



THE GARDEN SPADE



A monthly Gardening Publication of the University of Missouri Extension -- Southeast and East Central Regions

Maryland Extension's Salad Table

By Donna Aufdenberg, MU Horticulture Specialist

A couple of years ago, I ran across plans for building a salad table. I found the idea very intriguing and promising of a crop anytime of year.

University of Maryland Extension has plans for salad tables and salad boxes.

According to Maryland Extension's website, the planting system "is essentially a shallow wooden frame with a large surface area and a mesh bottom that allows water to drain.

You can attach legs of any length you desire or set it on saw horses or other supports. It is portable, versatile, easy and inexpensive to build, and terrific for gardeners of all ages, sizes, and abilities. The Salad Table™ can be moved to capture sunlight in spring and fall and avoid the sun and high heat of summer. Best of all, you can garden comfortably at waist level and avoid problems with rabbits and groundhogs."

This system works best with any types of greens - lettuce, spinach, and such.



Salad table pictures courtesy of University of Maryland Extension

Most of these crops have a 6-8 week life cycle, so several crops could be grown during the year.

A gardener could thin lettuce seedlings so that larger heads could be grown and then heads could be harvested or the seedling could be left thicker so they could be cut a couple times during the growing cycle, allowing the regrowth to occur.

You might even be able to grow radishes, fingerling carrots and other short rooted vegetables. Herbs could also be another good choice.

According to the plans on the website, the table is only 3 1/2

inches deep. Possibly, if you make it deeper, you might be able to grow even more vegetables in this system.

For more information about how to construct salad tables, take a look at their website. I am sure you will be as intrigued as I am!

<http://extension.umd.edu/growit/food-gardening-101/salad-tables%E2%84%A2>

March 2014

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Inside Scoop: Pyrethrins

By Donna Aufdenberg, MU Horticulture Specialist

Pyrethrins are pesticides that are derived from the dried flower head of the Chrysanthemum flower (specifically *Chrysanthemum cinerariaefolium*).

Commonly, we also see the term “pyrethrum” along side pyrethrins and this is the name for the flower dust itself after it is ground.

This organic compound by itself is toxic to many insects and has an extremely fast “knockdown” causing paralysis in insects. Despite the rapid toxic action, many insects are able to metabolize the pyrethrins quickly, therefore some insects can recover rather than die from exposure. To prevent this, most products are combined with



a PBO (piperonyl butoxide) which significantly increases its effectiveness. PBO is a synthetic chemical and is not considered organic. Pyrethrins are often also found combined with other botanicals, oils and sulfur for general garden use. Pyrethrins can be used on caterpillars, aphids, whiteflies and soft bodied insects. They can also be used on stink bugs.

Because pyrethrin has low mammalian toxicity, it can be applied to food crops close to harvest. However, caution should be practiced when using this or any other chemical. Pyrethrins are also toxic to beneficial insects and aquatic species.

Corn Earworm

by Katie Kammler, MU Horticulture Specialist

Corn earworm (CEW) is the worm of many names, depending on what plant it is attacking. It is also known as the tomato fruitworm and cotton bollworm. Just as it has many names, it has many colors and is a pest of corn, tomato, cotton, beans, alfalfa, and tobacco. In colder climates, it will not survive the winter so early crops can avoid the pest before southern winds bring it in. After a mild winter, CEW will attack early sweet corn. Mid-season maturing corn may have less damage as the CEW is between generations but monitoring is important as each year is different.

CEW larvae usually enter corn ears only through the tip, not through the side of shank as do European corn borers and fall armyworms. CEW moth is about 1 ½ inches long and is buff colored with irregular spots on the wings. The yellow eggs are about half the size of a pin head and are laid individually in fresh corn silk. They hatch in 2 to 5 days, depending on

temperature. After hatching, they follow the silks into the tip of the developing corn ear. Once they have entered the ear, there are no effective controls because they are protected by the husk.

