



HEALTHY GARDEN, HEALTHY MIND

Craig Chalquist, U.C. Master Gardener, Solano County

After a solid week of frantic job stress, the sort of “need it at the last minute” that can make you feel crazy, I got up early this morning, put on rugged clothes, and went to our community garden to do some planting. Lines of tension pulled at my forehead, shoulders, and belly.

Contra Costa County Master Gardeners started the vegetable garden three weeks ago behind the Contra Costa Times building in Walnut Creek. I had helped do some of the double digging: preparing a bed by spading downward a blade-length into the soil (in this case rather dry clay needing watering), setting the dirt aside, then sinking a spading fork an additional 12-18” down.

Doing this aerates the soil, allowing oxygen and water to stimulate the good growing things that inhabit it. Rototilling takes much less effort, but it only works the top of the soil, it grinds up worms and helpful fungi, and the spinning blades



Photo courtesy of Craig Chalquist

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FACT OR FICTION

Dottie Deems, U.C. Master Gardener, Solano County

I was thumbing through a mail order garden supply catalog the other day and found a product that I wasn’t familiar with. It was horticultural vinegar. I’ve used horticultural oil for many years, but I’d never heard of horticultural vinegar. The product was touted as an organic method of weed control. Reading on I found out that this herbicide that was new to me could be substituted for another broad-spectrum herbicide that I currently have on my garage shelf. What I have been using lists glyphosate as its active ingredient. It has suited my needs very well as once it dries my dogs can play in gardening areas where it has been used. It

biodegrades in twenty-four hours. Why look any further?

I’m afraid I was the type of television viewer who just loved to buy and try those unbelievable products that are sold in infomercials. I had a closet full of man-made cloths that supposedly soaked up phenomenal amounts of water in no time, plastic bags that vacuum sealed all kinds of things to give me even more space in my closets, and then there was that can of spray stuff that would hide my husband’s bald spot. I was a sucker.

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FOOD SAFETY IN OUR VICTORY GARDENS

Pearl Eddy, U.C. Master Gardener & U.C. Master Food Preserver, Solano County

The financial situation during the past year has brought many of us back to backyard gardening. During WWII, "Victory Gardens" became popular because we could purchase only a limited number of rationed canned items. People spent a few hours each week growing vegetables (and chickens) in limited spaces in their back yards and reaped the benefits of inexpensive, healthful foods. This spring saw a 20% increase in the sales of vegetable seeds and plants. My concern is that we need to be aware of the possibility of food poisoning from foods that we grow ourselves or purchase from farmers markets or other sources.

Most people enjoy walking through a garden or orchard and picking and eating ripe fruit directly from trees or vines. Nothing can beat the flavor or fresh-picked vine-ripened tomatoes straight from the plants. Wiping with a dry paper towel or similar item can effectively clean smooth-surfaced produce

such as plums or tomatoes. The use of soap is not "registered" for food washing, but washing individual items of produce in running water is helpful in removing contamination.



It would seem that organically grown produce should be free from contamination, but that is not necessarily the case. Animals, birds, compost, manure, impure water, and unclean hands can cause contamination. Don't use manure teas on edible plants unless the liquid has been heated to 135° F to kill most harmful pathogens. If manure has not been actively composted, age it for at least six months prior to use.

Since tomatoes grow so well here, we often have too many and want to preserve them for later use. The easiest way is to freeze them whole, no blanching needed. Simply rinse,

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HOT CHILE SALSA

Yield: Approximately 6-8 pint jars

- | | |
|--|---|
| 5 lbs. chopped tomatoes (peeled, if desired) | 1/2 tsp. pepper |
| 1 lb. chopped or ground onions | 2 tsp. salt |
| 2 lbs. chopped or ground peppers (hot or milder) | For my own personal touch, I add at least 1 tsp. dried oregano or fresh, chopped cilantro |
| 3/4 to 1 cup vinegar | |

Simmer in a kettle for 10 minutes. Pack into clean, hot, pint or half-pint jars, and seal and process for 15 minutes in a simmering water bath. It is safe to use fewer onion or peppers for a milder salsa, but do not decrease the amount of vinegar or tomatoes.

