



Master Gardener Newsletter

New Mexico State University
Cooperative Extension Service
US Department of Agriculture
College of Agriculture & Home Economics

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NEW PLANT-INSECT INTERACTION DISCOVERED

A new class of compounds has been discovered that should help shed more light on how plants respond to insect attacks. Agricultural Research Service (ARS) scientists with the Center for Medical, Agricultural and Veterinary Entomology (CMAVE) in Gainesville, Fla., along with colleagues at the Virginia Military Institute and the Pennsylvania State University, isolated the compounds from oral secretions of *Schistocerca americana* grasshoppers fed corn seedlings.

Plants, and the insects that feed on them, engage in a relationship involving many resultant hormonal and chemical changes in the plant, including induced production and emission of volatile organic compounds, or VOCs. These physiological changes, brought about by a group of compounds known as elicitors, vary – not only for different plants, but also with the insect species feeding on a plant. Understanding the plant-insect interaction is important in

crop science and insect pest management.

ARS chemist Hans T. Alborn, in CMAVE's Chemistry Research Unit, led the team that isolated the previously unidentified class of compounds. They named them caeliferins because preliminary analyses of oral secretions collected from several species of Orthoptera (grasshoppers, katydids and crickets) indicated that the compounds may be present in most, if not all, grasshoppers – members of the suborder Caelifera – but not in crickets or katydids in the suborder Ensifera.

The caeliferins that Alborn isolated have some unique properties, so they should provide new biological tools and directions for exploring the physiological ecology of, and interactions between, insects and plants. Interestingly, the pattern of caeliferins may determine whether *S. americana* grasshop-

pers are solitary or gregarious. If so, the compounds may be found to influence swarming behavior of locusts.

The CMAVE scientists study elicitors of plant volatile releases to find ways to induce defensive responses to help crop plants under insect attack remain healthy and vigorous. It's well known that insect chewing may induce release of plant VOCs that summon natural enemies of the attacking insects. But insects' oral secretions may also provoke direct plant defenses that impair the pests' performance.



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MG MEETING
ON
SEPTEMBER 19, 2007

Please Attend!

Goathead Gold Mine: Noxious Weed Valued By Some As Useful Medicinal Herb

ALCALDE - What is seen as a noxious weed by many can now be turned into a cash crop.

The seed pod of *Tribulus terrestris*, commonly known as goatheads, puncture vine or toritos, is readily available to the industrious soul to market to Chinese medicine practitioners.

"This plant, commonly considered a noxious weed, is a useful medicinal herb in Chinese and Western medicine," said Charles Martin, New Mexico State University researcher working at the Sustainable Agriculture Science Center in Alcalde. Martin is collecting the pods as part of an herb economic development program.

Martin is buying the pods from 4-H clubs and other youth groups across the state to be included in sample packs that are to be distributed by the Medicinal Herb Consortium, directed by medicinal herbalist Jean Giblette of High Falls Gardens in Philmont, N.Y. The consortium of herb grower associations in five states, including New Mexico, makes domestically grown or wild-harvested plants used in oriental medicine available to acupuncturists and practitioners through a sample pack of about 35 herbs. *Ci ji li* - the Chinese name for the plant known in New Mexico as goathead - is one of them.

"The packets are to let Chinese medicine practitioners know the quality of herbs that are available from American farmers," Giblette said. "Charles Martin has been supplying us *Tribulus terrestris* for a couple of years."

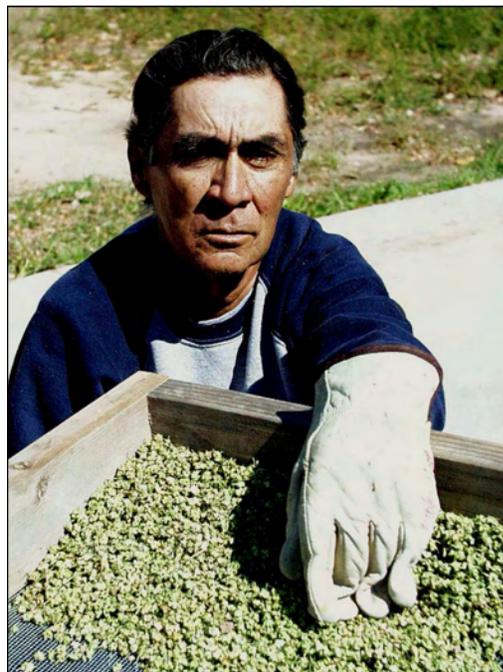
To stimulate an interest among New Mexicans in providing the herb, Martin is encouraging 4-H clubs and other youth groups to collect and dry the pods. Goathead season is at its peak now as the tiny yellow blossom turns into a green pod, which is what herbalists like to use in various Chinese medicine formulas.