Chemical control of CEW requires a very good protective coverage of the ear zone so when the eggs hatch, they will come in contact with a lethal dose of insecticide. Time of the sprays are important also. Pheromone traps are used to monitor for the moth threshold and monitoring the corn for green silks. Moth activity is usually at its highest levels in August and September. Another control method is to grow Bt sweet corn varieties. Bt varieties have a gene inserted into them that causes the plant to produce *Bacillus thuringiensis*. This provides considerable control of CEW but isn't a substitute for insecticides. The last option is to plant plenty of sweet corn and just cut out the earworm damage and use the worms for fish bait!



Earworm larvae come in many different colors (Credit: J. Obermeyer). Corn earworm adult (Credit: J. Obermeyer)

March Gardening Calendar

By Donna Aufdenberg, MU Horticulture Specialist

Outdoor Plants and Ornamentals

- Clean up beds by removing all weeds and dead foliage at this time.
- Tree, shrubs and perennials may be planted as soon as they become available at local nurseries.
- Fertilize woody plants before new growth begins, but wait until soil temperatures have reached 40 degrees.
- Apply superior oil spray to control scale insects & mites on landscape plants.
- Divide and transplant perennials, such as ajuga, shasta daisy, daylily and liriop. Rework beds before planting, adding organic matter and fertilizer.



Vegetable Gardening

- Cultivate weeds and remove the old, dead stalks of last years growth from the asparagus bed before the new spears emerge.
- Delay planting if garden soil is wet. When a ball of soil crumbles easily after being squeezed together in hand, it is dry enough to be safely worked.
- Plant peas, lettuce, radishes, kohlrabi, mustard greens, collards, turnips, Irish potatoes, spinach and onions outdoors.
- By the end of the month, plant beets, carrots, parsley and parsnip seeds outdoors. Set out broccoli, cabbage, brussels sprouts, chinese cabbage and cauliflower transplants into the garden.
- Start tomatoes indoors now for transplanting around May 1st.

Fruits and Nuts

- Gradually remove mulch from Strawberries as the weather begins to warm.
- Continue pruning grapes. Bleeding causes no injury to vines. Tie vines to the trellis before the buds swell to prevent bud injury and crop loss.
- Continue pruning apple trees. Burn or destroy all pruning to minimize insect or disease occurrence.
- Apply dormant oils by the end of the month. Choose a dry day when freezing temperatures are not expected.

Turfgrass

- Mow lawns low to remove old growth before new growth begins.
- Apply controls for wild garlic. It will take several years of annual applications for complete control.
- Apply crabgrass preventer now before it starts to warm and before seeds germinate.
- Thin spots and bare patches in the lawn can be overseeded now.

Do Not Disturb Perennials

Here are some perennials that do not tolerate division and/or transplanting.

Peonies

Hellebores

Butterfly Weed

Foxglove

Gypsophila

Poppy

Blue Indigo

Sea Holly

Globe Thistle

Sweet Pea

Trillium

Russian Sage

Balloon Flower

Bugbane

Anemone



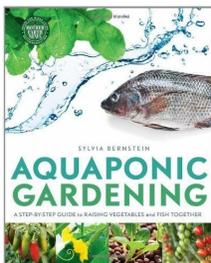
Book Review

By Kimberly Etherton, Master Gardener Intern

Book: Aquaponic Gardening: A Step by Step Guide to Raising Vegetables and Fish Together by Sylvia Bernstein

When I told my husband that I wanted to take a gardening class, he had no idea what that would mean. I had no idea what that would mean. It meant that, what I thought was my garden outside, was actually only a teeny tiny little planter. It meant that I would be finding ways to add to my gardening square-footage any way that I could. It meant that, since we live in town and I don't wish to offend my neighbors, I would need to think outside the box. I started researching new ways of finding space, which led me to a completely new concept: Aquaponics. This is NOT hydroponics. It is a system where you utilize the waste from your fish tank to add nutrients to your grow bed and your grow bed filters the water that you send back to your fish tank. The idea itself seems to completely rebel against gardening in that it involves absolutely no soil in the system at all but it also takes gardening to a whole new level.