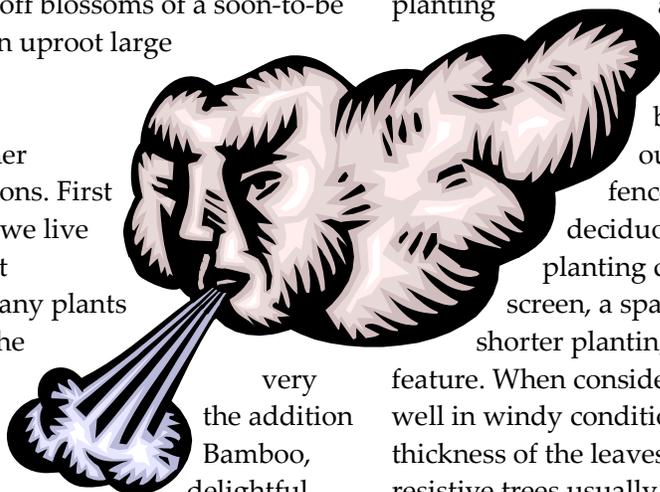
A Favorite Recipe Courtesy of Pearl Eddy, U.C. Master Food Preserver & Master Gardener

LIVING WITH THE WIND AT OUR BACKS...AND AT OUR FRONTS...AND PROBABLY OUR SIDE YARDS

Cheryl Potts, U.C. Master Gardener, Solano County

As with many aspects of gardening, learning to work with nature as opposed to working against it is key. We have no control over sun, but we can create shade. We have no control over the soil we originally inherit, but we can amend. We have no control over rain, but we can learn good water usage and saving techniques. But what about wind? A sweet gentle breeze on a hot summer day can be delightful, but a more powerful wind can dry out plants and soil. It can impede growth of seedlings. It can break branches. It can bend that lovely climbing rose to the ground and it can knock off blossoms of a soon-to-be fruiting peach. It can even uproot large shrubs and trees.

However, as with the other elements, there are solutions. First of all, we can accept that we live in a windy area and plant accordingly. There are many plants that not only do well in the wind, but many whose nature is enhanced by of powerful breezes. swaying in the wind is a very the addition Bamboo, delightful sight. There are a multitude of grasses whose movement in the breeze is soothing to watch, not to mention the delightful swishing sounds to be heard with *Stipa* and *Miscanthus*. Palm and pine trees are at home in windy areas. For an extensive list of plants that do well in wind, refer to the "Plants for Windy Areas" section of the Sunset Western Garden Book (2001 edition).



sun/shade patterns. Once that information is established, providing wind protection will slow down the gusts. Windbreaks can be constructed as trellises or fences. These structures are not to be solid. The barrier is to slow down the wind. If the wind comes up against a solid surface, such as a brick wall, it will blow over it, and back down right onto the plants you are trying to protect with even greater turbulence. Instead, you want the air to flow through the fence, slowing the wind down by about 40 to 50%. Your windbreak should be, if possible, up to twice the length of your planting area.

An even better solution to building an open fence or staking out a trellis is planting a natural fence out of trees or large shrubs. A deciduous hedge filters the wind. This planting can do double duty as a visual screen, a space divider, or a background for a shorter planting and might be a welcome design feature. When considering which trees and shrubs do well in windy conditions, examine the shape and thickness of the leaves, stems and branches. Wind-resistant trees usually have flexible, wide-spreading strong branches and low centers of gravity. Wind tolerant shrubs often have small thick or waxy leaves or very narrow leaves (or needles), to help control moisture loss. Plant species that have large, flat leaves "catch" the wind. These plants have a tendency for branch breakage when strong gusts blow. Evergreen (conifer) trees are an excellent choice, having needles and being flexible in high winds.

Of course not all plants so relish the wind, so we, as gardeners, can lend a helping hand, and actually lessen or redirect the wind, if need be. This can be done with structures, strategically placed. One must become aware of where the wind generally comes from, just as we pay attention to the sunniest parts of the yard. The wind patterns in your garden are as important as your

Engineers have measured the effect of hedgerows and report that there is a 75% reduction in wind speed at a distance of twice the height of the hedgerow. That is, if the tallest plants in the hedgerow measure 15 feet high a 20mph wind will turn into a 5 mph wind 30 feet away from the hedgerow.

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GLASS HOUSES AND TERRARIUMS

Sharon Rico, U.C. Master Gardener, Solano County

Glass displays with plants have been around for many years. We all desire to connect with nature and to nurture living things. To bridge the gap between the outdoors and indoors, designing and planting a terrarium may be the answer as a terrarium requires minimal attention.

