

MAY 2009

THE SPROUT

EDIBLE SAN MARCOS



SCAPE TIME

RARE TREAT RIGHT HERE

FROM FARM TO TABLE

When hardneck garlic flowers, it produces a delicacy called garlic scapes. They are very delicious, and only available for 2 to 3 weeks.

SCAPES AND FLOWERS EVERYWHERE

Now is the season for the coveted garlic scapes that only come around once a year for two to three weeks, so don't miss it! Scapes are the tender flower shoots that hardneck garlic produce. You want to harvest them just after they break the soil and start to curl. Of course if you missed it and they are tall or even started flowering don't worry. You are still about to enjoy a wonderful delicacy. Make sure to harvest the scapes or flowers in the **heat** of the day. Yes, you heard that right. I know it is unusual you never hear me tell you to harvest produce in the heat. Let me explain why. If you harvest the scapes in the morning the plant will weep for hours and that is not good. You want

the plant to sear over and heal quickly, this is the reason for cutting in the heat of the day.



If you do not want to give it a whirl and try a new thing, you still need to cut off the scapes or flowers. The energy needed for bulb formation will go into the flower and you do not want that. Give your garlic and onion heads a chance to form and cut the flower stalk at the base. Scape shoots can be used like green onion. Cont. Scapes page 5



FULL MOON
MAY 8 2009

Monthly Events

Monday



Monthly Meeting

Monday, June 8,
2009 from 7- 8:30 PM at San Marcos Public Library, Hopkins, San Marcos, TX. So bring your pen and paper and get ready to learn.

Saturday June 13

Potluck At Rio Vista at 4 PM

This is time to let your hair down and have fun. We have so many members this is a great way to get to know each other. Bring a covered dish and your own beverages. We will have grills there.

Remember to keep hot foods hot and cold foods cold. It should be a great day to enjoy the river. Bring friends if you want and if you play an instrument you can bring it too!

We are trying to line up music for the afternoon. It should be a great day. The address of Rio Vista Park is 555 Cheatham Street, San Marcos, TX 78666

Tuesdays & Thursdays

Saint Vincent De Paul Garden

Volunteer at the saint vincent De paul Garden and help feed the hungry in San Marcos. Right now we are weeding digging beds and planting. The garden is in the Community Garden behind St. Johns Church plot 8. call me Suzi at 512-667-4379 or email me at ediblesanmarcos@gmail.com. There will be a post on the web EdibleSanMarcos.wordpress.com

TIME TO PLANT



Plant These in May from Seeds or Transplants

Amaranth
Beans, Lima
Beans, Snap

Beets
Cantaloupe
Chard
Greens- Warm Season
New Zealand Spinach
Okra
Peas Black Eyed
Peas Crowder
Pepper, Transplants
Sweet Potato Slips
Pumpkin
Squash, Winter
Watermelon



Make Sure to feed Your Plants

Give your plants a scoop of finished compost every 3 or 4 weeks. They have been working very hard and they need nutrients to make your produce! You can't go all season and not give them food. If you do not have a compost pile you can buy bagged compost. You should supplement with other organic fertilizers. Do not overfeed, once a month is more than enough. Fertilizers even though organic are more harsh than compost.

A Sugar Rush for Potatoes

The way to make your potato crop healthy and strong is a good dose of molasses. The sugar in molasses feeds the beneficial microbes in the soil. By increasing the population of microbes you also decrease the chance of bad fungus in the soil that causes scab. You can get molasses from the grocery store or from Garden-Ville or Amkon depending on how many potatoes you have planted. Add one cup to a 5 gallon bucket of water and put it in a hall where you pass by frequently. Leave it one night and a day and stir when you walk by. Then just pour it on.



"The Beet" Goes On

Audra Miller gets her congratulations tarragon plant from Suzi Fields at the Earth Day Booth on Texas State University. Audra came up with the name *The Beet* which will be used for our

GREEN IDEAS TO SAVE MONEY

Set your thermostat to 78 in the summer and 68 in the winter.

- For each degree cooler or warmer you move your thermostat, it will increase your energy use by 6 to 8 %.

- **Setting your thermostat at 72 in the summer could increase your energy consumption by 40%.** Can you say "hello huge electric bill." It is just starting to get hot, you will have get used to having your house a little warmer than usual. Before you know it you will not be uncomfortable at all. Use fans to move the air around, it makes you feel cooler.

