Master Gardener Newsletter

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SOCKING IT TO STRAWBERRY ROOT ROT

Strawberry plants grown in compost-filled mesh tubes, or "socks," had significantly less chance of getting black root rot, a severe threat to yields, than plants grown directly in infested sils in an Agricultural Research Service (ARS) study.

No methyl bromide or any other soil fumigant was used in the study, since they have become to costly for many small growers and nonchemical alternatives are being sought. The sock plants yielded 16 to 32 times more fruit than those from the conventional "matted row" or black plastic mulch systems when grown in infested soil with no soil treatment.

The compost socks lay on top of the infested soil. The disease didn't migrate into the socks and roots of the strawberry plants during the first growing season, as it did into the strawberry plant roots growing in infested soil. Drip irrigation provided water and supplemental nutrients to the plants in the compost socks.

Microbiologist Patricia D. Millner, with the ARS Sustainable Agricultural Systems Laboratory in Beltsville, Md., conducted this study — the first of its kind for strawberries.

Small strawberry growers in the northern United States tend to use perennial matted rows, in which the runners self-root and form living mats. Some operations that grow strawberries as annual plants use black plastic mulch. Soil fumigants are used to control root diseases, weeds and nematodes.

In addition to horticultural production, compost socks are often used for road and stream bank stabilization, flood control, and to hold back silt at construction sites.

Millner experimented on three farms in central Maryland, each with different soil types. She rated the root health of the strawberry plants on a scale of 1 to 5, with a rating of 5 meaning the plants were totally free of root rot. All but one plant grown in the compost socks scored 4 or 5, while those grown in matted rows or plastic scored from 1 to 3, except for one rating of 4. A study comparing compost socks with fumigation and crop rotation is being completed.

Read more about the research in the September 2007 issue of Agricultural Research magazine, available online at http://www.ars.usda.gov/is/AR/archive/sep07/root0907.htm

Inside this issue:

GARLIC'S GOODNESS BEST RELEASED WITH A CRUSH

Consuming large amounts of raw garlic may be good for your heart, but not necessarily your social life. So, how do we best enjoy these pungent little bulbs, without missing out on their impressive health benefits?

Crush them. Then bake them slightly. That's according to Agricultural Research Service (ARS) scientists and collaborators in Argentina.

Researchers have known to some time that garlic — like its close relative, the onion — is a rich source of heart-protective compounds called thiosulfinates. These sulfur compounds, best known for causing eyes to water, may lower blood **(continued page 2)**

Master Gardener Meeting
Wednesday
October 17, 2007
See you there !!!

(Garlic's Goodness continued)

And break up potentially harmful clusters of platelets in the bloodstream.

But, up to now, most researchers and nutritionists assumed that the best way to seize on garlic's cardiovascular benefits was to eat the small bulbs in their most unfettered form: in the raw.

Not so, discovered ARS plant geneticist Philipp Simon and his colleagues Pablo Cavagnaro, Alejandra Camargo, and Claudio Galmarini, whose finding appear in the Journal of Agricultural and Food Chemistry. Simon works in the ARS Vegetable Crops Research Unit in Madison, Wis. Cavagnaro, Camrgo and Galmarini work at the INTA La Consulta in Argentina.

Since most people worldwide sauté or bake their garlic before eating it the researchers wanted to know if cooking reduced garlic's blood-thinning effects. They also wanted to see what impact crushing the garlic before cooking had on its ability to bust up artery-clogging platelets.

After boiling, baking and microwaving both crushed and uncrushed cloves of garlic and evaluating them for their antiplatelet activity, the scientists learned that lightly cooked, crushed garlic provides most of the health benefits found in raw garlic. The only exception was microwaving, which stripped garlic almost entirely of its blood-=thinning effects.

The researchers contend that while heating might be generally blamed for reducing garlic's antiplatelet activity, it's the crushing that enables the beneficial compounds to be freed in the first place.