Recently, a tour to the Troll Knoll gardens in Penn Valley piqued an interest in Wardian cases, the forerunner of the modern terrarium. In 1830, Dr. Nathaniel Ward, a surgeon in London, placed a hawk-moth pupa in a glass bottle, sealing it for safety. After 6 months or so, Dr. Ward remembered to check the bottle and noticed that the chrysalis remained the same, but a fern had appeared, without water or human nurturing. He began designing more glass cases built to replicate a house or miniature hothouse. These cases were their own tiny biospheres. The airtight Wardian case became a "suitcase" for travelers who purchased rare or exotic plants from other countries and transported them back home, far away from their origins. Most cases were simple, made from metal and glass, then designed with roofs that could be propped open or closed and locked. John Morris, the owner of the Troll Knoll gardens, has a unique collection of Wardian cases placed throughout his gardens. Some hold orchids and exotic plants while others are empty and just lend visual interest (garden art) to the garden.

In searching for glass "houses" for my own home, I found there are so many choices and the more you hunt, the more your imagination opens to possibilities. Some ideas are to use lantern cloches, various jars (with and without lids), cold frames, aquariums (fish bowls), bell jars, trifle bowls and canning jars. Plants can survive in closed containers for several years, for the moisture they give out is

condensed and returned to the soil, while the balance of oxygen and carbon dioxide in the air is maintained by the photosynthetic process. In fact, these containers create their own climate and save the plants from the dry atmosphere.

From the discovery of the closed glass container came two distinct aspects of horticulture. The most important was the use of the Wardian case by plant



collectors. Before its introduction, plants carried on board ships usually died on long ocean journeys from distant countries. In a closed case, plants not only survived, but thrived, without the need for water or care. Separate from thousands of exotic ornamental species, the Wardian case made possible the introduction of the tea plant (*Camellia sinensis*) to India from China. The second, more widespread, use was in the English

Victorian drawing room, where by the 1860's they became a real fashion statement. Early examples were rectangular structures with glass panes in a simple frame, or miniature greenhouses usually on some type of stand. Also in vogue were bell jars and glass domes, on bases of stone.

The first plants to be cultivated in these cases were ferns. With the renewed interest in the past several years, many other plants are popular including orchids, begonias, bromeliads, carnivorous plants, gesneriads, ornamental grasses and African violets. If your container has a lid or cover, the easiest route is to find miniatures that remain mini and to choose shade loving plants and plants that are tolerant of high humidity. If it is an open container, like an aquarium, you can choose a sun loving plant.

