Have you ever craved fresh garden lettuce in the middle of winter? Do you want an extended garden season or a jump start on next year’s garden season? Why not set up a cold frame or a hot bed.

A cold frame is a simple, protected structure designed to protect plants during the winter, harden plants off before setting them out or start cool season plants earlier than they can be started traditionally out in the garden. Cold frames work similar to a mini-greenhouse in that they take advantage of solar heat for warmth. Soil and other materials within the structure absorb the heat during the day and the covering and insulated sides help to retain the warmth during the night. A hot bed is simply a cold frame with added or supplemental heat such as a heating cable or manure.

The structure of both cold frames and hotbeds is the same; basically it is a box covered with glass, polycarbonate, plastic film or clear fiberglass. The size can vary but most often it is 5 to 6 inches deep and anywhere from 6 to 12 feet wide. Height also varies but the structures are often 18 inches in the back and 12 inches in the front (sloping front). The slope of the front should face the south.

The materials used to build the structure should naturally resist decay such as cypress or redwood. The use of bricks, cinder blocks or concrete can make the structure more permanent and also tends to cost more than wood.

The Sash or covering used on the structure will depend on the dimensions of the bed. Glass is generally the best for a covering but old window sashes, sheet plastic, fiberglass or other clear materials can be used.

If you are going to heat a hotbed, there are several methods for doing this. These include manure, electric cables, light bulbs, hot water and steam. Using manure is the most economical if you have an available source however, temperature control is more difficult. Electric heating cables are the most convenient and dependable. Light bulbs are less expensive but also less satisfactory as a heat source.

The soil temperature in a hotbed should be between 70 and 75 degrees when seed germination is desired.
After the seeds have germinated, temperature should be adjusted for the type of plants involved. If you are growing cool season plants, the temperature should remain around 65 to 70 degrees during the day and 55 to 60 degrees during the night. If they are warm season plants, temperatures should be 65 to 75 during the day and no lower than 60 degrees during the night. In a cold frame, temperature control is difficult if not impossible to control since there is no heat source. Insulating on those very cold nights with careful daytime ventilation is important.

The structure will need to be ventilated on days where we have very sunny warm days. Opening the structure or completely removing the sash during the day might be required so the heat build up inside the structure does not damage the plants. A thermometer is the best guide to determine how much to open it to allow the proper air movement for temperature control.

Watering the plants inside the structure is very important. Structures should not be opened widely on very cold days. Water the plants early enough in the day to allow the foliage to dry before nightfall or before the frames are tightly closed. Little water is needed when the plants are small and the days are cold.

Remember to harden the plants off before they are moved into the garden. To harden plants, gradually expose them to the sun and wind by keeping the sash open wider and longer each day as well as the nights if the temperatures are not too cool.

Cold frames and hotbeds can be purchased, or you may want to build your own. If you would like more information on hotbeds and coldframes, see MU Guide 6965.

---

**Upcoming Volunteer Opportunities and Activities**

- As the Gardening season comes to a close, **Master Gardener Hours Volunteer Hours** also begin to slow up. If you have already completed your volunteer hours for the year, please send them to your local Master Gardener Coordinator. We accept them via mail, email, phone, and fax. Don’t forget, you can also enter hours online. [http://report.missourimastergardener.com/](http://report.missourimastergardener.com/)

- The Cape Girardeau County Master Gardeners will have their monthly meeting at Meier Horse Shoe Pines just outside of Jackson on November 18 at 6:30 p.m. The program will be on “Using Fresh Greenery”. Snacks will be provided. RSVP to Verla by November 16th by calling 573-243-0358 or by emailing ver-la1@charter.net. From the Highway 61, 72 & 25 Intersection in Jackson, go west on Hwy 72 for 1 mile, turn left (South) on Route PP, go 1 1/2 miles, turn right on Co Rd 330, go about 1/2 mile and watch for the signs!!!!

