“Well the time of the year that I like the best, is the time when the mule walks ‘round the press” from the Ozark folksong The Cane Press. This song refers to pressing sorghum to get the juices out of the stalk to boil down into syrup. Sorghum and molasses are two different things. Sorghum comes from the juice of the sorghum plant and the majority of sorghum is produced in the United States. Molasses is the by-product of processing sugar cane into sugar.

Sweet sorghum is closely related to other sorghum crops. It differs from grain sorghum mainly that its grain yields are low and its stalks are taller and juicier with a higher sugar content. It reproduces by seed and is considered a perennial in tropical areas but is winter-killed in areas where frost occurs.

Sorghum isn’t a picky crop and can be grown in a wide variety of soils from Alabama to Minnesota but it is most extensively grown in the southeastern states. Like other crops, it needs adequate nutrients to produce good yields. It is also sensitive to acid soils so the pH needs to be above a 5.8 before planting. Do a soil test to determine what the soil needs before planting. Sorghum is grown in rows spaced 36 to 42 inches apart and weed control is important when the crop is in the seedling stage. There can be some disease problems including anthracnose, fusarium, and maize dwarf mosaic. These are controlled by planting resistant varieties and crop rotation.

Harvest of the highest-quality syrup is produced when the sorghum is harvested before the mature or ripe seed stage. Sugar content and syrup yields are generally higher as the stalk matures to the ripe seed stage. For the best syrup, most varieties are harvested when the seed is in the soft dough stage. Harvest is done by hand with a hoe or knife on small acreage. Seed heads need to be removed and can be saved for next year’s crop after doing a germination test. Excellent syrup can be made without stripping the leaves. However, the stalks should not be crushed while the leaves are still wet. Delay milling for 3 to 5 days to let the leaves dry, the stalks to lose
Sweet Sorghum and Syrup Production

By Katie Kammler, MU Horticulture Specialist

Some water, and natural enzymes within the stalks to invert the sugar. These changes will make the syrup easier to cook and less likely to crystallize.

The stalks are pressed to release the juices. There are many different types of presses, many dating back to the last century. There are quite a few people in this area that still grow and press sorghum. You can see a public demonstration at Ste. Genevieve Heritage Day in the fall. The raw green juice should be filtered through a coarse screen to filter out the larger debris. Then the juice needs to be allowed to settle for a minimum of 2 hours before evaporating so the top can be skimmed and the settlings removed before the cooking process. Evaporation pans are usually large and shallow to allow more surface area for the juice to evaporate off. When heat starts the evaporation process, skimming is continued to keep out debris. The syrup will get thicker as the water boils off. Finished syrup will usually boil at about 226°F. The finished syrup is thoroughly sterilized by boiling. If canned above 150°F in clean airtight containers, it will not spoil or ferment. It takes 6 to 12 gallons of raw juice to make one gallon of sorghum syrup.

For more information, refer to University of Kentucky Guide Sheet “Sweet Sorghum for Syrup” http://www.uky.edu/Ag/CCD/introsheets/swsorghumintro.pdf

Control the Spiky Seeds of the American

While the American Sweetgum tree adds a yellow/orange beauty to the landscape in fall and provides a nice patch of shade through the summer, it harbors some of the most annoying seeds to fall in the yard. Every autumn a yard containing the sweetgum is loaded with spiny balls of torcher that prevent the enjoyment of walking barefoot. These seed balls don’t easily decay and are often still present on the surface in spring.

The product Florel can be used by homeowners as a liquid spray while flowers are still present on the tree. If applied at the correct time (usually a one to two week window) it will prevent the flowers from becoming seeds. There will be several flower stages on the tree when the proper time to apply has arrived. Look for the majority of flowers to be in the middle stage of development. The spray will likely not reach the entire tree so there will still be some seed development.

Another option for seedless sweetgum is the cultivar ‘Rotundiloba’. This tree is weaker than the parent and can be hard to find in nurseries. The leaves are rounded at the tip versus pointed like the parent sweetgum but in fall it is more colorful.