- The best way to save energy is to use less heating and air conditioning.



NEW MOON MAY 24

What's in Season

Some of you have a garden and some of you don't. The best thing that we can do the make less of an impact on the environment is to eat locally. That means to eat in season. This also assures you that the produce you are getting is fresh, because it was not in transport and a cooler for the last three weeks

May's Fresh Vegetables

Arugula
Beans, Snap
Beans, Lima
Beets
Broccoli
Broccoli Raab
Brussel Sprouts
Cabbage
Cauliflower
Carrots
Chard
Collards
Edamame
Green garlic
Kale
Leeks
Mustard Greens
Onions
Peppers, Hot
Peppers, Sweet
Potatoes
Turnips
Shallots
Squash, Summer

May's Fresh Herbs

Basil
Cilantro
Dill
Fennel
Marjoram
Mint
Oregano
Parsley
Sage
Savory
Thyme

Search Seek and Destroy is The Motto of the Beneficial Nematodes

They may be microscopic but they are effective little critters. They destroy over 230 species of garden and turf related pests, within 24 to 48 hours, including the peachtree borer, squash bug, squash vine borer, corn root worms (cucumber beetle), cutworms, sod web worms, strawberry root weevil, June beetle grub, Japanese beetle grub, roaches, soldier ants, soldier termites, leaf miner, beet army worm among just a few.

You are probably wanting to know all about these little supermen now. Ok here goes.. they are actually a colorless non segmented roundworm. The stage in which we use them for IPM is the third juvenile stage. There are two popular families used for agricultural pests, they are *Steinernema carpocapsae*, *S. feltiae*, *S. glaseri*, and *Heterorhabditis heliothidis* and *H. bacteriophora*. He is a predator even though he is microscopic. He searches for his victim by looking for changes in temperature, detecting excretory products and carbon dioxide. Don't worry they do not bother humans, animals or other beneficial insects. They have a very picky taste palate.

There is something else very unique about these guys, they have a symbiotic relationship with a Heterorhabditid bacteria. Once they have hunted down their prey the juvenile nematodes enter the insect host through the anus, mouth, or the breathing holes (spiracles). The nematode carries the bacteria into the host pharynx and intestine. Once the bacteria has been introduced to the host death occurs within 24 to 48 hours, as the bacteria multiplies rapidly and causes blood poisoning to the pest. While bacteria breaks down the internal structure of the insect, the

nematodes grow and mate within the decomposing structure. It is very important to note here that the bacteria are breaking down the host insect into a nutritious form that the nematode can digest and use. This is the great thing about a symbiotic relationship. It took the nematode to get the bacteria in and the bacteria to feed the nematode. And it takes both of them to fight off our bad bugs!

The Steinerematids have both male and female sexed insects, they mate within the decomposing body. The Heterorhabditids produce young that have the sexual organs of both sexes. Once the nematodes reach the third juvenile stage they exit the insect body and search for another one.



Now that you know the family tree of these microscopic little friends and their companions, let me tell you how to use them.

First of all you want to make sure that you are getting a live supply. Make sure that it was just received within 3 or 4 days. You want a fresh batch. Take a cooler with an ice pack, just like you would be bringing home a jug of milk for a baby. They are very sensitive to heat, a hot ride home in the car can do them in.

It is important to try and put them on in the evening since they are light sensitive. Right now your gardens are very full so if you put them on at dawn it would be fine as well.

You must water your garden very well before you apply the nematodes. This helps them find their host and it keeps them from drying out and getting dissected.

So we have all of the preparatory stuff out of the way. Now you can apply them by either spraying them on with a sprayer or using a watering can. They are completely compatible with all existing fittings in all sprayers, and are not affected by organic insecticides.

They come in a sponge, wear rubber gloves and squeeze the sponge into a gallon of water. Rinse it and the baggie out well as there are nematodes all over it even though you can't see them. You then take that gallon and add water to it to cover the targeted area. Make sure that you swirl the water around continuously while spraying or watering as the nematodes are living creatures and need oxygen. The nematodes will only survive for 1-2 hours in the water so be quick.

Immediately after spreading the nematodes water very well. The nematodes need the water to travel into the ground to get their target hosts. Don't forget some are also stuck sitting on top of the ground and they don't like heat, dryness or sun. So hurry and get them watered in.

The evidence of their battles look different than just a dead bug. The pests will be yellow and their tummies will be blown out. of course there is a lot going on under the surface that you do not see as they target the larva stage of most of the insects. You will notice a drastic reduction in your pest population.