Q **It sounds like a silly question, but just what is an herb? Are there any rules at all?**

A **Not really. The definition most dictionaries list first is that herbs are plants with no woody structure. Whether annual or perennial, they die to the ground either after flowering or at the end of each growing season. By this definition, banana trees are herbs and rosemary bushes are not. More familiar definition is that herbs are plants that are useful: as seasonings, as medicines, or for other practical purposes such as dyeing cloth. This covers an awful lot of ground and has its own problems-vegetables, for instance which were included in the old herbals but are seldom thought of as herbs these days. The bottom line seems to be that herbs are a lot like pornography: you may not be able to define it, but you know it when you see it. (From: New York Times 1000 Gardening Questions & Answers)**

NEW PHEROMONE SPRAYER LEADS AMOROUS MOTHS ASTRAY

For decades, apple and pear growers have "adorned" their orchards with hundred of plastic dispensers that emit a chemical sex attractant, or pheromone, to disrupt codling moth mating. Now, thanks to Agricultural Research Service (ARS) studies in Wapato, Wash., growers could soon be spraying the pheromone instead.

Growers customarily hang the pheromone dispensers from tree limbs by hand — often 200-400 of them per acre. It's a laborious, costly affair, notes Alan Knight, an entomologist with ARS' Yakima Agricultural Research Laboratory in Wapato.

Although spraying pheromone isn't a new idea, early attempts stumbled on technological hurdles. In 2003, Knight decided to give it a try based on a 1999 observation he had made while testing a fluorescent dye he had added to a sprayable, microencapsulated pheromone product developed by a Bend, Oregon company.

Using the dye and a black light to examine microcapsule densities on tree leaves, Knight determined the codling moth pheromone's delivery could be improved using ultra-low-volume (ULV) spraying. Besides cutting water use from 100 gallons to 1.25 gallons per acre, Knight's approach increased the microencapsulated pheromone's deposition rate by six– to 10-fold.

His trials in apple and pear orchards since 2003 show that ULV spraying four to six times a season disrupted codling moth mating as effectively as the hand-hung dispensers. Knight determined this from captured-moth counts and reductions in fruit damage. In 2005, he expanded the studies to include ULV spraying of the insecticide esfenvalerate, which curbed moth egg-laying by 95 percent.

If unchecked, hatchling moth larvae waste little time boring inside nearby fruit, ruining its marketability. Besides apples and pears, the pests also attack walnuts.

Knight is testing reduced-insecticide rates in combination with the pheromone. And to the sprayer itself, he's making adjustments that include adding an electronic "eye" to direct pulses of material into the center of a tree's canopy.

Read more about the research in the September 2007 issue of Agricultural Research magazine, online at: http://www.ars.usda.gov/is/AR/archive/sep07/moths0907.htm

October 1
Alberta Morgan
Della McNutt

October 4
Juliet Williams

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Barbara Arispe

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Miles Munoz

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Ann Fair

OCTOBER GARDEN TIPS
By Ann Fair

October can be the time to plant a wildflower garden. It's not difficult and here are some ideas. The garden will need at least partial sun, preferably full sun. Naturally, get rid of the weeds or grasses. Mix the seed with organic material like peat to provide an even distribution. Rake the seed in no deeper than 1 inch. Then tap down the seed so the soil is firm. Water your wildflower garden on a regular basis so that the ground stays damp until the seeds germinate. Then water once a week, or when the garden needs it. Some books say "Bring inside any pots of tender perennials that you plan to over winter." If you move your potted perennials over next to your house when they say a freeze is inevitable, and leave them there for the winter, the heat from the house may be enough to keep them going. A freeze needs to have the plant covered with a sheet or a light blanket.

When you plant a wildflower garden in the fall, the seeds will over winter. This means that the seeds will lay dormant until spring and then start to grow. While there is some risk of the seeds being eaten by birds or animals, don't sow more than the label indicates. The mix will contain enough seed to compensate. It's also not a good idea to over-seed because the early bloomers in the mix will squeeze out the later bloomers. In most mixes, some of the perennial flowers won't bloom until the second year. Ask at your local garden center for the best mix in your area. If you don't want grasses planted with your wildflowers, check the label to make sure none are included in the mix.