It's fun to teach children about growing plants

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SUMMER GARDENING GUIDE

Jennifer Baumbach, U.C. Master Gardener Program Coordinator, Solano County

	July	August	September
Planting	<ul style="list-style-type: none"> <input type="checkbox"/> Summer-to-fall color, choose ageratum, celosia, coleus, marigolds, and zinnias. <input type="checkbox"/> Continue planting warm-season vegetables until midmonth. Beans, corn and tomatoes. <input type="checkbox"/> Start perennials from cuttings-dianthus, geraniums, verbena. <input type="checkbox"/> Sow seeds of columbine, coreopsis, forget-me-nots and foxglove. 	<ul style="list-style-type: none"> <input type="checkbox"/> Start seeds of cool-season crops-broccoli, cabbage, and lettuce-to set out in August. <input type="checkbox"/> Direct-sow edibles: carrots, onions, peas, and radishes. <input type="checkbox"/> Start sowing seeds of cool-weather bedding flowering in flats now: calendula, candytuft, pansies, snapdragons, and stock. 	<ul style="list-style-type: none"> <input type="checkbox"/> Seed: try a selection of colorful salad greens, which are easy to grow at home. <input type="checkbox"/> Time to start thinking of what tree to buy. Consider fall color and shop when leaves color up. <input type="checkbox"/> Shop for bulbs now to get the best selection. <input type="checkbox"/> After midmonth, sow seed of California poppy and clarkia.
Maintenance	<ul style="list-style-type: none"> <input type="checkbox"/> Control weeds-pull or hoe them as soon as they appear. <input type="checkbox"/> Deadhead (remove old flowers) from dahlia, rudbeckia, rose and other perennials. <input type="checkbox"/> Fruit trees-brace limbs that are sagging with fruit. Clean up any fallen fruit. <input type="checkbox"/> Continue to irrigate plants, especially when hot and windy weather is forecast. 	<ul style="list-style-type: none"> <input type="checkbox"/> Deep water trees. Use a soaker hose and place at drip line of tree. <input type="checkbox"/> Fertilize warm-season annuals. <input type="checkbox"/> Deadhead spent blooms. <input type="checkbox"/> Refresh hanging baskets with new transplants. Succulents work well. <input type="checkbox"/> Continue to harvest vegetables for maximum production. 	<ul style="list-style-type: none"> <input type="checkbox"/> Get flowering annuals and perennials as well as fall-planted vegetable off to a strong start by incorporating a high-nitrogen fertilizer into the soil before planting. Fertilize again 2-4 weeks or follow label instructions. <input type="checkbox"/> Later this month is one of the best times to rejuvenate bluegrass, fescue, and rye grass lawns. Rake and reseed. Be sure to irrigate and keep moist.
Prevention	<ul style="list-style-type: none"> <input type="checkbox"/> Budworms-inspect plants for holes in buds and black droppings. Use BT's to control. <input type="checkbox"/> Deep water trees. Midsummer heat can cause drought stress. Deep water citrus, fruit and flowering trees once every week or two. Water less-thirsty trees once a month. <input type="checkbox"/> When foliage dries completely, dig up spring-flowering bulbs and tubers. If daffodils and Dutch iris appear crowded, dig them up too. Store bulbs and tubers in a cool, dry place until fall planting. <input type="checkbox"/> Dig and divide overcrowded bearded iris clumps. Share with friends and neighbors! 	<ul style="list-style-type: none"> <input type="checkbox"/> Continue to deep water all plants to avoid sunburn and other damage from hot weather. <input type="checkbox"/> Continue garden clean up. Remove fallen fruit and garden debris. <input type="checkbox"/> Inspect plants for signs of spider mites. Apply a blast of water spray to undersides and tops of leaves to dislodge dust and mites. 	<ul style="list-style-type: none"> <input type="checkbox"/> Clean up fallen fruit and leaves to keep diseases at bay. <input type="checkbox"/> Clean up old vegetables to prevent over-wintering of insects and disease.



California Gardening Website

University of California
Cooperative Extension
Your one-stop site for everything
gardening in California.

<http://cagardenweb.ucdavis.edu>

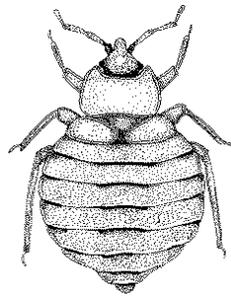
BED BUGS

Lisa Hirsch, U.C. Master Gardener, Solano County

Are you being bugged?

We all know a little something about bugs: the ones we find in our yards, pests (aphids, mealybugs, etc.) or beneficial insects (e.g., lady beetles, hoverflies); in our homes (e.g., ants, cockroaches); and bugs on our animals (e.g., ticks, fleas), but bugs in our beds? What an unpleasant thought! Read on to learn how to identify and prevent unwelcome 'guests' in your bed, and if you should be so unlucky to have them, what you can do to get rid of them.

An insect of the family *Cimicidae*, adult bed bugs are very small (1/8th – 3/16th of an inch). One of the first challenges you will have is identifying what you are sharing your bed with. Bed bugs derive their name from their habitat of choice: mattresses, sofas, and other furniture. You might notice tiny red bites on your body, but no sign of the culprit(s). They are hematophagic—they feed on the blood of humans and other warm-blooded hosts.



Although tiny, it is a misconception that bed bugs are not visible to the naked eye; bed bugs move slowly, and the patient observer will be able to see the oval, reddish-brown, flattened and wingless body of the adult bed bug, with its microscopic hairs that give it a banded appearance. Newly hatched nymphs are translucent, lighter in color, and become browner as they molt and reach maturity. In size, they are often compared to lentils or apple seeds.

Bed bugs are mainly active during the hours just before dawn, and usually feed while you are asleep. They pierce the skin of their host with two shallow tubes: one tube injects saliva that contains anticoagulants and anesthetics, and the other withdraws the blood of its host. The bed bug feeds for just a few minutes, and infrequently, maybe once a week or so. The bite causes an itchy irritation to the skin.

The life span of a well-fed bed bug is up to nine to ten

months. They can also go dormant and live for a year or more if food is lacking. Easier to see than the bed bugs is the waste they leave behind, in the form of blood and feces (dark spots on your mattress) or of shed skins, eggs, dead bed bugs, etc. As the name implies, you may find bed bug waste inside your mattress, in the box springs, in your linens, or even in the folds of curtains or nearby furniture.