- **WELCOME MASTER GARDENER GRADUATES of Fall 2010!** Please welcome 17 fellow gardeners who just completed level 1 training. **We hope to see new members at our next monthly Master Gardener meetings!**
Outdoor Plants and Ornamentals
- Continue watering evergreens until the ground freezes. Soils must not be dry when winter arrives.
- Now is time to plant trees and shrubs.
- Remove spent flowers and foliage of perennials after they are damaged by frost.
- Mums can be cut back to within several inches of the ground once flowering ends. After the ground freezes, apply a 2 to 3 inch layer of loose mulch such as pine needles, straw, or leaves.
- Roses should be cut back to 24 inches after the frost has damaged the foliage and again down to 12 inches next spring.
- Mulch flower and bulb beds after the ground freezes, to prevent injury to plants from frost heaving.

Vegetable Gardening
- Any unused, finish compost is best tilled under to improve garden soils.
- To prevent insects or diseases from over-wintering in the garden, remove and compost all plant debris.
- Fall tilling the vegetable garden exposes many insect pests to winter cold, reducing their numbers in next year's garden.
- Overcrowded or unproductive rhubarb can be divided now.
- Dead leaf stalks of perennial vegetables, such as asparagus and rhubarb, should be cut to the ground after their tops are killed by frost.

Fruits and Nuts
- After the ground freezes, mulch small fruit plants, such as strawberries. One inch of straw or leaves is ideal for strawberries.
- Remove all mummified fruit from fruit trees and rake up and destroy those on the ground. Also, rake and dispose of dropped apple and cherry leaves. Good sanitation practices reduce reinfestation of insects and diseases the following year.
- Keep mulches pulled back several inches from the base of fruit trees to prevent bark injury from hungry mice and other rodents.

Turfgrass
- A November application of fertilizer is very beneficial to a lawn of cool-season grasses. It promotes root development without excessive top growth.
- To prevent injury to turf grasses, keep leaves raked up off the lawn.
- Continue mowing lawn grasses as long as they keep growing.
Plant of Merit—Black and Blue Sage
by Sarah Denkler

Salvia guaranitica ‘Black and Blue’, also known as Anise-scented sage, is a new addition for 2011. This plant is an annual in our area (perennial in zone 8 - 10). It is most unique as the flower petals are blue with almost black sepals. Plants bloom summer to frost. As an annual it will reach 3 feet in height and spread. It prefers full sun. Deadhead spent flowers or cut back growth to encourage additional flowers. The leaves are also fragrant. It has no serious insects or disease problems. Propagation is best done through cuttings.

The Plant of Merit program is a cooperative effort between the Missouri Botanical Garden, Powell Gardens, University of Missouri Extension, Missouri Landscape and Nursery Association, Illinois Green Industry Association and Mizzou Botanic Garden. The purpose is to select plants of outstanding quality and dependable performance for Missouri, central and southern Illinois and the Kansas City Area.

Criteria for selection include plants that are easy to grow and maintain, not invasive, resistant or tolerant to disease and insects, have outstanding ornamental value and are reasonably available.

The complete Plant of Merit list is found at: www.plantsofmerit.org or to see the new 2011 entries go to: http://extension.missouri.edu/butler/Master%20Gardener/2011%20Plant%20if%20Merit.pdf

Repurpose, Reuse, Recycle - Pass It On
By Barb Gray

Use small cans for starting new plants.

Use larger cans to make amazingly lovely planters.

Remove paper from outside, place 2-4 small holes in the bottom of the can and paint with a desired color in a weather proof paint. Nail containers to wood posts or put picture hang- ers on the back to hang on a wall.

Fill with soil and desired plants.
I know it is a huge surprise to some of you that I am writing about pumpkins again (wink!) Halloween is over and what do you do with the pumpkins that you didn’t carve? Just throw them away? There are actually a lot of other fun things that can be done with pumpkins for the Thanksgiving holiday.

