second point is lower and set at an angle to the first, approximately 45 degrees off center. The third point in the triangle is lowest of the three and set at a very wide angle, almost horizontal. That establishes the basic structure with three points.

A second triangle may be set within the first. Typically, if two triangles are used together, the first, larger triangle is created using woody material, and the second may incorporate flowers. It is important to remember the idea of minimalism with the addition of flowers – only a few elements are used. The flowers (or foliage) are arranged along the three points of the triangle, again with decreasing height, and are set forward of the first, larger triangle. Flowers can be used singly or in small groups.

You can also apply the concepts of Ikebana to arrangements in a flower vase; however, it is difficult to

obtain the wide angle commonly used for the lowest point of the triangle. Selecting weeping or drooping plant material for the third point might help in obtaining the effect.

Ikebana originated as a Zen practice, first used in arranging flowers on the altars of Zen temples. Ikebana was later incorporated into the tea ceremony in a flower arranging ceremony called Sa Ho. As a Zen practice, Ikebana expresses beauty through simple forms and using few elements. The practice of Ikebana is meant to be a time of contemplation; a time to reflect on and appreciate nature. It provides relaxation for the mind, body and soul.

Sprouting Bean Sprouts – In this segment Kim demonstrates how to sprout bean sprouts for fresh consumption. Bean sprouts are the easiest and fastest crop to grow. They can be grown right in your kitchen with very little space – just enough room for a jar. Mung beans are the most popular variety of bean used for sprouting, but you can sprout any kind of bean or even lentils, and each will have a distinctive flavor. To get started all you need is a handful of beans, a jar, cheesecloth, a rubber band and a dish towel.

Start by washing the bean seeds thoroughly in water. Pick them over to remove any small stones or debris. Use about one-half cup for a large mason jar. The beans will expand three to five times their original volume, so be sure to adjust the amount of beans according to the container being used. Overcrowding can lead to poor sprouting and prevents proper washing which can encourage rotting.

Soak beans overnight in warm water at room temperature. In the morning, drain the beans and rinse thoroughly two to three times. Put the beans in the jar and cover with three to four layers of cheesecloth. Lay the jar on its side and shake gently to spread the beans out evenly. The beans will sprout in three to six days depending on the variety and the temperature of the room. During sprouting, it is important to rinse the beans regularly: two to three times in cool weather and three to four times in hot, humid weather. Rinsing is important to keep the beans evenly moist for sprouting. Rinsing also keeps the seeds fresh and clean. Some food-borne illnesses have been found associated with sprouts of all types. Rinsing does not guarantee protection against pathogens. Until effective measures to prevent sprout-associated illness are identified, persons who wish to reduce their risk for food-borne illness from raw sprouts are advised not to eat them; in particular, persons at high risk for severe complications of infections with *Salmonella* or *E. coli* O157:H7, such as the elderly, children, and those with compromised immune systems, should not eat raw sprouts. (Visit <http://www.cdc.gov/ncidod/eid/vol5no5/taormina.htm> for more information).

It is also important to keep sprouts out of the light. Light causes sprouts to turn green. White sprouts have a more delicate, sweet flavor. You can place the jar of sprouts in a cabinet or closet to keep them out of the light, but you do not want to forget about rinsing them. It may be best to keep the jar on the counter where you will see it regularly. Cover the jar with one or two dish towels to protect them from the light.

Once the sprouts have reached the desired size, rinse them in a bowl of cold water and run your fingers through them gently to separate the sprouts. Remove any hulls that float to the surface. Drain the sprouts well and store them in a plastic bag in the refrigerator.

This Week in the Vegetable Garden – We want to focus on keeping our plants clean and healthy. A few simple steps can be followed to help avoid foliar disease in our tomatoes. First, make sure to water plants in the morning, rather than late in the day. This allows time for the sun to dry foliage. When foliage remains wet overnight it provides an ideal environment for many bacterial and fungal diseases to develop. Using drip irrigation is a good way to avoid this problem. Also, it is a good idea to prune back any foliage that comes in contact with the ground. This will help reduce the spread of soil-borne pathogens to the leaves.

Announcement – The Water Garden Society of Oklahoma will be opening their yards for public viewing during their 23rd Annual Water Garden Tour on Saturday, July 11 and Sunday, July 12 from 9 a.m. to 6 p.m. All gardens are located in the Oklahoma City Metropolitan area. Tour maps will be available at area garden centers, as well as fish, plant and pond supply outlets. You can also visit their website for more information at www.WGSO.org.