BULBS; Plant bulbs like tulips, hyacinths, daffodils, and crocuses in the fall for blooming next spring. Add a little phosphorus at the bottom of the hole before planting. There is a limit to the number of bulbs that can be planted per square foot: tulips—8 to 10, hyacinths and daffodils—5, crocuses—10-15.

TREES AND SHRUBS: Continue watering all trees and shrubs until the first hard freeze (even if the leaves have changed color and fallen). Plant container and balled and burlapped trees and shrubs. Tree leaves and old fruit should be raked and composted, tilled into the garden or used as mulch. If you want to make mulch out of tree leaves, here are some ideas: only till or use as mulch if you're very sure the leaves are not diseased. Chop the leaves up into small pieces so they will decompose more easily and won't blow away. You can do this by running over them with a mower. Sprinkle slow-release nitrogen fertilizer on top of newly mulched beds. This will help soil and nutrients stay balanced. In higher elevations, wrap the trunks of all young and tender barked trees in mid-to-late October. Do not fertilize trees and shrubs now.

ROSES: Do not prune roses. Tie down tall branches far enough so they don't get buffeted by the wind. Water when the soil is dry.

LAWN: Apply a winterizing fertilizer on the lawn and aerate . . . Rake dead leaves off the lawn. Mow for the last time in mid October. Mow lawn to 2". If moisture is minimal, water your lawn. Winterize the irrigation system before a hard freeze, especially in higher elevations. This should not happen until mid November.

KITCHEN GARDEN: Plant garlic cloves. Harvest brussel sprouts and pumpkins after the first frost. Pull and compost finished vegetable plants. In higher elevations, spade vegetable gardens and add organic matter. Put mulch around your carrots and other root crops to keep the ground from freezing. You can then continue to harvest for another couple of months.

A Thistle in the Garden

Seedlings - Vigorous and Full of Promise

When is a thistle not a weed? Well, I guess when it's edible. Then what is a Cardoon? Well, it must be a weed when I grow it, because it certainly is not edible, never the less, it is a thistle. Related to the Artichoke - perhaps sharing a common ancestor or being the ancestor of the Artichoke, depending on whom you read - the Cardoon is in this county an obscure food plant.

Mature Plant

My first gardening adventure with this thistle has yielded nothing edible, but has provided seeds with which to try again. Can they be grown here – that remains the question.

Blanching The Leaves

I followed the instructions for growing this native from North Africa, via Italy and France, but as it turns out, the plants require something different here to be edible. If you plant them in early spring, they mature during the heat of summer and are bitter enough to curdle your milk. The plants struggled through June, full of perky promise every morning but drooping like an over heated dog under the afternoon sun.

Flower

Unlike their Artichoke relatives, you grow them as annuals from seed and harvest the blanched leaves when young, tender and sweet. The problem is that warm temperatures make the plants bitter, another reminder of the subtleties of adapting a plant to the local conditions of seasons and soils.

Perhaps the next crop this fall and winter will uphold the gourmet reputation of this obscure thistle – perhaps if I master the horticultural and culinary challenges, then perhaps, there will be something new on the table, if not - there's always something to learn in the garden where nature serves a dose of knowledge and humility with every bite.

Seed Heads

Darrol Shillingburg

Master Gardener

Climate Change and Groundwater Recharge

Elevated levels of carbon dioxide (CO2) in the Earth's atmosphere could seriously impact air, weather and vegetation. Now a scientist with the Agricultural Research Service (ARS) is taking a closer look at what could happen underground.

If atmospheric CO2 levels double within this century, as many climate models predict, some areas could experience large increases in the rate of groundwater recharge, the process by which water filters through the soil and enters aquifers. That's the conclusion of a recent study conducted by ARS scientist Tim Green, a hydrologist in the agency's Agricultural Systems Research Unit at For Collins, Colorado.