Nematodes are great for getting rid of grubs in your lawns as well.

Garden-Ville and Amkon have nematodes right now, so stop in and get some today!

April Workshop Brought Great Composting Lessons On How to Make Black Gold

We were lucky to have had Betsy Robertson as our guest speaker for our composting workshop.

Betsy has been composting over 35 years now! Here is someone to take some advice from!



Build A Compost Pile In Layers

First start by getting a 50 foot roll of wire and cutting it in 3 sections. then make a “door” at the end so that you are not having to shovel the compost so high over the wire when you are turning it. Drill holes in a pvc pipe and insert in the center of the pile for air.

The first layer is branches , broccoli plants, okra plants, anything thick that will take a long time to break down. you need 7 to 10 inches of this material. This will allow the pile to breathe, it needs oxygen or it will become anaerobic. We want life here.

The next layer is the carbon layer, think of it as the brown and dry layer. It will consist of leaves, peanut shells, straw, sawdust, corn stalks, bark, cardboard, newspapers, stems and twigs shredded, and vegetable stalks.

Then we go for the nitrogen layer. This is the green layer and in it you will find alfalfa, algae, clover, coffee grounds, kitchen scraps, grass clippings, hay, manure, seaweed, vegetable scraps, and weeds (do not compost seed heads).

Then we put a layer of soil or finished compost 1 to 2 inches thick on. This introduces beneficial microorganisms into the pile.

It is important to water between each layer. It should feel like a wrung out sponge.

Things not to put in the pile are oil, fat, dairy, meat, animal feces (spreads parasites), colored paper, coal ashes, wood ashes and diseased plants.

Now all you have to do is turn, turn, turn. The pile should start heating up in a few days and when the heat drops off in about three weeks you can turn it. You can turn it weekly if you wish. Make sure once it has started decomposing not to add more material. You want to let that pile finish working into a completed product. Just start a new pile next to the old one, that way any unfinished product and a little of the good stuff for ignition can go into the new pile. Always have two compost piles going, an active one and one that is finishing.

Composting

U.S. Regulation Regarding Manure Compost. The product of a managed process through which microorganisms break down plant and animal materials into more available forms suitable for application to the soil. Compost must be produced through a process that combines plant and animal materials with an initial Carbon:Nitrogen ratio of between 25:1 and 40:1. Producers using an in-vessel or static aerated pile system must maintain the composting materials at a temperature between 131 deg. F and 170 deg. F for 3 days. Producers using a windrow system must maintain the composting materials at a temperature between 131 deg. F and 170 deg. F for 15 days, during which time, the materials must be turned a minimum of five times.



Suzi's Easy Garlic Scape and Parsley Risotto

1 Tbl Olive Oil
8 Garlic Scapes
1 Tbl Butter
1 Cup Carnaroli Rice
1 Qt Chicken Broth
2 Tbl Fresh Parsley Chopped
1/2 Cup Parmesan Cheese
Fresh Ground Pepper
Dash Salt

1. Chop stalks of garlic scapes very fine and saute until tender in olive oil. Cut the tip of the scape off and discard. Chop the flower portion of the scape and add at the very end of the sauteing as they can burn, set aside.
2. Heat heavy saucepan on medium heat for 2 minutes then add butter. Add rice and stir fry until it is fragrant, about 2 minutes. Add the chicken stock 1 cup at a time, stirring constantly until the rice has absorbed almost all of the liquid. Add the next cup of liquid and repeat the process. When adding the 3rd cup add the parsley and the garlic scape mixture to the rice. Add a little fresh ground pepper in now. You may only need 3-1/2 cups of liquid depending on the humidity of the day and how fast you have cooked the rice. You want the rice to be creamy but not soupy. It should be tender to the bite. and take about 20 - 22 minutes to cook. Remove from heat and stir in parmesan cheese. You may add a dash of salt if you desire. Garnish with parsley.

STAGE 1 DROUGHT RESTRICTIONS

Save Our Water Or It Will Go Dry

The drought is a very serious issue. We are used to it being dry, but this is no laughing matter. Without water we cannot survive our bodies are made up mostly of water. We need it to grow our vegetables and if you eat meat the animals need it to survive. I have noticed large stands of cactus dried up because of the drought. Fish are dying because the river is low. Don't be fooled by the little rain we have had. It still has not replenished the aquifer. The San Marcos Springs are Running at 94 cfs (cubic feet per second) for April while the historical average is 176 cfs.