Next Week on Oklahoma Gardening – We will continue looking at the gardens of Japan, focusing on gardens of the Edo Period and those created by designer Kobori Enshu. We will also feature highlights from this year's Summer Gardenfest, construct a bamboo fence and visit a bamboo grower right here in Oklahoma.

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

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Oklahoma Gardening Information Sheet (#3551)

OETA air date: June 20 and 21, 2009

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

(Rerun of Show #3514, originally aired on October 4 and 5, 2008)

Monrovia Nursery, New Plant Introductions – In this segment we visit with Nicholas Staddon, Director of New Plant Introductions for Monrovia Nursery. Monrovia is among the premiere nurseries producing quality container-grown plants for garden centers around the world. Founded in 1926, today Monrovia grows over 2,200 varieties and 22 million plants annually. Each season they offer new, improved varieties and we take a look at some of these varieties that are well suited for Oklahoma's climate.

Some of the features that Nicholas looks for in improved cultivars include year-round, or multi-seasonal interest, multi-use plants, dwarf cultivars, bold, new foliage colors, and wildlife interest. The following is a list of the plants presented in this segment:

River Birch, *Betula nigra*; improved cultivar 'Summer Cascade'

Dianthus (Pinks), *Dianthus* 'Wink'

Barberry, *Berberis thunbergii* cultivars: 'Crimson Pygmy' 'Rose Glow' and 'Golden Ruby'

Itoh Peony, *Peonia* hybrid 'Julia Rose'

Weigela, *Weigela florida* cultivars 'Magical Fantasy' (variegated) and 'Pink Poppet'

Snowberry, *Symphoricarpos* 'Scarlet Pearl'

Monrovia Nursery Tissue Culture Facility – In this segment we visit the tissue culture facility at Monrovia. Tissue culture is a plant propagation technique that allows for the mass production of plant material under sterile conditions. Some advantages of tissue culture include:

- Cloning to produce exact copies of plants with particularly good flowers, fruits or other desirable traits.

- Rapid production of large numbers of mature plants.
- Propagation of plants that otherwise are difficult to reproduce.
- Ability to clean a plant stock of unwanted disease agents.

Lisa Butera, Tissue Culture Research Coach, joins us to discuss the process of tissue culture from the laboratory to the greenhouse.

Barbara Cooks – Barbara Brown, Extension Food Specialist, makes cauliflower with almonds.

Cauliflower and Almonds

A main dish recipe

- 3 tablespoons slivered almonds
- 2-1/2 pounds cauliflower, cut in florets
- 1/2 cup crem fresh or crema Mexicana*
- 3 ounces Swiss cheese, grated
- 1/2 teaspoon coarse salt
- 1/2 teaspoon pepper
- 3 tablespoons dry bread crumbs
- 2 tablespoons chopped flat leaf parsley



1. Heat oven to 350°F. Spread nuts on a rimmed baking sheet and bake until browned and fragrant, about 6 to 8 minutes. Remove from oven.
2. Preheat oven to 375°F. Spray a 2-quart baking dish with nonstick cooking spray.
3. Bring a large pot of water to boiling. Add cauliflower and cook until just tender, about 5 minutes. Drain and spread on paper towels to dry.
4. Place cauliflower in baking dish and gently toss with crem fresh, half the cheese, salt and pepper. Sprinkle with remaining cheese. Cover with bread crumbs and toasted nuts.
5. Bake 20 to 25 minutes, until crumbs and nuts are golden. Garnish with parsley and serve.

Serves 6.