Green worked with Australia's Commonwealth Scientific and Industrial Research Organization (CSIRO) to investigate how climate change impacts groundwater and the vadose zone, the region between soil surface and water table.

The rate at which water filters through the vadose zone is controlled by interactions between soil, water and plant systems. Green and his colleagues found that his rate was increased by the changes in precipitation and temperature that elevated CO2 levels are expected to bring about.

The scientists developed a method for simulating the effects of elevated CO2 levels on plants, groundwater and the vadose zone. Then they applied it to two locations in Australia—one subtropical, one Mediterranean—where eucalyptus, pine and native perennial Australian grasses grow. They found that the Mediterranean location responded more to temperature changes, whereas the subtropical climate was more influenced by the frequency and volume of precipitation. In both locations, changes caused to soil, precipitation and plant transpiration by simulated climates with twice the existing CO2 led to significant changes to the rate of groundwater recharge. Water recharged from 34 percent slower to 119 percent faster in the Mediterranean climate, and from 74 to 500 percent faster for the subtropical climate.

While the opportunity for decreased recharge rates exists, the general trend is towards increase. Future research will investigate whether those changes would benefit or harm those ecosystems.

A paper on this research was published in the August issue of the Vadose Zone Journal.

Banana Cake Recipe

(Corrected)

1/2 Cup Margarine or Butter

1 1/4 Cup Sugar

2 Eggs

1 tsp Baking Soda

4 Tbsp Sour Cream

1 Cup Mashed Bananas (3 Small or 2 Large Bananas)

1 Cup Sifted Four

1/2 tsp Salt

1 tsp Vanilla

Cream margarine and sugar, add eggs, very lightly beaten. Dissolve soda in the sour cream, then add to mixture. Beat well with electric mixer, then add the bananas, flour, salt and vanilla (batter will appear to be curdled, don't worry). Beat well until batter is fluffy. Bake in well greased and floured 8" square or 9 x 13" pan for 35 to 45 minutes. Dust with powdered sugar when cool; this cake is so rich it needs no frosting. Cut into squares, serve with tea.

HARVESTING WATER

by Dee Davis

When I heard about harvesting water at the Master Gardening class the idea hooked me in. This would definitely supplement the three-day-a-week water schedule the city allowed me during the summer. Nevertheless I wasn't thrilled with the idea of spending a fortune on a water collection system, so I devised an inexpensive design of my own.

First, I purchased two heavy-duty garbage cans and cut a 5-1/2" square from the top so that rain could enter there. To deter mosquitoes, I duct-taped a piece of screen over each hole.

The next task in my plan was to cut off the excess overhang of two canales. Each lip was bent down a bit because I wanted the water to go *into* a rain gutter and not fly over it. I then installed a rain gutter under the canales at a slight downward angle directed to where the garbage cans would be placed. I sawed off the downspout at about six feet and mounted it on the rain gutter. I had determined that six feet was about where I'd place another piece of downspout at a 90-degree angle with a piece of telescoping plastic that went to the garbage can. At this end I placed another piece of telescoping piece where water would fall into the garbage can (the one on the right in the picture.) To accommodate overflow from the main collector to the secondary container (on the left), I connected the two with a three-quarter-inch piece of plastic tubing. *When you're finished with this project it's crucial to seal each connection with a product like Pro Series Gutter Premium Sealer!*

I installed an on-off valve in each collector about a quarter of the way up from the bottom, to which I attached a long 3/4" piece of plastic tubing. The end of one tube was placed in a strawberry bed, the other in a decorative flowerbed. During a particularly hard rainfall I'll open the valves, but close them at a certain point when I determine the cans will fill up without overflowing from the top.

If you wish to harvest water, know that when you begin this tinker-toy project all pieces can be purchased at Lowe's or Home Depot. It's just a matter of using logic to put it together; however, if you wish to discuss details about how to construct this, please see me at a Master Gardener's monthly meeting.

You'll love having a water harvesting system in place. Then all you have to do is hope the rain gods are doing their job.