What Are The Restrictions?

1. No wasting water
2. Irrigating with sprinklers limited to one day a week, on designated weekday between hours of midnight-10 AM and 8 PM to midnight
 - Monday - addresses ending in 0 or 1
 - Tuesday - addresses ending in 2 or 3
 - Wednesday - addresses ending in 4 or 5
 - Thursday - addresses ending in 6 or 7
 - Friday - addresses ending in 8 or 9
3. Hand watering and irrigating with a soaker hose may be done at any time. Handheld watering must be done with a hand-held hose equipped with a positive shutoff device or a bucket.
4. At home car washing may be done once a week. And must be done using a hand held bucket or a hand held hose with a positive shutoff device.
5. Swimming pools located must have at least 25% covered when not in use.
6. Filling of new decorative water features is prohibited.
7. Washing of impervious surfaces is prohibited unless required for health and safety use.
8. Foundation watering is allowed at any day and at any time.
9. Restaurants are allowed to serve water only upon request.
10. All other non-essential water uses must be limited.
11. For more information contact Jan Klein Conservation Coordinator at 512.393.8310

SAVING THE HARVEST

Methods

Scapes Cont. from PG 1

Recipes and Preserving

There are a few methods of preserving these little potent gems. Scapes can be stored in a plastic bag for up to 3 months in the refrigerator. You can also store them by putting them in a jar and alternating them with salt. Let it cure just as you would sauerkraut. Or you can pickle them using the dilly bean recipe, making sure to blanch them first. Freezing works but you loose the asparagus like texture. Stir fry scapes into just about any recipe any you have a great treat. Scape pesto is the top suggested use by far. If your garlic scapes have gone too far and now have flowered don't fear. The flowers make a wonderful addition to salads. Both onion and garlic flowers are delicious raw and cooked just snip apart and enjoy! And Stir fry the green part in anything that I want an onion or garlic flavor with an asparagus consistency. Here is a good link for garlic scape recipes

<http://www.recipecircus.com/cgi-bin/recipes/category.cgi?category=GarlicScapes&login=garliclady>

Scape or Onion Bug Juice

Garlic Stalks For Bug Repellant

Not so hip on eating garlic scapes and onion flowers? You can still put them to good use in the garden. Make an aphid repellent out of them. Take your garlic and onion flower stalks and heads and toss them in the blender or food processor with water. then add 2 tsp of cayenne pepper. Put it in a stainless steel or glass container to ferment for 24 hours. It will turn from green to a brownish color. Strain it first through a metal sieve to remove the heavy solids, which go in the compost. Then strain it through a cheesecloth. Dilute with water and use a hand sprayer. You can add 1/2 tsp of dish soap for heavy aphid infestations.

Gary Job Corp kids volunteer with Katie Shaw from Hays County Food Bank at the Sustainable Kids Garden project. We had a fun day digging beds!



TWO SUCCESSFUL EARTH DAY EVENTS

Earth Day at Aquarena Springs - Literature Booth



Earth Day at Aquarena Springs - Plant Giveaway Booth



Earth Day with National Association of Environmental Professionals at Texas State University



Earth Day at Texas State University



What Did Edible San Marcos Do for Earth Day?

We set up an Educational Booth on two different days. We handed out companion planting guide, planting chart, seed varieties list, principles of planting book and principles of pruning book. We gave away hundreds of plants and seeds. We gave away water bottles. We gave away bucket gardens. There was so much going on at the booth we looked like little bees! There were many interesting conversations going on and the days just flew by. We now have even more members.

Edible San Marcos now has over 400 members!

“Thank you so much everyone who helped make the Earth Day Booths such a great success. I could not have done it with out you. You are helping others right here, right now!” - Suzi Fields

Photo Bucket Garden Winner



STRENGTHENING COMMUNITY

Classified

It is our very own classified section. Email me at ediblesanmarcos@gmail.com to put an add in here.

Gardeners Needed

Community Garden Start Up Wanted

Anyone interested in a community garden in the McCarty Road area let me know. We have a most gracious family with land who is willing to put a community garden on it. They are willing to put a fence around it and all that it takes. They just need help with the labor. How wonderful to have people that want to help our community.