*To make your own crem fresh, warm 1/2 cup heavy cream to 100°F. Add 1 tablespoon sour cream, buttermilk or plain yogurt (whichever is chosen must contain active cultures). Let the mixture sit at room temperature for at least 9 hours then refrigerate until needed.

| Nutrition Facts | | |
|-------------------------|-----------------------|----------------|
| Servings per recipe: 6 | | |
| Calories 210 | Calories from fat 135 | |
| | % Daily Value | |
| Total Fat 14g | | 22% |
| Saturated Fat 7g | | 37% |
| Cholesterol 40mg | | 13% |
| Sodium 288mg | | 12% |
| Carbohydrate 14g | | 5% |
| Dietary Fiber 5g | | 21% |
| Protein 10g | | 19% |
| Vitamin A: 10% | Vitamin C: 149% | Folacin: 29% |
| Calcium: 21% | Iron: 8% | Potassium: 19% |

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Kim Rebek
Oklahoma Gardening Host

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Oklahoma Gardening Information Sheet (#3550)

OETA air date: June 13 and 14, 2009

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

OSU Study Abroad Course in Landscape Design – This week we bring you footage from our visit to Japan. For the past 10 years, Professor Paul Hsu from the OSU Horticulture and Landscape Architecture Department has been bringing students to Japan for a study abroad course in Japanese Garden Design. The course introduces students to the rich culture and history of gardening and landscape design in this magnificent country. It also provided an enriching exchange between students and gardeners, citizens and educators in Japan. To celebrate the 10th Anniversary of this cultural exchange, we were invited along to document the trip and of course visit a number of extraordinary gardens. We are excited to share these gardens and some gardening techniques that we learned along the way with all of our viewers over the next few weeks.

The Ancient and Heian Periods – The best way to understand garden design in Japan is to look at its development over the course of history. So over the next four weeks we will look at changes in Japanese garden design through four major periods of Japanese history. Techniques for creating artistic landscapes were first introduced to Japan with the influx of Chinese culture during the Ancient Period between the 5th and 8th centuries. Toward the end of this period landscape design began to take on a uniquely Japanese character and the first pond and island style constructed landscape gardens appeared. These had their origins in the Japanese concept of Shima, the name used to describe the artistic part of early gardens, which traditionally represented an island or shima. Few of these original gardens remain, however the style flourished over the next four centuries during the Heian Period of Japanese History. During this period the basic style and theory of Japanese garden design was established. Gardens were designed to symbolize natural landscapes and included the sea and seashores, islands, hills or mountains, waterfalls, streams and rivers. During the Heian period, ponds, which symbolized the sea, had smooth, shingle edges made of pebbles from rivers. The best example of a Heian Period garden is at the Buddhist Temple Byodo-in located in Uji City. The Phoenix Hall, built in the year 1053, is surrounded by a constructed pond with a small island, called Kojima, and the very characteristic smooth shoreline or Suhama.

Kiyomizu-dera Temple – In this segment we visit the Zen Temple of Kiyomizu-dera located in Uji City, Kyoto Prefect. Kiyomizu-dera was built in the early Heian Period and dates back to the year 798. The temple takes its name from the waterfall which runs through the temple. The name Kiyomizu means “clear water” or “pure water”. The temple is located on a hillside and utilizes natural scenery rather than cultivated gardens. The temple has had a number of traditions over the years, some of which are still practiced. Beneath the main hall is a waterfall called Otowa, which is diverted into three channels. The water is said to hold therapeutic properties and drinking from the three channels confers wisdom, longevity and health.

However, some Japanese people believe that one should drink from only two streams, as drinking from all three is greedy and can bring misfortune.

The temple includes a shrine to the god of love and good matches. Outside this shrine are two “love stones” set 18 meters apart. Visitors attempt to walk between the two stones with their eyes closed and if they succeed they are destined to find true love.

The most notorious tradition of Kiyomizu-dera centers on the veranda outside the main hall. The Japanese saying “to jump off the stage at Kiyomizu”, similar in meaning to the English phrase “to take the plunge” refers to an Edo Period tradition where it was believed if one could survive the 13 meter jump from the stage, one’s wishes would be granted. Of 234 recorded jumps, 85% survived the plunge. Fortunately, the practice is no longer permitted.

Vegetable Gardening with Sadaharu Murakami – In this segment we visit the vegetable garden of Sadaharu Murakami of Kameoka. Mr. Sadahara has lived in his small village within Kameoka for 70 years and has grown vegetables for most of those years. He uses a raised bed style of gardening, which allows for a very unique method of irrigation. Growers in the area utilize water running in streams off the nearby mountain side to irrigate crops. The water is carried through narrow channels along the edge of the street and used to flood the low area between the mounded rows. Water seeps into the mounds and waters the vegetable plants from the bottom, keeping foliage dry, which in turn helps fight disease. Mr. Sadahara grows many familiar vegetables, tomatoes, eggplant, onion, peppers and reaps enormous harvests. He utilizes organic fertilizers including compost, fish meal and poultry litter. He also follows a number of practices handed down over generations, such as removing the flowers from his potatoes to encourage better tuber production. To protect his cucurbits from cool spring night temperatures, Mr. Sadahara covers his plants with small plastic tents until the temperatures warm. He also rotates crops through the beds, allowing the soil to periodically “rest”.