There is no direct correlation between bed bugs and sanitation levels. Bed bugs can hitch a ride into your home in your luggage if you've been traveling and staying at infested hotels or dwellings, on used clothes or furniture, or in the clothing of guests. All it takes is one bed bug to start an infestation! It is smart to check used furniture and clothing before bringing them into your home, and to check bedding and furniture where you are staying while traveling. Keeping your luggage and clothes off the floor may help as well.

Getting rid of the bugs can be challenging.

The most important thing to know is that it is imperative to remove every last bug and its eggs! A thorough vacuuming and cleaning of all infected surfaces and surrounding areas can help reduce the number of eggs that would otherwise hatch. The heat from steam cleaning is also an effective way to kill the bugs, but may need to be done in conjunction with other methods as any eggs or bugs that are missed will re-colonize. Depending on the situation, it may be necessary to check with a professional to assess the infestation and assist with elimination options.F

Resources

UC IPM Pest Notes series. Bed Bugs, Pub. 7454.

<<http://www.ipm.ucdavis.edu/PMG/PESTNOTES/pn7454.html>>

Wikipedia, Bed Bugs.

<http://en.wikipedia.org/wiki/Bed_bug>

DOES YOUR SOIL HAVE THE COMPACTION BLUES?

Annie Joseph, U.C. Master Gardener, Solano County

Is water running off your garden as if you were watering the driveway?

Do your plants seem stunted no matter how often you fertilize?

If so, your garden could be suffering from soil compaction. When soil is compacted it restricts root growth and decreases the ability of the roots to take up oxygen, nutrients, and water. It can also contribute to soil erosion.

Soil compaction reduces the number of pore spaces between the soil particles and also reduces the size of those pores. Reduced pore size and numbers also reduce oxygen levels for the roots making them more susceptible to diseases. According to experts “[p]oor root aeration is one form of stress that is particularly important in urban and park settings ... soil compaction can interfere with oxygen movement into the soil because of the loss of macropore [large] space.” (1)

What are some of the causes of soil compaction?

1. Frequent or heavy traffic from people and equipment
2. Light and heavy traffic over wet soils
3. Working soil when it is too wet
4. Excessive tilling

What can we do to avoid compacting our soils?

1. Add organic matter in the form of
 - compost
 - green manure, which is a type of cover crop grown primarily to add nutrients and organic matter to the soil, and
 - Non-composted manure

Each of the above ensures a continuous supply of energy for the microorganisms in the soil. As the soil microbes decompose organic matter they convert it to a form that can be used by the plant. They also help

maintain good soil structure.

Soil organic matter also increases the ability for the soil to hold moisture.

2. Reduce tillage as tillage frequently destroys the soil aggregates that we want to preserve.
3. Plant fibrous-rooted cover crops like grasses that help promote good soil aggregates.
4. Mulch to reduce water loss and to protect against raindrop compaction.
5. Cycles of wetting and drying cause swelling and shrinking soil, which can result in improved soil aggregation.F

Resources

- (1) Costello, L.R., Mac Donald, J.D., and Jacobs, K.A. 1991. Soil Aeration and Tree Health: Correlating Soil Oxygen Measurements With the Decline of Established Oaks. USDA Forest Service Gen. Tech. Rep. PSW-126. <http://www.fs.fed.us/psw/publications/documents/psw_gtr126/psw_gtr126_05_costello.pdf>
- (2) California Master Gardener Handbook, pp. 62-63.
- (3) UC ANR Publication 8202, “Orchard Floor Management Practices to Reduce Erosion and Protect Water Quality.” <<http://ucanr.org/freepubs/docs/8202.pdf>>



Healthy Garden, Healthy Mind (Continued from page 1)

leave a polished layer that inhibits root growth and water circulation. Sheet

mulching is even easier, but it takes time to enrich the soil, and we needed to start our demonstration garden while we had the funding to do so.

With a bed already prepared, I knelt and pushed soil together into low mounds.

On the first my fingers dug a shallow circular ditch three feet across. Into this I dropped some 'Casino' variety corn seeds. Inside the first ring I dug a second and left Kentucky Blue pole beans. Brushing over all the seeds with compost and soil, I rose and watered in the entire bed, flicking the nozzle gently to simulate rain. A later addition of squash seedlings would complete this native-style "Three Sisters" planting.