Volunteers Needed

Wake The Dead Garden Project

We want to help out the community a little and make some edible landscapes. Wake the Dead Coffee Shop would love to have a little vegetable garden but just doesn't have the time to care for it. We have a few members interested in taking care of it that live out that way, if there are more interested please email me and we can install a veggie garden for them that they can use to make their fresh sandwiches with and beautify the landscape the Edible San Marcos Way!

Volunteers Needed

St. Vincent De Paul Garden

We now have the plot for the St. Vincent De Paul to feed the hungry in San Marcos. I will be able to lead volunteers on Tuesday, Thursday, most evenings and weekends. I You can always call me or email me if you have a spare half hour or more and want to go and do some work. We are starting from scratch the beds need turned. You can reach me Suzi at 512.667.4379 or ediblesanmarcos@gmail.com

Squash Vine Borer and The Squash Bug Are Two Opponents to Get Serious About

Summer is here and that means that our opponents are in out in full swing. These two are some of our most formidable opponents.

It seems like they are the three amigos with the cucumber beetle set out to destroy cucurbit production. Have not fear, we will go at them with full force. If you read the article on cucumber beetles many things will seem repetitious. Much of the Integrated Pest Management System for these guys is the same.

Squash Bug Life Cycle

Squash bugs are sucking insects. They suck the juice from the plant leaves and then inject a toxin into the leaves which causes the plant to wilt, blacken and die. The squash bug has armed himself with a new disease to put in his arsenal. It is the Cucurbit Yellow Vine Disease (CYVD). Once the plants have started to yellow they are too far gone to restore. This disease is viral and shows up soon after transplanting. It is currently only in a few states right now but expected to spread further. Certain cucurbit species are more susceptible than others.

Adult squash bugs hide away under stones, rocks, leaves, boards and debris in the garden. Once the weather has warmed up they re-emerge and lay eggs in masses of group of a dozen or more. You will find the eggs near leaf axils and are in neatly ordered rows. They are an orange yellow color and are 1/16 inch in length. They turn to a bronze color just before they hatch. Eggs hatch in 10-14 days. The nymphs pass through 5 instars (stages of maturity in which they molt). The nymphs have a bright orange-red head, antennae and legs with a green abdomen at the first instar. They are very delicate and squish easy. Hand picking at this stage is very easy. As they go through the



Female Squash Vine Borer Moth

instar stages they become grayish-white with dark legs. They are 1/10 to 2/5 of an inch long. The adult squash bug is a mottled brown color or a dark brown, has a hard shell (the reason insecticides do not work on him) and smells horribly when squished.

Adults lay eggs well into the summer and in Texas we observe two generations. Therefore you will see all stages of development at once in the field. Yikes!

Squash Vine Borer Life Cycle

Squash vine borers are chewing insects. They destroy tissue in the plant stem, anything above that is cut off from nourishment and typically goes into a secondary infection and dies, whether a runner or a the stem.

Squash Vine Borers overwinter as larvae or pupae in cocoons in the soil 1 to 3 inches deep. The pupae are 5/8

inch long brown and and inside a soil covered 3/4 inch black silk cocoon. In May adult moths emerge. They lay single eggs on stems and leaf petioles in may and June. One adult can lay between 150 to 250 eggs. The eggs hatch in seven to nine days. The larvae then bore into the stems and go to town, eating away for four to six weeks. The larvae are about 1 inch long when full grown. They have a whitish wrinkled body with a brown head, three pairs of short legs and 5 pairs of fleshy prolegs on his abdomen. The larvae are At the site where the larvae enters, a sticky gob of excrement (poop) that looks like wet sawdust is called frass remains. This is your tell tale sign that he is in there. If the secondary infection takes over and kills the plant before the larvae gets to finish his life cycle he will move on to a neighboring plant and finish his life cycle there.

The Basics of Fighting the Squash Bug and the Squash Vine Borer

Then they leave their happy little home and tunnel into the soil and spin a cocoon.

In Texas the new moths emerge two to three weeks later in August for our second generation of plant destroying larvae. The adult moth from the clear-winged moth family and looks much like a wasp. The female is larger and brighter than the male. The moth has a wing spread of 1 1/2 inches and is orange with metallic green and black on it's wings and it's head. It also has black fringed legs and fringe under it's wings. It is a strong flier, it can fly 1/2 mile.