Japanese Vegetables in the Studio Garden – In this segment we look at a variety of familiar and unfamiliar Japanese vegetables growing in the studio gardens. Beans play an essential role in cuisines all across Asia, from the adzuki bean common in Japanese soups, to mung beans which we most commonly see sprouted in our stir-fries or salads. We have planted soybean or edamame. While there are many uses for soybeans, we have selected a cultivar called ‘Beer Friend’ which is used for eating fresh. Each plant will produce many pods that each contains 3 to 4 seeds. We will boil the pods in salted water and enjoy the shelled beans as a healthy snack.

We take a look at a winter squash called Kabocha, it is also often called a Japanese pumpkin. The cultivar we planted is ‘Uchiki Kuri’. It is a Hubbard-type squash with orange-red rind, creamy yellow, thick flesh and a taste that is very sweet and nutty. Japanese pumpkins are commonly used in soups, stir-fries and pies. We also saw them grilled on the Japanese bar-b-que.

Onions are one of the oldest cultivated vegetables, so it is not surprising that they come in a wide variety of colors, shapes, sizes and flavors. We have selected a bunching onion called ‘Heshiko’. This is a perennial which can be harvested year-round. The slender stalks divide at the base to form a clump of foot-long shoots that are delicious in soups.

Asian eggplants are milder and have a more delicate taste than western eggplants. We selected the cultivar ‘Kyoto Eggs’ because it is very heat tolerant. While many Asian eggplants produce long slender fruits, this cultivar will produce rounded, three inch fruits with a deep purple color.

Peppers are another vegetable that come in a great variety of colors, sizes and flavors. We have selected a green variety called ‘Shishito’ that has a sweet-hot flavor perfect for stir-fries or tempura.

Perilla is a traditional Japanese herb used in flower arranging, as well as in cooking. The cultivar we planted is called ‘Aka Shisho’, and has deep red foliage which is also used to color preserved foods such as pickled ginger and salted plums. The aromatic leaves are reminiscent of anise, and used in salads or tempura, or to flavor seafood. The Vietnamese also use it to wrap around grilled meats.

In Oklahoma, the high summer temperatures typically prevent us from growing spinach much beyond spring or fall. But we are trying a pair of heat-tolerant spinach cultivars, the ‘Akarenso’ and ‘Okame’ hybrids. We will see how they take the Oklahoma heat!

Pines and Pruning – Pines are perhaps the plant that we most commonly associate with Japanese gardens and it is no wonder, as they certainly feature prominently. Pines symbolize longevity as well as permanence in contrast to the ever changing aspects of nature. The Japanese word for pine, Matsu, is also the pronunciation for the verb “to wait” and so pines also represent waiting or yearning for a lover or the resolution of an impossible situation.

The two most common pines in the Japanese garden are the Red Pine (*Pinus densiflora*) and the Black Pine (*Pinus thunbergii*) representative of the mountains and the sea shore. These pines are used in the garden to reflect their natural habitats and create the image of a seashore or mountain scene. All pines are pruned heavily to reveal their twisted, angular branching. In nature, strong winds create the characteristic crooked branching patterns, however, in protected gardens, these unusual shapes need to be re-created through pruning. This makes pines very labor-intensive to manage in the traditional Japanese style.

We were fortunate to have the opportunity to ask Professor Komai Kazuhiro from Kyoto University of Art and Design a few questions about pruning pine trees. Pruning is done when the new growth emerges. This new growth looks like tan candles on the ends of limbs and are commonly referred to as candles. We can shape and manage the growth of the tree by controlling how much of the candle remains. Typically, pruning needle-leaved evergreens is limited to while the candle is tan-colored and before the needles reach full length to avoid disfigurement. Usually in the spring, candles are tender enough to remove by pinching with your fingers.