You can have a relatively simple system with one grow bed and one fish tank or you can expand into an entire network of grow beds and tanks. The concept is relatively simple but there is some work necessary to take it all to fruition. Before you even decide on the type of fish and plants you would like



to raise, there are many decisions to be made. You need to plan out your aquaponic garden similar to how you would any other garden with one added element of the fish. You need to decide on the best placement for it based on sun, temperature, weight of system (water is very heavy), space, and variety of fish/plants. You will then need to choose your containers, pipes, pumps, media, timers, monitoring equipment, worms, fish, and plants. Seems overwhelming? That is where this wonderful author comes to our rescue. She takes you step by step through all the decisions you would have to make and how to make it all work. From the plumbing needed to cycle the water to what type of fish you'd like to raise, it's all included in her book. The lovely thing is that she doesn't just get you excited about it, nor does she show you how to set it up and say goodbye. She does all that and then explains how to properly maintain the whole system so that you can enjoy it as your new gardening addiction.

Overall this Sylvia Bernstein brought me from overwhelmed to excited about my future with aquaponics. If you have any interest in the topic, I would highly recommend her book to you. If you know my husband, I would request that you don't mention this to him as it did not, unfortunately, lead me to a way to grow more in a smaller space. It might have actually led me to taking over his side of the garage instead. Of course, if he'd only build me a greenhouse.....

Garden Quote...



When weeding, the best way to make sure you are removing a weed and not a valuable plant is to pull on it.

If it comes out of the ground easily, it is a valuable plant.

~Author Unknown

Getting the Timing Right for Seeds

by Sarah Denkler, Horticulture Specialist

Sowing seeds for planting outdoors is not a hard task but does require some planning. You must first figure out on what day you will plant outdoors and what date is warm enough for the plant.

For cool season plants this will be sometime in March in Southeast Missouri.

For summer vegetables that require warm weather all danger of frost must pass. What is your last average frost date? In southeast Missouri it is either April 15 or, in the bootheel, April 10. Frost can still occur after these dates so you may wish to use a later date to be safe.

Once you have a planting date you will calculate how many days are needed for germination and

growth so the plant is sized for transplanting. This total is subtracted from the outdoor planting date to reveal the day seeds should be started. This date will be different depending on what vegetable you are using. The following are usually planted directly into soil. Peas can be directly planted into soil 4 - 8 weeks before the last frost, beets 2 weeks before, kohlrabi or mustard 4 weeks before. Corn and okra are planted at least 2 weeks after the last frost.

The chart below discusses the number of days it takes seed to germinate, the number of weeks from the day seed is planted until the plant is ready to transplant and how many weeks before or after frost a plant can be placed into soil. Dates will be based on the last average frost for your area.

Seed	Days for Germination	Weeks from Sowing	Time until ready to Transplant into Soil
Basil	5 to 10	6	1 week after frost
Broccoli	5 to 10	4-6	2 weeks before frost
Cabbage	5 to 10	4-6	4 weeks before frost
Cantaloupe	5 to 10	3-4	2 weeks after frost
Cauliflower	5 to 10	4-6	2 weeks before frost
Collards	5 to 10	4-6	4 weeks before frost
Cucumber	5 to 10	3-4	1 to 2 weeks after frost
Eggplant	5 to 10	8-10	2 to 3 weeks after frost
Kale	5 to 10	4-6	4 weeks before frost
Lettuce	5 to 10	4-5	3 to 4 weeks before frost
Onions	5 to 10	6-8	4 weeks before frost
Parsley	5 to 10	9-10	2 to 3 weeks before frost
Peppers	5 to 10	6-14	2 weeks after frost
Pumpkins	5 to 10	3-4	2 weeks after frost
Spinach	5 to 10	4-6	3 to 6 weeks before frost
Squash	5 to 10	3-4	2 weeks after frost
Swiss chard	5 to 10	4-6	2 weeks before frost
Tomatoes	5 to 10	6-8	1 to 2 weeks after frost
Watermelon	5 to 10	3-4	At least 2 weeks after frost

Growing Giant Sunflowers

Kathleen McClellan, Master Gardener Intern

Gardens ought to be fun, with a little bit of whimsy and entertainment. Every garden benefits from an eccentric or amusing feature that sets it apart from other gardens. This can be accomplished by planting a unique and dramatic plant such as giant sunflower.

A 15' sunflower with a massive head will catch the attention of passer-byes to your garden. With an entire wall of them, who wouldn't stop and be amazed? One such flower caught my attention when I dropped off my daughters at college a couple of summers ago, as it grew in a garden across from their apartment. Seeing that giant, I decided to learn how to grow a giant sunflower.