"This is a great opportunity for kids to earn some cash for school and to learn about underutilized plant species," Martin said. "Puncture vine or goathead is just one of many plants we consider to be weeds that have medicinal properties and therefore could be cash crops if more people just knew about them."

The right time to pick the goathead pods is when it is in its green, ripe stage, not brown, over-ripe or moldy. "Not when it is a woody sticker that attaches itself to anything it comes in contact with, including shoe soles or bicycle tires," he said, adding that the large whole pods are preferred.

Giblette said *Tribulus terrestris* is listed in the "Divine Farmer's Materia Medica," the oldest record of herbs used as medicinals in China. The book includes a wealth of historical information about early descriptions and usages of approximately 300 Chinese herbs. The ancient publication was created by Shen Nong, the Divine Farmer, who legend says, taught his country about agriculture and medicinal herbs. Giblette said the ground, dried goathead pod is included in many of the Chinese medicine formulas used to address pathogenic changes in internal organ functions.

The use of *Tribulus terrestris* as a dietary supplement became recognized in Western countries after the 1988 Olympics in Seoul, South Korea, where it was revealed that the gold medal weightlifting team from Bulgaria



had used the herb for a natural endocrine system stimulant to boost testosterone production and thus increase their muscle mass. It boosts the endocrine system in both men and women.

"You see it on the market at health food stores selling for around \$20 for a bottle of 60 capsules," Martin said. "That's why I am encouraging people to collect this plant as a cash crop. This is just one of many under-utilized plants we are trying to develop into a product with economic value. It's a matter of raising people's awareness to the potential that is out there."

For more information on collection, drying, quality control, grading and criteria for packaging, contact Martin at (505) 852-4241 or email cmartin@nmsu.edu



Happy Birthday!!!

September 4
Yvonne Kinn

September 6
PJ Schabacker

September 13
Barbara Sallach

September 14
Peggy Hoffman

September 17
Dana Baker

September 28
Franklin Simon



September Garden Tips By Ann Fair

There are a number of bulbs you can buy to plant in the fall for spring blooming: daffodils, tulips (hybrid tulips will die out after a few seasons), lilies, snowdrops, crocus, and hyacinth. All of these fall bulbs can be left in the ground for years. They do not need to be dug up in the fall, unlike bulbs planted in the spring that bloom in the summer. They should, however, be divided periodically. When you buy bulbs, buy them big, regardless of the type. If the bulbs are slightly mushy, soft or dried up, don't buy them. Buying bulbs on sale might be risky, too.....especially if they're small.

Transplant or divide peonies if necessary.....peonies hate to be moved. Transplant and/or divide spring and summer-blooming perennials (but not fall perennials).

Plant new perennials and annuals. Pansies, violas, and mums are good for fall color. By this time, you're probably getting tired.....go in for a nap and continue your duties manana! However, first divide daylilies and plant ground covers.

TREES AND SHRUBS: Plant or transplant evergreens from one location in the garden to another before freezing weather. Root prune now and move the plant later in the winter. Now is a good time to plant new trees and shrubs. Harvest pears before they ripen on the tree. (Pears picked with a slight blush have a better flavor).... Do not fertilize trees and shrubs with high nitrogen now.

ROSES: September is a strange month to give "care" instructions. The books seem to differ when it comes to recommending what to do in September.....It appears to be still hot enough in that month to continue to water every three to five days in the hottest areas and weekly in the cooler areas.

When it comes to grooming in the warmest areas, prune roses lightly. The rose bushes in our area are FULL of blossoms at the present time. In the warmest areas, prune

roses lightly. In other areas, wait until the temperatures are much lower. and then begin pruning. If you want rose hips, stop deadheading and let rose hips form. In the next month or two, the rose plant will begin to harden off for the winter.

LAWN: Regular watering..... Warm season grasses need their final nitrogen feeding this month. If you want to overseed your Bermuda lawn with perennial rye grass or re-seed your cool season lawn grasses, do it from Sept 15 to October 1.