It can be quite overwhelming to determine where we begin with such a project. Professor Komai described the process of pruning as looking for the character of the tree. Every person has their own unique character and the same is true of trees, but sometimes the character gets disturbed. When pruning, Professor Komai tries to find the character and make it more naturally visible by cleaning up all the unnecessary old needles. He is very careful in choosing the buds and angles of small branches, and each cut is considered individually. When Japanese pines are pruned following this method, the shapes that emerge are often very interesting. Sometimes branches stretch to great lengths, perhaps reaching out over water, and require bracing. The support structures used for such branches look a bit like crutches, with a small prop secured to the end of a wooden pole. These supports look very natural and disappear into the garden.

Pruning well maintained trees requires two basic steps; the first is pinching back candles. Professor Komai typically removes all but approximately 12 new needles from each candle. Once he has finished pinching the new growth, he goes back to remove the old needles. This allows more of the bark and intricate branch structure to be visible. One Japanese gardener described the number of needles on each branch tip as a family. When he prunes, he leaves a needle for each grandparent, one for each parent, and all the grandchildren of the family. Any extra needles are removed.

Sometimes we must remove branches to thin the canopy and reveal more of the trunk and structure of the pine. The first branches that can be removed are any that look broken or damaged. Then we remove branches that are growing in toward the interior of the tree rather than out and away from the tree. Whenever we prune a tree, we want to take extra precaution not to remove the top leader of the tree unless you want the plant to be shorter and denser. To give a more angular look, we will selectively leave branches at sharp angles. The best advice when pruning any plant is to take it slow. Step back from the plant frequently to look at its shape and try to find the character hidden within.

Announcements:

The Central Oklahoma Hemerocallis Society is having their annual Daylily Show on Saturday, June 20 at the Will Rogers Garden Exhibition Center in Oklahoma City. Doors are open to the public from 1 p.m. until 4 p.m. For more information, call 405-843-7130.

The Stillwater Water Garden Tour will be held Saturday, June 27 from 9 a.m. to 5 p.m. and Sunday, June 28 from 1 to 5 p.m. The tour features a number of water gardens throughout Stillwater, including our own water garden here in the studio. Tour booklets are available at Stillwater National Bank and Oasis Garden Shop. For more information, call Danny Chance at 405-564-0834.

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Sincerely,
Kim Rebek
Oklahoma Gardening Host

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Mechanical controls directly remove or kill pests, or physically keep insect pests from reaching their hosts by means a barrier (e.g., screens or row covers), trapping, weeding or removal of the pest by hand. Mechanical control methods can be rapid and effective, and are well suited for small acute pest problems in the home landscape. Mechanical controls have relatively little impact on natural enemies and other non-target organisms, and are compatible for use with biological controls.

Physical controls are methods that alter the physical environment in such a way as to make it unfavorable to the pest insect. An example of physical control that we have demonstrated previously on *Oklahoma Gardening* is solarization (see show notes for July 5 and 6, 2008 and September 13 and 14, 2008). Solarization is a simple non-chemical technique that captures radiant heat energy from the sun to kill seedlings and weed seeds, as well as some soil-borne disease organisms and nematodes. This is accomplished by spreading clear plastic over the soil.

Plastics can also be used for mulch. Certain insects respond to colored mulches, preventing them from landing on crop plants. Plastic mulch also provides a form of organic weed control.

Another simple mechanical management strategy is the use of row covers to prevent transmission of viral diseases to crops and to protect plants from insect damage. Row covers are lightweight, poly-spun fabrics that allow light, water and air to pass through. They are very effective in protecting plants from insect damage, such as that caused by flea beetles, squash vine borers or squash bugs. Another mechanical technique for managing squash bugs is to simply lay out pieces of wood in the garden. The bugs take shelter beneath the wood during the night and in the morning are easily collected for destruction.

Another form of mechanical control that we have demonstrated in the studio garden is the use of plant collars to protect crops from cutworm damage. Paper 'collars' placed around the base of the plant create a barrier between the worms and the plants. Materials that work well for collars include toilet paper or paper towel tubes, paper cups or strips of newspaper (see show notes for March 14 and 15, 2009).

Other types of mechanical control include cultivation or tillage to expose soil-dwelling insects to desiccation or predation; hand removal of insect eggs and large-bodied insects such as Colorado potato beetle and tomato hornworm; dislodging insect pests from plants by shaking plants or spraying plants with a strong spray of water.