As with many of my inquiries, Google brought answers. I discovered sunflower expert and breeder, Dr. Tom Heaton, who had 30 years experience. His claim to the largest sunflower he had ever grown was an incredible size of 17' with a head diameter of 24".

He openly shared his advice as how to grow plants of this caliber. First, one must start by choosing the right VARIETY. He suggested 'Sunzilla', which he himself bred for stalk height and head size. Second, the SITE and SOIL preparation are critical. Soil should be well drained, and the site must provide at least 6 – 8 hours of full sun, or more, if you are trying to grow them to maximum size. Because sunflowers are heavy feeders, a granulated slow-release fertilizer should be mixed into the soil to a circumference of 2-3' and a depth of 2'. Depending on the soil, you may wish to add in an organic amendment that contains trace minerals. Greensand or dried seaweed is suggested.

Third, SOW sunflowers: (1) early in the season just after the danger of frost to provide the longest

growing season possible, (2) directly in the soil. Sunflowers produce large taproots and starting seedlings in pots may hinder its growth. (3) Sunflowers should be started in clumps. Seeds should be planted in 5 to 6 seeds around 6 to 8" apart and to a depth of 1". Seeds should be well protected from predators such as snails and birds with slug bait and netting. As the seeds mature, they should be thinned when they reach the height of 3" to the most vigorous 3 to 4 seedlings. Thin down 2 vigorous plants when they reach 1', and thin to the best plant when they are 2' tall. The ideal spacing for giant sunflowers is 20" apart, and clump planting will help achieve this spacing.



Giant Sunflower, Picture courtesy of Missouri Botanical Garden

The sunflowers must be watered and fertilized regularly. Each sunflower must have 2 gallons of properly diluted fertilizer per week. Care must be taken to NOT pour any fertilizer on the stem. A trench or moat can be dug for such applications. Although the stems are large and sturdy, they

may be damaged by contact with the liquid fertilizer.

Be sure to keep watch of the weather reports as strong winds can bring a top-heavy plant down. Use caution if any damaged leaves must be removed from the plant: use sharp scissors or just let the leave dry on the plant. The stem may be significantly damaged if care is not taken in such removal! The seeds will be ripe when most of the petals fall off naturally and birds begin to take an interest in the seeds. Excessive moisture at harvest time can cause the seeds to mildew, as I have learned. Giant sunflowers are possible to grow by following these simple suggestions.

Sources: Rene's Garden (website), "Garden Projects" by David Squire.



Group News - What's Happening

March 2014

Sun	Mon	Tue	Wed	Thu	Fri	Sat
2	3 Parkland MG, 6:30pm @ Memorial United Methodist Church, Farmington, MO	4	5	6	7	8 Cape County MG Spring Seminar at Nature Center in Cape Girardeau, MO
9	10	11	12	13 Poplar Bluff MG @ at 6:00pm; PB Ext Center Ste. Genevieve MG, 6:30pm @ Ste. Gen. Co. Ext. Center	14	15
16	17	18	19	20 Cape Girardeau MG 7:00pm @ Cape Co. Ext. Center	21	22
23	24 Perry Co. MG 6:30 pm, Perry Co. Ext. Center	25	26	27 Adv. Training - BEES; from 5-8pm First United Methodist Church Parlor (5th St), in Poplar Bluff, MO. Fee \$10	28	29
30	31	<i>Contact your local Extension Center if you have questions about any event on the calendar.</i>				

April

- 1 - Poplar Bluff MG 1st Tuesday at 6:00pm at PB Ext Center
- 7 - Parkland MGs 1st Monday at 6:30pm, Memorial United Methodist, Fmgtn, MO
- 10 - Ste. Genevieve MGs 2nd Thursday, at 6:30pm, Ste. Gen. County Ext. Center
- 10-13 - Dogwood Azalea Festival in Charleston, MO
- 17 - Cape Girardeau County MGs 3rd Thursday at 7:00pm, Cape County Ext. Center
- 28 - Perry County MGs 4th Monday at 6:30pm, Perry County Ext. Center

Upcoming Events

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,
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