Next to my bed ran one dotted hexagonally with tomato plants. These we had planted from seedlings, taking care to put the roots deep into the ground. They were doing fine with our new barrier in place, although a Master Gardener had seen a squirrel bouncing off the bird netting we had anchored down with boards and stones.

Maybe the squirrels will eat the crop I had just planted, I mused lazily as the sun finally cleared the oaks. If so, we could always plant more, and the critters at least would be happy and fed.

That gardening reflectively can free the mind from its customary obsession with results and outcomes represents just one of the psychological benefits of growing things outside. Studies within the field of horticultural therapy are amassing evidence for how healthy gardening can be, from lowering blood pressure to easing depression and anxiety. It surprises us, the healing strength of visiting the natural world, and yet it shouldn't. Our species grew up in that world. Its organic patterns and rich information flows mirror those of our big mammalian brains.

For me, gardening brings a sense of partnership with the land. My pioneer ancestors found this sense hard to come

by. If the wheel on your wagon breaks in the middle of a prairie, you can forgo practicality and appreciate the scenery, but you'd better plan to stay a while. Loitering on the open sea could bring disaster on a long voyage undertaken with limited ship's stores. Today, the urge to move forward, move on, and keep going reaches so persistently into most of us that, pioneers or not, we don't even consider it unnatural anymore.

I garden because I enjoy it, because I like the good food and the exercise, because I know the mental and physical benefits of reconnecting with land I have come to love—but I also do it because when I'm outside in contact with the soil, I feel like I'm at home in the world.

Instead of seeming to myself like a stranger or a passer-by, I feel like I belong here. Instead of remaining creatures glimpsed distantly through a window, plants and insects and animals become kindred with habits I can understand and even relate to at times.

And I feel more detached from outcomes I cannot control. In July, for example, the Board of Supervisors of the budget-crunched County of Contra Costa meet to decide the fate of the Cooperative Extension where we Master Gardeners offer our free gardening and pest-management advice to the public. In Solano County, their budget was going to be cut 36%, however on July 2, their full funding was restored. The Solano County budget will be revised again, once the state budget is known.

Money is so tight now that we might soon be the only two counties around the Bay Area without a Cooperative Extension office. Unfortunately, the amount saved will be little in comparison to what is saved by managing pests, watering wisely, putting fewer chemicals into the ground, or teaching children where food comes from. (Visit <http://groups.ucanr.org/mgccc/> to learn about what we do.)

However things turn out, the land has taught me that systems out of balance have a way of creating new openings, subtle shifts, unexpected opportunities for health and growth. Knowing this lets me go home with more soil on my kneecaps and less worry in my heart.F

Fact or Fiction (Continued from page 1)

Did I fall for the claims made about horticultural vinegar? I've actually changed my ways since I became a Master Gardener. The University of California Master Gardener Program disseminates UC research-based information about home horticulture and pest management. Obviously I needed to know more about this product before I purchased any.

The internet plays a huge role in a Master Gardener's ability to locate research material. My first stop was www.ucanr.org (UC Agriculture and Natural Resources). I typed horticultural vinegar into the search line and got 47 matches, but none of them really were on point. I tried searching under the California Environmental Protection Agency and found nothing of real value. I seemed to be finding information on horticultural oil and vinegar flies instead of information on horticultural vinegar.

I decided to cast my "net" even further afield when I Googled "horticultural vinegar." Within .19 seconds I had over 2,000 hits! Many of those hits led me to websites where I could buy horticultural vinegar. Finally, some were research based entries that might help me decide on the efficacy of the product. Here are some of the things I learned.

S Vinegar is acetic acid.

S Not all acetic acid is organic.

S The vinegar I use on my salad is about 5% vinegar.

S The vinegar I use on my salad is not horticultural vinegar.

While 5% vinegar can be used as a quick broad spectrum herbicide it only kills top growth, not the roots. It kills by rapid dissolution of the cell membrane resulting in the desiccation of foliar tissue. It kills unselectively so whatever you spray it on dies back. Overspray or drift of acetic acid sprays will damage my favorite rose bush.

Acetic acid concentrations greater than 8% must be Environmental Protection Agency (EPA)-registered as an "active ingredient" in a pesticide product.

The acetic acid content of horticultural vinegar is greater than that of the kind I use on my salad. It is generally 8% up to 20% to 25% acetic acid.