If you look closely in the picture on page 7 of the squash vine borer moth, you can see the fringe on the lower wing in the shade clearly. It is on both wings, her right wing in the sun is just glittering away and it makes it hard to see. What is amazing about this picture is that it is said that squash vine borers come back to their place of birth to lay eggs. So if you plant cucurbits in the same place, wipe out! Now I know for a fact that there were no pupae in this soil. How you may ask? It is a joke that I was digging to China this spring. I think I almost got there at one time! In the area where I had squash I dug out 18 inches of soil and moved it aside. Then I dug down another 6 inches. If there would have seen any pupae I would have seen them when I moved the soil out and when it got put back a little at a time over months it would have killed them. That is where this little beauty stopped and let me take her picture before she met her maker. It is amazing how these creatures can be so beautiful in one stage of their life, and so ugly and

detrimental in another. You have probably just swatted at the males thinking they were wasps, they fly in zig zag patterns. The best time to catch them is at dusk or in the early morning. Just look on the leaves of the plants. If you can stop a female from laying 150 to 250 eggs, could be entire field, even your neighbors will thank you!

Methods To Get The Upper Hand

Systems Based Practices -Level 1

1. Timing of Plantings - Delayed plantings will send the pest searching else where. If there are no squash to be found then they have no place to lay their offspring! Then you will have a crop! It is a good choice to also have staggered plantings that way you are not putting all of your eggs in one basket, so to speak.

2. Choice of Cultivars - Try to pick varieties that they do not like as well. Both pests have particular tastes. There are three in the market today that do not seem to be affected very little by either the squash bug or the squash vine borer and they are the white cushaw white squash, thai kang kob squash, and tatume squash. Acorn and C. moschatas are also fairly tolerant. The most favored squashes are blue hubbard, cocozelle zucchini, yellow straightneck and crookneck, black zucchini,

3. Field Sanitation Practices

A. Removal of Plant Residue, Old Boards, Overwintering Sites - As soon as the squash season is over the vines must be destroyed by either burning or high heat composting to destroy any remaining squash vine borer larvae.

Old boards must be removed from the fields as well as weeds stones leaves and anything that the squash vine borer and squash bug can overwinter under. This is of utmost importance to practice good sanitation in the fields. They love to hide under branches, leaves and anything on the ground so clean up. If there is no place for them to hide they will die off in the elements, so don't give them a fighting chance!

B. Mulches - Mulches of wood harbor the squash bug. The method of mulching to use is newspaper with straw on top. This method also encourages the beneficial spiders as a predator.

C. Tillage - After Crop Removal disturbs pupae and expose them for the bird to eat and for them to be exposed to the cold elements. They also get buried too deep to tunnel out of. Leaving fields bare is not a method consistent with organic farming, therefore cover cropping is preferred.

D. Cover Crops - Winter cover crops are necessary to keep the squash vine borer and squash bug from hiding under any stones or debris and resurfacing next spring. It also keeps you from losing your soil due to soil erosion.

E. Crop Rotation - Rotate cucurbit crop fields to a non cucurbit field. This is very important just in case you may have missed a pupae. Crop rotation is also necessary for optimal nutrient balance of plants as well. This way you are not depleting your soil, and your plants will be healthier.

Let's Get Down to Business and Get Rid of the Dreaded Squash Vine Borer

4. **No Wild Cucurbits to Serve as Hosts** - Clear away any wild cucurbits from surrounding areas that could be serving as hosts for your unwanted guests. Remember that the squash vine borers are strong fliers and can fly 1/2 mile. If you have a field on the back 40 you are not using take a stroll through it and compost those wild cucurbits.

Mechanical and Physical Practices Level 2

5. **Barriers** - Out of all of the preventative treatments this is by far the easiest and the most effective. Floating row covers in combination of newspaper and straw mulch were the most effective. You do not have to worry about weeding or moisture retention either. It is a win win situation all around. Floating row covers are sold under a number of names, Reemay, Agribon, Turfbell, and Agriforce. The key is to make sure that the row covers are fastened securely. When you purchase them make sure to buy the fasteners for them the ones for turf will also work.

- b. **Non-Synthetic Lures And Traps - Perimeter Trap Cropping** First you plant a trap crop of blue hubbard around the circumference of your entire squash patch making sure to have no breaks in it. This will work in garden of as little as 20 x 20. Then hang a synthetic lure over the hubbard squash. This is your monitoring lure. It will tell you when to spray your trap crop. When you have 5 squash vine borers in your trap then it is time to spray. Spray the hubbard squash with rotenone or pyrethrin, this



EXCISING SQUASH VINE BORER

keeps the moths from traveling inward towards your prime crop.