Courtesy North Carolina Museum of Natural Science

Picture Courtesy of Chris Starbuck, University of Missouri.
Outdoor flowering plants and Ornaments

- Take geranium cuttings now. Keep the foliage dry to avoid leaf and stem diseases.
- Seeds of slow-growing annuals like ageratum, verbena, petunias, geraniums, coleus, impatiens and salvia may be started indoors now.
- Dormant sprays can be applied to ornamental trees and shrubs now. Do this on a mild day while temperatures are above freezing.

Indoor Plants

- To extend the life of Valentine flowers, recut the stems underwater with a sharp knife. Remove any stem foliage that would be underwater. Use a flower preservative.
- Repot any root-bound plants before spring arrives and vigorous growth starts. Move plants up to a container no bigger than one inch larger than the present container.
- Late February is a good time to air-layer house plants such as dieffenbachia, rubber tree, and dracaena or corn plant.
- Check all five growing factors if your house plants are not growing well. Light, temperature, nutrients, moisture, and humidity must be favorable to provide good growth.

Vegetable Gardening

- Before working an area in the garden for early spring planting, check the soil. It should be dry enough to crumble in your hand before you work it.
- Season extending devices such as cold frames, hot beds, cloches and floating row covers will allow for an early start to the growing season.
- Check any vegetables you have in storage. Use or dispose of any that show signs of shriveling or rotting.

Fruits and Nuts

- Begin pruning fruit trees. Start with apples and pears first. Peaches and nectarines should be pruned just before they bloom.
- If you want to raise fruit in your garden, try grapes, raspberries or strawberries. It is much less difficult to succeed with them than with tree fruits, and you will get much faster results.
- Grapevine pruning’s can be made into attractive wreaths. Decorate them with cut-out hearts, dried flowers, or bird nests, or shape them into a heart over a wire frame for use as Valentine gifts.
- Fertilize fruit trees as soon as possible after the ground thaws, but before blossoming begins.

Those Valentine Flowers!

Over 224 million roses are grown for Valentine’s Day.
More than $1 billion dollars are spent on flowers on Valentine’s Day.

Of Valentine’s floral purchases, 64% are made by men and 36% by women.

Of flowers purchased, 45% are roses, 41% mixed flowers, 13% are carnations and 8% are “other” single flower types.

Of roses purchased, 63% are red, 10% are pink, 5% are peach, 3% yellow, 2% white, 4% mixed colors, 2% other.

The number of women who send themselves flowers on Valentine’s day is 14%.

22% of consumers purchase potted plants to give on Valentine’s day.
Fruit plantings can be a source of beauty as well as fresh produce. However, for the inexperienced grower, they can also be a source of frustration and expense. Good harvests are possible, but only with careful selection of the fruit cultivar and with diligent pest management. Weather conditions in Missouri, such as high humidity, abundant rainfall and warm temperatures, increase disease and insect populations. With few exceptions, home fruit plantings require treatment with pesticides to control a variety of serious diseases and insect pests. Pesticides needed and frequency of application depend on the cultivars planted, location of the planting, weather conditions and cultural practices.

**Brown rot (A)** is a serious peach disease. It can attack the blossoms and the developing or ripening fruit and can even form cankers on small twigs. It must be prevented to ensure harvest of sound, good-quality fruit. Sanitation is also key. It is important to remove spoiled or mummified fruit from the tree.

**Peach leaf curl (B),** another troublesome disease, curls and deforms the leaves early in the season. It must be prevented by applying a fungicide, not oil, in the dormant period.

**Bacterial spot (C)** infects leaves, twigs and fruit. As lesions on the foliage enlarge, their centers abscise, leaving a shot-hole appearance. Lesions on the fruit often crack and exude gum. To avoid this disease, plant a bacterial spot–resistant peach cultivar. By the time the symptoms of this disease are apparent on susceptible cultivars, it is generally too late to control the disease on that year’s crop. However, preventive sprays may be used to protect the next crop.