Integrated Pest Management with Dr. Tom Royer: Cultural Control – In this segment Dr. Tom Royer discusses another aspect of Integrated Pest Management (IPM), cultural control. Cultural control basically addresses and affects the manner in which we cultivate our plants. Cultural control is generally simple, inexpensive and familiar to the homeowner, and is perhaps the most important aspect of home landscape pest control. Cultural control strategies include crop rotation, sanitation and other practices that reduce pest problems. It also includes practices such as the use of green manures or planting trap crops to manage nematodes, insects and disease organisms.

Where, when and how we plant can all affect the health of a plant. Selecting the right plants for the environment and placing them in an appropriate location are the first steps in culturally managing plant problems. Using resistant cultivars is another measure that can be taken to avoid pest problems. Many cultural control strategies are aimed at avoiding or preventing pest problems, rather than treating problems once they occur.

Practicing good sanitation by removing diseased tissue and picking up fallen or over ripened fruit is another way to reduce the incidence of pest problems. In the vegetable garden, using crop rotation and adjusting the planting dates are additional ways to avoid pest problems.

Plant Highlight: Chinese Snowball Viburnum and Solomon's Seal – In this segment we take a look at two interesting plants in the landscape, Chinese Viburnum and Solomon's Seal.

Chinese Snowball Viburnum (*Viburnum macrocephalum*) is a beautiful shrub that produces large white flower clusters in late spring. Hardy in zones 6-9, the deciduous shrub is an ideal addition to the Oklahoma landscape. It reaches a size of 12 to 15 feet and has a rounded to vase shaped habit. The plants do well in partially shaded locations. The foliage has a nice dark color, but the greatest feature of this plant is certainly the huge snowball flower clusters that can reach up to 8 inches. This shrub is heat tolerant and does not require much maintenance once established.

Solomon's seal is a perennial plant belonging to the genus *polygonatum*. Variegated Solomon's Seal (*Polygonatum odoratum* 'Variegatum') has a very strong white margin along the leaf edges. The plant has graceful, arching burgundy-colored stems that reach up to two feet. Plant Solomon's Seal in heavy shade, it does not tolerate strong sun, and the white variegation certainly brightens up a shady corner of the garden. The plant has a rhizomatous root system and spreads much like iris to form a dense clump.

The flowers are rather unusual in that they dangle below the stems like tiny bells. Because they are produced on the underside of the stem, they are often overlooked. The flowers are delicate, white bells produced in pairs at the base of each leaf from April to May. They have a light, lily-like fragrance. The flowers are sometimes followed by blue-black berries, but often the berries do not form.

The name "Solomon's Seal" is taken from the shape of the scar on the rhizome where the stem attaches. In some species this scar takes the shape of two overlapped triangles, which was the symbol King Solomon of Israel used to symbolize the union of body and soul. Solomon's Seal is fairly easy to grow, but will certainly benefit from the addition of organic matter in the soil. It is a delightful, elegant addition to the shade garden.

Summer GardenFest Preview – This year's Summer GardenFest is right around the corner. Next Saturday our studio will be transformed with a number of special guests providing hands-on demonstrations. Randy Stewart from Pond Pro Shops of Shawnee will teach visitors how to install do-it-yourself water features, and our own Garden Ambassadors Jim and Barbara Kirby will show us how to construct concrete birdbaths. We will also be joined by OSU Horticulture Professor Dr. Lou Anella who will teach us how install drip irrigation systems. I will be in the vegetable garden giving visitors a first-hand look at our intensive bed garden system. We will also have a number of 4-H students on hand to present their very own Centennial Garden, which they have designed and installed as a group. And as always, we will have a variety of activities to keep the children busy.

This year, we welcome Shawna Lee Coronado as our keynote speaker. Shawna is an author, newspaper columnist and environmental and health correspondent from Warrenville, Illinois. Shawna is making a difference by building a healthier lifestyle, greener environment and stronger community through gardening.

Shawna believes nature equals nurture, and that by gardening and spending more time outdoors we can build a healthier life style. She has spread the gardening bug throughout her community by creating a community garden that has helped bring her own community closer together. Shawna also encourages conservation in the home and garden by sharing tips on recycling materials in the garden, saving water and composting.