TREATMENT FOR MOUSE-EARED PECAN TREES NOW LICENSED

A foliar fertilizer developed by Agricultural Research Service (ARS) scientists to alleviate the condition known as "mouse-ear" in pecan trees has been licensed to NIPAN, LLC, of Valdosta, GA. NIPAN will produce the nickel-based treatment under the trade name NICKEL PLUS. Mouse-ear reduces pecan trees' health and size, makes the trees' limbs brittle, and shrinks nut yields.

The mouse-ear abnormality shows itself as rounded or blunt-tipped leaves. Previously recognized as "little leaf," it's becoming increasingly common in second-generation orchards when pecan trees are replanted. It can also occur in other trees, such as river birch. One treatment of NICKEL PLUS, sprayed on foliage about two weeks after budbreak, is usually sufficient to correct the disorder.

ARS plant pathologist Charles Reilly, nematologist Andrew Nyczepir and Bruce Wood, research leader at the Southeastern fruit and Tree Nut Research Laboratory in Byron, Ga., determined nickel deficiency to be the cause of mouse-ear. They observed a lack of nickel uptake by affected trees, even when there was an abundance of nickel in the soil. They found that even a severe case of mouse-ear could be corrected by a timely foliar application of nickel liganosulfonate.

Heavy metals such as zinc, manganese, iron, cobalt and copper compete with nickel for uptake channels in the feeder roots of the pecan tree. Additionally, lighter metals such as calcium and magnesium also act to indirectly limit nickel uptake. The researchers found that nickel deficiency had usually been induced by excessive soil or plant accumulation of other elements due to decades of fertilizer applications.

Wood assisted with determining the liquid formulation for NICKEL PLUS, which was developed by NIPAN, LLC. The formulation has now been approved by several state departments of agriculture as a fertilizer for correcting nickel deficiency problems.

The severe form of mouse-ear most commonly occurs in the southeaster Georgia sector of the U. S. pecan belt, but is also found throughout much of the Gulf Coast coastal plain.

From the Desk of . . . .

Many of you have been anticipating, asking, wondering, and guessing as to when I am going to retire. Well, I have made the decision to retire at the end of the year. This may come as a shock to some of you as I had intended to wait at least another year, but an opportunity has crossed my path that has caused me to speed up my plans. My plans are to become the assistant Chihuahuan Desert Garden curator at UTEP beginning with the first of the New Year. There probably will be a lag in filling my position; I cannot tell you when or how long this might take.

I do not plan on leaving you in a crunch so I will need your help in making sure that problems do not happen. We will discuss some of this at the next monthly meeting. The Master Gardener Program is doing well and will do well in the future if everyone will pull their weight with the program. We need to decide whether we want to host the 2008 New Mexico Master Gardener Conference. We need to set a date and start putting a program together. The alternative would be to put a program together for the general public at a separate time or just waiting it out. We will be following NMSU guidelines with the conference and the program.

I will be finishing out the new class of Master Gardener Interns in December and I have a graduation date of Saturday, December 15 set aside for our county graduation and recertification ceremony. Please set this date aside on your calendar.

I have truly enjoyed working with the Master Gardener Program throughout my 32 year extension career. It has been one of the highlights and one of the programs of which I have the fondest memories. I have met many truly remarkable people.

Horticulturally Yours,

John M. White

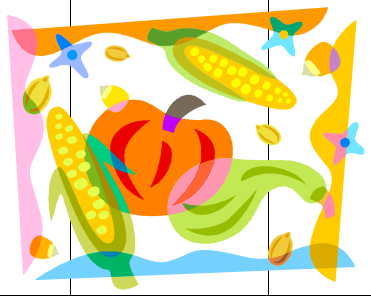
John M. White

Dona Ana County Extension Director and

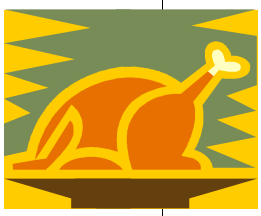
Agriculture Agent-Horticulture, Agronomy, 4-H and Adult

If you are an individual with a disability who is in need of an auxiliary aid or service to participate in an Extension activity, please contact John M. White at 505-6649 at least two weeks prior to the event.