**Cankers (D)** often follow winter damage, sunscald or insect damage (Figure 4). After infection, the wounded tissue exudes large amounts of amber-colored gum. Later, the infected bark cracks open and the affected tissue turns black. Cankers should be removed by pruning. Between cuts, disinfect pruning shears with an alcohol or bleach solution.

Several insect pests can be destructive to peach trees. The oriental fruit moth causes wormy peaches and die-back of young growing tips. The plum curculio lays its eggs in crescent-shaped cuts on the young fruit, resulting in larvae-infested peaches or fruit drop. Catfacing insects (tarnished plant bug and stink bug) feed on developing fruit, causing blemished or misshapen fruit. Borers attack the base of the trunk and the crotches of the main scaffold branches.

For more information on spraying for these peach issues, see MU Guide G6010, Fruit Spray Schedules for the Homeowner. Contact your local University of Missouri Extension Center or it can be found on the web at:

http://extension.missouri.edu/p/G6010
I was asked by my friends at the local beekeeping club and some of our master gardener students to address the issue of pesticide exposure avoidance for honey bees. The reason this article is appropriate now, is that planning ahead is essential to avoiding pesticide kills of honey bees like the one pictured here.

I reside in an area where agricultural pesticide use would be considered intense. Surrounded by 2.5 million acres of crop land where almost every acre is sprayed with at least one insecticide every season. Many acres have an application of fungicide and every acre receives multiple herbicide applications. You might assume that bees could not be kept here. That is not the case. Bees thrive here and produce a rich harvest of cotton and soybean nectar and pollen.

What is the secret? Communication plays a major role in avoiding pesticide kills. Hobby beekeepers are usually located on the outskirts of a town, village or city. These locations may have truck crops, orchards or farms in the vicinity. Many of the bee kills I have seen were the result of a neighbor or the beekeeper spraying their own garden at the wrong time or in the wrong manner. There are ways to avoid a catastrophe.

First, let everyone in your vicinity know that you have an apiary. Many cities have abandoned ordinances prohibiting honey bees. Beekeepers are becoming more common in urban areas. Pesticides are used more on golf courses than any farm. Pesticides are also used on lawns, trees and shrubs more often than on farms. Urban and suburban locations are dangerous for honey bees. These are also the most likely locations for hobby beekeepers. Enlist your neighbors help in keeping your bees healthy by reducing chemical exposure.

Most modern pesticides available over the counter are low toxicity chemistry for people. Many of these that are not insecticides are low toxicity to bees. Any herbicide available for general use and for sale at the garden center is not toxic to honey bees. Using the herbicide Roundup as an example of modern chemistry, it has extremely low toxicity to any living thing but plants. Chemical toxicity is measured in LD 50. That is Lethal Dose to 50 % of the organisms tested. Roundup has an LD 50 of 10,000. That means it takes 10,000 milligrams per kilogram of body weight to cause a lethal effect. By comparison, table salt has an LD 50 of 3,000 and a bar of bath soap has an LD 50 of 2,000 (5 times more toxic than Roundup). None of these chemicals are dangerous to people. Only the soap is dangerous to bees.

The most common insecticides available at the garden center are Malathion, Sevin, Permethrin / Cypermethrin, Acephate, and Spinosad. Only spinosad is considered “organic.” All are toxic to bees. Sevin is the one that is likely to make it back to the hive. Sevin is rarely used on commercial farms that sell produce. It is used in gardens and golf courses. Malathion and Acephate are very volatile and do not last long in the environment after application. Permethrin and Cypermethrin kill bees on contact but once dried on the plant have little effect. Spinosad runs Sevin a close second as far as danger to bees. With proper timing all of these

Continued on Page 6
compounds can be used with little danger to bees. If your neighbors know the location of your apiary they can avoid spraying it directly. The wind blows when the sun is up in the sky but not at dusk and dawn. Bees are active when the sun is up but not at dusk and dawn. If insecticides are applied at dusk, they have all night to dry on or soak in becoming little threat to bees. It is also good if neighbors do not spray insecticides when plants are in bloom. By not making applications when plants are in bloom and attractive and making applications to non-blooming plants at dusk I have managed to keep bees in this agriculture district for 30 years without pesticide kills. No farmer or applicator wants to kill your bees, talk with them.