Most pumpkins and gourds will keep for months if they are protected from frost, either inside or in a sheltered area. They make great harvest displays for Thanksgiving. I also have to admit that I had a large blue pumpkin that stayed solid in my house for a full year. It turned a peachy color and finally started growing mold a few weeks ago so now it is on my porch. My outside decorations provide a lot of entertainment for my dog….he likes to rearrange them and prefers that they be in the yard and not on the porch!

- Small gourds and pumpkins can be hollowed out and used as containers for condiments and dips for holiday parties.
- Use an apple corer to cut out the top of small pumpkins for candle holders.
- Hollow out a pumpkin and use it as the container for a flower arrangement.
- Paint them with fall scenes.
- Decorate them with natural items.
- Cooking! There are lots of great pumpkin recipes available, not just pie but soup, cookies, bars, torte, cheesecake, baked seeds, etc.
- Saving the seeds from pumpkins and gourds to plant next year can be fun. You never know what you will end up with because they cross. If you buy new seed, you will always end up with what you planted but saved seed can grow all sorts of interesting new shapes, sizes, and color combinations.

**Fall Recipe: Pumpkin Soup!**

2 onions chopped
4 tablespoons butter
8 cups chicken or vegetable stock
4 pounds pumpkin or squash, roasted and cubed (optional)

6 potatoes, peeled and cubed
1 cup toasted pecans
Salt and black pepper
½ cup or more heavy cream

In a large saucepan, sauté the onions in butter until translucent, about 5 minutes. Add the stock, squash, potatoes, pecans, season with salt and pepper, and cook until the vegetables are tender, about 45 minutes. Puree in food processor until smooth, adding extra stock as needed, and season with salt and pepper. Stir in heavy cream to taste just before serving.
As the winter months approach, it is important to keep an eye out for insect outbreaks. Many insects thrive in the warm conditions of a home or greenhouse. They may come from plants either purchased or brought in from outdoors. Some insects may enter through windows or even may hitch a ride on our clothing.

Many insect outbreaks, if ignored or unnoticed, can become quite difficult to control and can devastate indoor plants. Insect infestations can reach large populations in a short time due to the lack of natural controls inside the house such as weather or predatory insects. The most common insects that infest houseplants include mealy bugs, scales, whiteflies, and spider mites.

**Mealy bugs** are soft-bodied insects and are usually covered with a white-powdery material. They feed on the plant with piercing-sucking mouthparts. Mealy bugs are usually found clustered along leaf veins, on the underside of leaves and in hidden areas at leaf or stem joints. They excrete a clear sticky substance that is referred to as honeydew. Many times this sticky substance is discovered on the leaves before the insect has been detected. One method is to control mealy bug include attempting to remove them using a cotton swab dipped in rubbing alcohol.

**Scale** insects also excrete honeydew. Scales can be found on both sides of the leaves as well as on the twigs and branches. Scales are small, soft-bodied insects that are covered and protected by an outer waxy coating. Scales have piercing-sucking mouthparts and damage the plant by sucking plant juices. Scales are many times hidden in the crevices of stems or leaf axils. Many times you will discover a scale infestation by the sticky substance on the leaves of the plant. Scales can be rubbed off the plant by hand or with a toothbrush or cotton swab soaked in alcohol. Dispose of heavily infested plant.

**Whitefly** can be one of the most difficult indoor plant insect pests to control. They fly off the plant when disturbed. Whitefly have piercing-sucking mouthparts which removes plant juices and can cause the plant leaves to be mottled and yellow. If indoor plants are infested with whitefly, you might consider disposing of the plants. A vacuum cleaner can also be used to vacuum up the adults as they fly, but you need to continue this as more adults will emerge over time.

**Spider mites** are a very common pest to plants. They reduce plant vigor by sucking plant juices, and many times leaves have a stippled appearance and have a tendency to turn yellow and drop. Spider mites are not insects, but rather belong to a class that contains ticks and spiders. They are very small and difficult to see with the naked eye. Many times spider mites produce a fine webbing that may be spotted on the plant, and plants infested with spider mites generally look unhealthy. When a leaf or branch is tapped over white paper, small specks that appear as specks may be seen to move. Some gardeners find some control with a strong jet of water several times over the period of several weeks. Severely infested plants should be disposed.