October 2007

Sun	Mon	Tue	Wed	Thu	Fri	Sat
	1 SNMSF Ag Products Section & MG Exhibit SNMSF Fairgrounds Veterans Building Larry Dickson Kathi Barit Through Oct 7 ….	2 MG Telephone Hotline 9 am to 1 pm Extension Office John Hyndman SNMSF	3 SNMSF	4 2007 DAC MG Program Training 8:30am—3:30pm Extension Office John M. White SNMSF	5 MG Telephone Hotline 9 am to 1 pm Extension Office Alberta Morgan Pat Anderson SNMSF	6 SNMSF
7 SNMSF From Oct 1st Through October 7 Larry Dickson Kathi Barit	8 	9 MG Telephone Hotline 9 am to 1 pm Extension Office Carla Clouser Dee McNutt John Hyndman	10	11 2007 DAC MG Program Training 8:30am—3:30pm Extension Office John M. White	12 MG Telephone Hotline 9 am to 1 pm Extension Office Linda Fredrickson Dee McNutt	13
14	15	16 MG Telephone Hotline 9 am to 1 pm Extension Office Mary Vee Cammack Nancy Taylor John Hyndman	17 MG Newsletter Meeting 8 am to 9 am MONTHLY MEETING 9 AM TO 11 AM Extension Office John M. White	18 2007 DAC MG Program Training 8:30am—3:30pm Extension Office John M. White	19 MG Telephone Hotline 9 am to 1 pm Extension Office Dee McNutt Thomas Packard	20
21 	22	23 MG Telephone Hotline 9 am to 1 pm Extension Office Janie Elliot Sarah Wood Nancy Taylor	24	25 2007 DAC MG Program Training 8:30am—3:30pm Extension Office John M. White	26 MG Telephone Hotline 9 am to 1 pm Extension Office Pat Anderson Judy Picker John Hyndman	27
28	29	30 MG Telephone Hotline 9 am to 1 pm Extension Office Sharon Poindexter Dee McNutt Janie Elliot	31			

November 2007

Sun	Mon	Tue	Wed	Thu	Fri	Sat
				*1* 2008 DAC MG Program Training All Day Extension Office John M. White	*2* MG Telephone Hotline 9 am to 1 pm Extension Office Pat Anderson Alberta Morgan 2007 NM Pecan Field Day—All Day — NMSU Leyendecker Plant Science Center	*3*
4	*5*	*6* MG Telephone Hotline 9 am to 1 pm Extension Office Sarah Wood Juliet Williams	*7*	*8* 2008 DAC MG Program Training All Day Extension Office John M. White	*9* MG Telephone Hotline 9 am to 1 pm Extension Office Dee McNutt Ann Shine-Ring Linda Fredrickson	*10*
11	*12* Veterans Day Holiday Office Closed 	*13* MG Telephone Hotline 9 am to 1 pm Extension Office Dee McNutt Mary Thompson	*14*	*15* 2008 DAC MG Program Training All Day Extension Office John M. White	*16* MG Telephone Hotline 9 am to 1 pm Extension Office Yvonne Kinn Pat Anderson	*17*
18 	*19*	*20* MG Telephone Hotline 9 am to 1 pm Extension Office Mary Thompson	*21*	*22* 	*23* Office Closed	*24*
25	*26*	*27* MG Telephone Hotline 9 am to 1 pm Extension Office Yvonne Kinn Juliet Williams	*28* DAC MG Newsletter Meeting 8 am to 9 am MONTHLY MEETING 9 am to 11 am Extension Office John M. White	*29* 2008 DAC MG Program Training All Day Extension Office John M. White	*30* MG Telephone Hotline 9 am to 1 pm Extension Office Pat Anderson John Hyndman