6. **Repellents** - Kaolin Clay is a particle film barrier that offers some protection for the organic grower. Kaolin clay is an anti-caking agent used in toothpaste and other ingredients. It was accepted onto the OMRI list in 2000. It acts as a barrier between the pest and the plant by forming a film making it difficult for the insect to get to the plant. The insects do not like to lay eggs or feed on the surface. Kaolin clay has a white color and that is not what the pests are looking for so it makes it hard to find their host plant. Then the clay sticks to them and they get so busy cleaning it off they forget why they were there in the first place! Kaolin is marketed as Surround for the garden. It comes in a powder, you just mix it

with water and spray it on. Great stuff! But it does disrupt beneficials and hurt them too, aww, not perfect yet!

7. **Developing Habitat for Predators and Parasites** - Planting windrows for beneficials is your first line of defense. Planting an area that is not disturbed lets the beneficial over winter and be ready for work in the spring; If you do not have room for a windrow, make a row and just leave it there. Borage, dill, chervil, cilantro, any herbs, carrots left to flower, among other are great choices. Here is a link with many more good herbs and flowers [Beneficial Borders](#)
8. **Companion Planting** - Planting repellent plants to discourage the pests is said to help. Plant beebalm, catnip, nasturtiums, marigolds, mint, radishes, and tansy

Physical Practices to Get Rid of Your Pests

9 2.a. Handpicking Pests

Boards - Lay down boards next to your cucurbits at night and in the morning the squash vine borer larvae will be underneath them. Handpick and destroy the larvae.

b. Moths - The moths will be on the plants in the early mornings and at dusk, remember they fly in a zig zag pattern and can lay 150 - 250 eggs. Fill a yellow bowl with water and the squash vine borer moths will be floating in the water for you in the morning.

c. Squash Bug Nymphs - The easiest time to kill these guys in their entire life cycle is when they are nymphs. you will find them feeding in the early morning hours. They run fast so be prepared for a race. They are delicate when in the early instars and squish easy.

d. Excising Squash Vine Borers - Now here is a fun job for you! I can jest like that because I just got done doing it, how do you think I got the pictures, yuck! First of all if there has been a decline in production, suspect something. You may not always notice the frass first because when the squash vine borer is small they do not make a lot of poop. They are also on the underside of the plant stem many times. One other thing when excising I want you to remember for the rest of your life **for every entry hole there is a squash vine borer larvae**. That means 3 holes, guess what you are fishing for 3 larvae! Now the only exception to the rule is when a plant gets too sick from a secondary infection and dies he will high tail it out of there and go to a neighboring plant. The photo here shows that this guy attacked a tiny crookneck plant and killed it. Then he went next door to

another squash plant which was way too full, so he just entered in the squash instead! I took 5 out of my butternut vine! 1 at each branch of each vine. You can see the stems look kind of yellowish where they are, little buggers! To excise take a sharp paring knife or a box cutter and slit a hole vertically next to the hole. Be careful not to put your hand underneath. Take a pair of tweezers and remove the larvae and destroy him. After removing the borer from the plant, fertilize it and put a few inches of moist soil on it then water it.

10. Apply Soil For Root Growth - Apply a shovel full of soil on different locations of the vine to encourage root growth. If the squash vine borer attacks your plant at the main stem your plant will be safe from the point at where the new roots have formed.

11. Wrap Bottom of Vine - Wrap cheesecloth or nylon hose around the bottom three feet of the vine. You can also use aluminum foil which is said to confuse them and make them think they are looking at the sky, only use the bottom 10 inches for foil. This will protect it from the squash vine borer from laying eggs and the larvae from entering

Material - Level 3

Strategies using Biologicals and botanicals



1. **Bt Injections** - A little bit squeamish about removing the squash vine borer larvae from the stem of your squash then here is another method for you. Get a 3 cc hypodermic needle from the pharmacy and inject B.t. into stem. Inject it about 1 1/2 inches above the



Brown Stink Bug

(cirrus image)

soil line. You can also inject it about an inch above the entrance site of the larvae. Reapply in 1 week. Clean needle in a bleach solution afterwards so that you do not spread disease. *Bacillus thuringiensis* is a soil bacterium that occurs naturally. It is only effective on the larvae stage. They ingest it and the spore of B.t. paralyzes the cells in the gut. It is in essence a stomach poison. The larvae has no more desire to eat the host plant. B.t. continues to invade the insects other body tissues multiplying in the blood, eventually leading to death. It may take hours or a few weeks, all depending on how much B.t. the insect ate and what species it is.