At this concentration many weeds can be defoliated at a 100% level. At the end of thirteen weeks following the application approximately 80-90% of the weeds came back. It does not destroy the root system of the weeds.

Horticultural vinegars, those above 5% acetic acid, are increasingly corrosive. Proper eyewear and clothing must be worn when it is used. A respirator should also be used. Mere mist can cause irreversible eye damage, burns to the skin, throat, and nasal passages. It is flammable as a mist or spray so avoid ignition sources. It is lethal or dangerous to small animals, reptiles, and arthropods.

Horticultural vinegar may also be used as a soils drench rather than a spray. Although it is reported that acetic acid is not reported to accumulate in the environment and readily breaks down into water, 24% acetic acid can temporarily decrease the pH of soil. I didn't find any material relating to its affect on water sources, but it was recommended that it not be sprayed in the area of ponds.

Horticultural vinegar with a concentration level of 30% or above is so corrosive that it damages copper, brass, and certain plastics. Therefore storage containers and application equipment can be damaged even though the equipment is thoroughly rinsed.

Needless to say I also learned that there is yet to be a manufacturer that is willing to go through the registration process of the EPA with a 20% acetic acid product for home use.

The more I read, the more I learned, and the more I learned the more I realized that horticultural vinegar was not something I wanted to use. Although it is "organic" that doesn't mean it is safe. As a Master Gardener I couldn't direct anyone to use such a product. After all, it's an unregistered pesticide!

The popular press, anecdotal reports, and infomercials do not take the place of sound university-based research. Please do your homework before you jump on any bandwagon. Ask a Master Gardener!

(Continued on page 10)

Fact or Fiction (continued from page 9)

Resources

"Acetic acid (vinegar) for weed control revisited" by Mike Owen, Extension Weed Scientist, Department of Agronomy, Iowa State University.

"Vinegar as an Herbicide-A New 'Natural' Weed Control Tool", Northwest Coalition for Alternatives to Pesticides.

Archives of the National Sustainable Agriculture Information

Service.

"Evaluation of acetic acid based herbicides for use in broad spectrum turfgrass and weed control" by David Chinery, Cooperative Extension Educator, Cornell Cooperative Extension of Rensselaer County.

"What's Cooking with Vinegar Recommendations? Acetic Acid as Herbicide" by Catherine H. Daniels, Pesticide Coordinator, WSU and the Director of the Washington State Pest Management Resource Service. F

Food Safety in Our Victory Gardens (continued from page 2)

seal whole in plastic bags, and freeze. When defrosted, the skins will slip off easily.

To freeze peppers, do not blanch. You can leave smaller peppers whole, but large peppers may be quartered or sliced to save space. I like to freeze tomatoes and peppers and then make salsa later when I have time. The salsa can then be canned in jars using the boiling water method.

When canning vegetables and fruits it is important to understand the difference between low-acid and high-acid foods. Dangerous bacteria which cause botulism do not grow in high-acid foods which have a pH below 4.6. (The lower the pH, the higher the acid.) Some foods are "borderline" such as ripe tomatoes, figs, and overripe pears. To these products we must add a recommended amount of acid, such as 5% vinegar or bottled lemon juice.

Living with Wind... (continued from page 3)

It is important to remember that you are filtering the wind, not blocking it. Moving air is essential to plants. If you notice some of your plants getting mildew or infected, you may want to actually move them to a more breezy spot. However, if you notice that your butterfly garden is not getting the butterflies you expected, you may want to control the wind in that area, as butterflies do not like wind.

A few more hints and reminders: Remember to mulch to lessen the loss of water. If you choose to use pots, do not use unglazed terra cotta, as soil dries out faster in

Very ripe tomatoes have less acid than less-ripe tomatoes. I like to use very ripe tomatoes and so must use an adequate amount of acid for safety. For instance, to can a pint of tomatoes, we must add 1 Tbsp. lemon juice or 1 Tbsp. (5%) vinegar or ½ tsp. citric acid crystals before processing in a boiling water bath canner. (Do not use fresh-squeezed lemon juice or homemade vinegar as the acid content may be less than the required 5%. Read labels to be sure.) In recent years the US Dept. of Agriculture (USDA) recommendations have changed for safe food processing. Amounts of required acid and processing times were increased. When canning foods, it's essential to follow safe USDA approved recipes and methods.