Shawna will speak on the topic of "Building Stronger Community Through Greening and Gardening" for Summer GardenFest 2009, beginning at 10 a.m. on Saturday, June 13. She is sure to inspire attendees with her energy and passion. You can read more about Shawna's "*Get Your Green On*" *Healthy Philosophy* in

her book “Gardening Nude” as well as in her newspaper column, *The Casual Gardener* and on her Blog at www.thecasualgardener.com.

Cooking with Barbara – Barbara Brown, Extension Food Specialist, makes a marinated onion salad.

Marinated Onion Salad

- 1-1/2 pounds large, sweet onions
- 2 tablespoons grated lime peel
- 3/4 cup fresh lime juice (8 to 9 fresh limes)
- 1 clove garlic, minced
- 1 tablespoon olive oil
- 1/4 teaspoon freshly ground black pepper
- 1/4 cup packed, chopped cilantro leaves
- 1/2 teaspoon salt, optional



6. Peel onions, cut in half and slice thin. Place in large non-metal bowl.
7. Grate peel from limes. Juice limes.
8. Mix peel, juice, garlic, oil and pepper and add to onion slices in bowl. Mix well, cover and refrigerate for a minimum of 30 minutes and up to 24 hours.
9. When ready to serve, toss again, adding chopped cilantro and salt, if desired. Serve chilled.

Serves 8.

| Nutrition Facts, with salt | | |
|----------------------------|----------------------|---------------|
| Servings per recipe: 8 | | |
| Calories 52 | Calories from fat 18 | |
| | % Daily Value | |
| Total Fat 2g | | 3% |
| Saturated Fat | trace | 1% |
| Cholesterol 0mg | | 0% |
| Sodium 136mg | | 6% |
| Carbohydrate 9g | | 3% |
| Dietary Fiber | 2g | 7% |
| Protein 1g | | 2% |
| Vitamin A: 0% | Vitamin C: 23% | Folacin: 4% |
| Calcium: 2% | Iron: 1% | Potassium: 4% |

Modified from original recipe at <http://www.fruitsandveggiesmorematters.org/>

Barbara Brown, Food Specialist
Oklahoma Cooperative Extension Service

4/09

Vegetable Garden Chores – Once we finish planting out our sweet potatoes and southern peas we can take a little break from planting in the vegetable garden. Of course, we will be busy bringing in the harvest and reaping some rewards from our hard work. It is a good idea to harvest regularly as to keep our plants in production and to prevent over-ripened or spoiled fruits from collecting in the garden. Spoiled fruits can attract insect pests and harbor disease agents that will spread through the garden. Following good sanitation practices by simply removing ripen fruits will go a long way toward managing pests. And don't forget to donate your extra produce to those in need at your local food pantry or soup kitchen.

Announcements

The Muskogee Garden Club will feature its Muskogee Garden Tour, Saturday, June 13, 2009 with gardens from the Country Club featured between 10 a.m. and 5 p.m. Tickets are \$5. In addition, a non-profit vendor area and club plant sale will be held as a fundraiser. Contact oyana@att.net or 918-683-5380 for more information.

The Tulsa Daylily Society presents the "Optical Extravaganza " (Daylily Show and Sale) at the Tulsa Garden Center Auditorium, 2435 S. Peoria on Saturday, June 13, 2009. It begins at 9 a.m. and ends at 4 p.m. A glorious display of flowering daylilies in colors of the rainbow, in all shapes, sizes and types. Everyone is invited to participate. Bring your entries at 9 a.m. and judging begins at 10 a.m. This educational event is free. For more information contact Randall Barron at 918-369-1581 or e-mail randallbarron@cox.net.

The 2009 OSU Lane Ag Center Annual Field Day will be held Saturday, June 13 from 9 a.m. to 3 p.m. The come and go event offers educational tours and displays of research and demonstration projects addressing vegetable production, herbs and alternative fuels crops. A featured aspect will be Certified Organic production and pest management practices. A meal featuring local cooking and ice cold watermelon will be provided. The event is open to the public and there is no fee to attend. The Lane Ag Center is located 10 miles east of Atoka on Highway 3. Additional information will be posted at www.lane-ag.org. For questions, call 580-889-7343 or email jim.shrefler@okstate.edu.

The Central Oklahoma Hemerocallis Society is having their annual Daylily Show, Saturday, June 20 at the Will Rogers Garden Exhibition Center, 3400 NW 36 Street, Oklahoma City. Doors open to the public from 1 p.m. to 4 p.m. For more information call 405-843-7130.

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