All of the insecticides listed above are no more toxic to you or your dog than a bar of soap. They pose little risk to anything but insects. Pesticide kills are rare here in the north Mississippi River Delta because growers and applicators have been taught when to time applications and avoid bee kills. It is an education problem. Now you know what needs to be done and you, oh best beloved, are the educator. Bee safety is nearly as important as people safety. Insecticides are needed and “organic” ones are also deadly to bees. Timing and communication are the keys to success in avoiding bee kills.

Odd Vegetables: Kohlrabi
By Katie Kammler, MU Horticulture Specialist

Kohlrabi doesn’t seem like an odd vegetable to me because my grandpa always grew it but many people don’t know what it is. Kohlrabi is a part of the cabbage family. It is a cool season vegetable, planted either in the early spring or in mid-summer for fall harvest. Early Europeans grew kohlrabi starting around 1500 and it came to America 300 years later. It has the appearance of a turnip but the leaves come out of the edible portion. This portion is actually an enlarged stem section that grows just above the soil line. Kohlrabi is sometimes misclassified as a root vegetable.

Sow the seeds in rows and cover with ¼ to ½ inch of soil. Thin the seedlings to 2 to 5 inches apart. The thinned out plants can be used to fill in blank spots in the row or tender, stir-fry greens. Weed control is essential and they can have problems with cabbage worm and cabbage diseases. Kohlrabi has the best flavor when they are small. They taste like mild turnips. If the stem gets too big, it gets tough and woody and may have an off flavor. Harvest can begin when stems are one inch in diameter and continue until they are 2 to 3 inches. If they get bigger than that, the bottom portions tend to be woody but the top portion will still have tender portions, when the new leaves are emerging. The young leaves are also edible and can be cooked like other greens. It is a vegetable well worth trying.
# Group News - What’s Happening

## February 2014

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<td>Farmers Market Workshop; Fredericktown, MO</td>
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### March

- 1 - Parkland Master Gardener Spring Seminar, Mineral Area College, Fmgtn, MO
- 3 - Parkland MGs 1st Monday at 6:30pm, Memorial United Methodist, Fmgtn, MO
- 4 - Poplar Bluff MG 1st Tuesday at 6:00pm at PB Ext Center
- 8 - Cape County MG Spring Seminar at Nature Center in Cape Girardeau, MO
- 13 - Ste. Genevieve MGs 2nd Thursday, at 6:30pm, Ste. Gen. County Ext. Center
- 20 - Cape Girardeau County MGs 3rd Thursday at 7:00pm, Cape County Ext. Center
- 24 - Perry County MGs 4th Monday at 6:30pm, Perry County Ext. Center

### Upcoming Events

- April 10-13, 2014 - Dogwood Azalea Festival in Charleston, MO

Contact your local Extension Center if you have questions about any event on the calendar.

If you have a horticultural related event for the calendar call 573-686-8064 or email it to Denklers@missouri.edu.
Editor’s Corner

The Garden Spade is published monthly by University of Missouri Extension staff for individuals and families living in Southeast and East Central Missouri. This newsletter is provided by your local extension council.

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We welcome and encourage Master Gardener groups and individuals to submit items to the newsletter. We encourage the submission of any news such as upcoming volunteer opportunities, community events related to gardening, warm wishes or congratulations to fellow gardeners. We also encourage Master Gardeners to share experiences and write articles on timely topics.

All entries into the group news sections must be received by 4:30 on the 15th of each month for the following months news.

Email News to: kammlerk@missouri.edu, denklers@missouri.edu, or aufdenbergd@missouri.edu

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February 2014 Garden Spade