An excellent resource is the Ball Blue Book of Preserving, published by Alltrista Consumer Products Co. To order the book or to get answers to preserving questions you can call 1-800-240-3340, or go their web site: www.freshpreserving.com.F

these pots than in other pot materials. In these pots, mulch with stones such as river rock, as it will not blow away. Use a few large pots instead of many smaller ones, as, again, these will not dry out as quickly.

Part of accepting that we live in a windy area is learning to appreciate the wind. Wind is so often essential to pollination. Do not forget that it is moving air that brings you the fragrances of the garden while sitting on your patio on those warm summer nights. And of course your wind chimes would be useless without a fairly strong breeze.F

Master Gardeners at Local Events

TOMATO DAY FESTIVAL

August 15 (10am-5pm) & 16 (11am-4pm)
Downtown Fairfield
Master Gardeners located at 675 Texas Street
in front of fountains.



MORNINGSUN HERB FARM TOMATO DAY

August 23, 11 a.m. - 3 p.m.
6137 Pleasants Valley Road, Vacaville
www.morningsunherbfarm.com

VACAVILLE LIBRARY PRESENTATIONS

Presentations begin at 7 p.m.

August 27: "ARBORETUM ALL STARS"

September 17: "IRRIGATION"

October 15: TOPIC TBA

VACAVILLE CULTURAL CENTER LIBRARY
1020 Ulatis Drive, Vacaville (707) 449-6290

**Exact schedules for Master Gardeners at Farmers Markets was not available at press time. Contact Jennifer Baumbach at 707-784-1321.*

BENICIA*

Thursdays (operates 4/30 -10/29)
4 p.m. to 8p.m.
1st Street between B & D Streets

DIXON*

Thursdays (every other starting 6/11)
4 p.m. to 8 p.m.

Women's Improvement Park
North 1st & East C Streets

FAIRFIELD*

Thursdays (every other starting 6/11)
Jefferson Street, downtown Fairfield
4 p.m. to 8 p.m.

VACAVILLE*

Saturdays (operates 5/16 - 10/31)
8 a.m. to 12 p.m.
Main Street between Parker & Dobbins Streets

VALLEJO*

Saturdays (operates year-round)
9 a.m. to 1 p.m.
Georgia & Marin Streets

Glass Houses and Terrariums (continued from page 4)

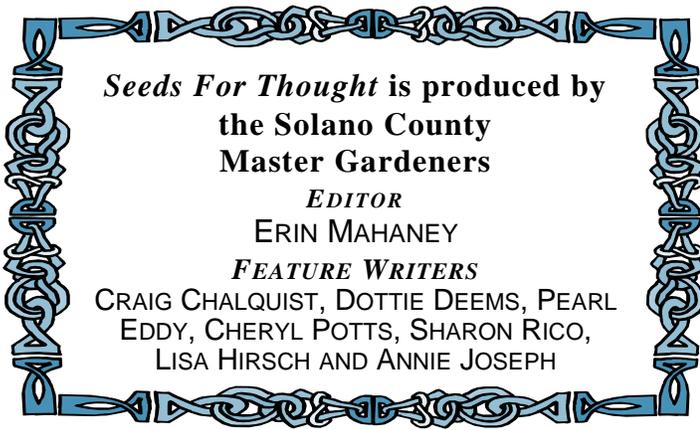
indoors with a container as simple as a canning jar.

Place some charcoal in the bottom of the container, add potting soil and place a small fern or begonia in the soil. Water lightly (never drench) and cover with a lid. Keep out of direct sunlight and enjoy. Monitor the jar, but it should go for months without additional water.

The plants we have at home growing in terrariums are African violets and ferns. One of the violets is sitting on top of large tumbled stones in a round open fish bowl. The other violet is on a glass

pedestal with a bell jar covering it. Both plants seem happy and have been blooming for months. Besides growing plants in glass houses, you can show off a nature collection by adding a bird nest or other items you may find interesting.

Today thousands of people all over the world enjoy owning some type of glass structure, whether indoors or out, from Wardian cases, terrariums to plant windows and greenhouses. When nature is out of reach and you crave a little greenery, you can bring the outdoors inside with a glass house or terrarium.F



**Seeds For Thought is produced by
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Contact us!

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Please put '*Seeds For Thought*' in the email Subject line.

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It is available in full color through the internet for free download:

<http://cesolano.ucdavis.edu/newsletterfiles/newsletter130.htm>

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