Just remember that Insect infestations can reach large populations in a short time, so look at your plants regularly. For more information, check out MU Guide G7273 Least-toxic Control Methods to Manage Indoor Plant Pests; MU Guide G7274 Aphids, Scales, and Mites on Home Garden and Landscape Plants.
### Group News - What’s Happening

#### November 2010

<table>
<thead>
<tr>
<th>Sun</th>
<th>Mon</th>
<th>Tue</th>
<th>Wed</th>
<th>Thu</th>
<th>Fri</th>
<th>Sat</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Poplar Bluff MG, 6:30 pm @ PB Ext. Center</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td></td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td></td>
<td>10</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Delta Area MG Mtg 7 pm, Medical Arts Bldg 808 E. Wakefield Ave. in Sikeston</td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>13</td>
<td></td>
<td>14</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Ste. Genevieve MG Meeting, 6:30pm at the Ste. Genevieve Co. Ext. Center</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>17</td>
<td>18</td>
<td>19</td>
<td>20</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Cape Girardeau Co. MG, 6:30 pm, Meier Horse Shoe Pines at Jackson</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>22</td>
<td>23</td>
<td>24</td>
<td>25</td>
<td>26</td>
<td>27</td>
</tr>
<tr>
<td>Perry Co. MG meeting, 6:30 pm, Perry Co. Ext. Center</td>
<td></td>
<td></td>
<td></td>
<td>Happy Thanksgiving!</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>28</td>
<td>29</td>
<td>30</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

### Upcoming Events....

#### DECEMBER

6 - Parkland Master Gardeners meet on the first Monday each month at 6:30PM at the Farmington Courthouse Annex (Third Floor)
7 - Poplar Bluff Master Gardeners meet on the first Tuesday each month at 6:30PM
9 - Delta Area Master Gardeners meet at 7:00PM on second Thursday each month at the Medical Arts Bldg, 808 E. Wakefield Ave in Sikeston
20 - Ste. Genevieve Master Gardener Meeting is held every Third Monday of each month at the Ste. Genevieve County Extension Center at 6:30PM
23 - Cape Girardeau County Master Gardener Meeting is held every Third Thursday of each month at the Cape County Extension Center at 7PM
27 - Perry County Master Gardener Meeting is held every Fourth Monday of each month at the Perry County Extension Center at 6:30PM

#### JANUARY

3 - Parkland Master Gardeners meet on the first Monday each month at 6:30PM at the Farmington Courthouse Annex (Third Floor)
4 - Poplar Bluff Master Gardeners meet on the first Tuesday each month at 6:30PM
13 - Delta Area Master Gardeners meet at 7:00PM on second Thursday each month
17 - Ste. Genevieve Master Gardener Meeting is held every Third Monday of each month at the Ste. Genevieve County Extension Center at 6:30PM
20 - Cape Girardeau County Master Gardener Meeting is held every Third Thursday of each month at the Cape County Extension Center at 7PM
24 - Perry County Master Gardener Meeting is held every Fourth Monday of each month at the Perry County Extension Center at 6:30PM
The Monthly 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.

Editors:

Katie Kammler, Plant Science Specialist
255 Market St., Ste. Genevieve, MO 63670
573-883-3548

Sarah Denkler, Horticulture Specialist
222 North Broadway Street, Poplar Bluff, MO 63901
573-686-8064

Donna Aufdenberg, Horticulture Specialist
304 High Street, PO Box 19, Marble Hill, MO 63764
573-238-2420

Editor's Corner

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 sharing experiences and writing 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 month's news.

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

Disclaimer: No special endorsement of mentioned products is intended, nor is criticism implied of similar products not mentioned.

November 2010 Garden Spade

Time To Turn In Your Volunteer Hours For 2010!!

The Master Gardener Hour Reporting form can be found at http://mg.missouri.edu/mgforms.htm