2. **Hot Pepper Sprays** - Spray the plants with a hot pepper spray 2 weeks before the moths are supposed to emerge. This is supposed to discourage the moths. Reapply weekly.

3. **Diatomaceous Earth** - Sprinkle around the base of the plant as a barrier for the larvae, and on the plant to discourage the moth from laying eggs. Diatomaceous Earth is made from a fossilized hard shell algae.

The End of The Story

Diatomaceous Earth sharp and pierces soft bodied insects.

4. Nematodes- Apply beneficial nematodes at the beginning of the season.

5. Tachinid Fly -The tachinid fly parasitizes the squash vine borer eggs. They have found to be very helpful in controlling the population of squash bugs. They have about an 80% control rate. This is achieved by interplanting with buckwheat. When you do this you cannot use any insecticides or it will kill the flies.

6. Sabodilla and Neem Oil - The only time that insecticides are effective against the squash bug is in the early instar stages. Once the squash bug has developed his hard shell he is in penetrable. The findings are that the cost of insecticides are high and the effectiveness is marginal at best. the other thing you have to take under consideration is that even though they make be organic and made from natural products, they still kill beneficial insects. The best defense against the squash vine borer is beneficial insects and predators. The parasitic wasps were found to greatly reduce the numbers of the squash vine borer.



Saint Vincent De Paul Garden

We here at Edible San Marcos decided to make a difference right where we live. One reason that we chose the St. Vincent De Paul Society is because of what Saint John's Church is already doing for the community. They have a Community Garden of which I and many Edible San Marcos members

garden there. It is a wonderful thing for a church to donate land to the community. We thought that we should in turn do a good deed with one of those plots and feed others from it.

The Saint Vincent De Paul ministry is currently being funded by plate offerings from Saint Johns church on 624 East Hopkins Street, San Marcos, TX. They get their food from the Hays County Food Bank and the Capitol Area Food Bank. St. Vincent De Paul is located at the same address, in the back on the left and has been there about one year.

If we each donate a half an hour a week we will be golden. Or just one seed from each of us now and then will keep the garden going. We can all take turns going to get manure. Just one big team effort will help a lot of people.

They give out food on Tuesdays and Thursdays so we will need to harvest the food and have it over to them by 9:30 am to give to the people. A 7:30Am harvest on Tuesdays and Thursdays will be the schedule with a work day following. I am usually there on evenings as well as weekends. OK, I practically live there! You can give me a jing a ling on the phone, shoot me an email ediblesanmarcos@gmail.com and we can set something up special 512.667.4379 or check the web EdibleSanMarcos.wordpress.com for special work days as well. If you have a garden in the community gardens it is the first plot as soon as you walk in the gate, the one with the wildflowers, lot 8. We have a lot to do on it and quickly. It is a new plot so it needs weeded and dug. If you are in the community gardens feel free to pull weeds and just put the weeds in a pile. I will have a map drawn out this week and in a plastic waterproof box so that

we will have a journal and all be on the same page. The plastic box will be under the tree against the fence with Edible San Marcos Plot 8 written on it. that way you will know what is going on with out me being there. Ahh the power of the pen!



Hays County Literacy Action

Hays County Literacy Action has asked Edible San Marcos if we would like to cater the Adult Education GED Graduation class on June 6, 2009. There are about 30 graduating. We would need food from our gardens to feed 200 people. Email ASAP with a yes or no on the issue. If you can provide anything please let me know what you can provide and how much.



Weed and Feed

We have been blessed with rain which makes our gardens grow, grow grow. So get in there and pull the weeds, they harbor diseases and insects. Compost them for an added bonus to your garden.

Just like you get hungry and need to eat so does your garden. Make sure to give it a side dressing of fertilizer every 4 weeks. Compost that does not have manure in it is not a fertilizer. It does not have all of the necessary nutrients in it. It is usually shy in the nitrogen side unless you have added, vetch or other high nitrogen crops. Use a general organic all purpose fertilizer like Ladybug all purpose or garden-ville 6-2-2 or well rotted composted manure. Make sure not to use manure on root crops. Manure should be used on the above ground crops only. Make sure to write down the date in your journal so you know when to fertilize again!