KITCHEN GARDEN.....Continue harvesting cucumbers, beans, zucchini, and other veggies from the garden.... Continue to fertilize lightly for continued plant growth and production. Now is a good time to plant seeds or transplants of cool season vegetables. Be sure to read about their seed to harvest time, in order to have them ripen at the right time. Harvest garlic. Save some of the ripest cloves for replanting in October.....Harvest and dry herbs.

Provide a long, deep watering of vegetable or herb beds once during the month to leach out salts and restore deep soil moisture. This is especially critical if the late summer rains have been inadequate. As the temperatures decline, adjust watering schedules for perennial herbs to every four to five days. Continue to water vegetables daily.

If you don't have an inside herb garden during the winter, cut the outdoors herbs in mid-morning to help preserve the flavors in the herbs. Trim off up to one-third of the plant to use for drying. Don't chop the herbs up before drying and use the garage method. You can also dry herbs in a cool oven by layering the leaves (not touching) between layers of paper towels. The light in the oven should be enough to dry the herbs out overnight. Store herbs in airtight containers away from heat and away from light.

The Kitchen Garden - Revisited

“Simply put, a kitchen garden is a place to grow things that you bring into the kitchen—vegetables, fruits and berries, herbs, edible flowers and cut flowers. It is a place of beauty and bounty, a place that stimulates and delights all the senses. The perfect blend of aesthetics and utility, the

kitchen garden is a paradise where you can not just look, touch, and smell, but also taste.” Carol Turner in Kitchen Gardens

My own kitchen garden has become more than a vegetable patch, more than an herb bed or a flower garden – it has become, well, a personal space where I find food, flavors, colors, and beauty in an intentional and accidental collection of nature’s creatures. It’s more a place to forage than to harvest, more a place to experiment and wonder than to sow and reap. It has become my eclectic assemblage of nations and histories, some ancient, some heirloom, some wondrously new.

If beauty is in the eye of the beholder, my garden may look utterly disheveled to others. If you like straight and orderly rows of uniform plants, it may take you time to see the beauty in my kitchen garden where seeds germinate beneath plants ready to be eaten. It may take your eye a while to adjust to the wondrous cycle in a bed of European Leeks and South American Lima Beans – an intercontinental dance round the seasons – one warm, one cool. It may take a while to notice seedlings of lettuce, sorrel, spinach beet, swiss chard, mountain orach, giant red mustard, carrots and bachelor buttons sprouting up through a green mulch of dwarf white clover. Most will be salad before their youth is spent, but a few will flower and seed the bed again.

Cooking has become an extension of gardening as gardening has become a necessity for eating. What’s for dinner is often determined by what’s in the garden. Recipes are invented to fit the garden, the seasons and our tastes. Some things are preserved, but there’s never enough as much of what the garden provides cannot be bought. So, we wait until the season comes round again. I’ve grown to appreciate this seasonal eating - appreciating the memory of tastes discovered and revisiting those tastes in their season. There’s something delicious about waiting for old favorites and new discoveries that may become old favorites.

For centuries folks have lived on the land in this way - knowing the seasons and the cycles of plants. Watching the interactions of plants and animals and influencing them to benefit the harvest. Observing and selecting preferred plant for replanting in thousands of places, for thousands of years has yielded thousands of varieties fit for both garden and hearth. It’s an ancient practice passed from generation to generation.

This most ancient of agricultures appears to be re-emerging in North America. The Canadian Government has encouraged and supported it for over 25 years. The U.S. government is beginning to take steps in that direction and many local organizations are working to revitalize the practice of “growing your own” with education centers, demonstration gardens, workshops and community gardens, schoolyard gardens, virtual gardens and a world wide web of suppliers and advisors. And in some communities the Extension Services and their Master Gardeners are in the forefront of this new old way of naturally feeding ourselves from the bounty of the earth.

I wrote this article in February of 2005 as a Master Gardener Intern – it was one of the first of many and my way of sharing my gardening passions and explorations with other Master Gardeners. I have written mostly from my own gardening experience and about food – both on the table and in the community. I realize now, some 30 articles later, that writing has informed my gardening, as much as my gardening has informed my writing. Gardening with an eye for what might be useful to others enriches all Master Gardeners and those who we serve.

As kitchen gardening brings taste and nourishment to the shared table, sharing your gardening passions and knowledge with others brings nurturing and growth to our gardening community.

While Master Gardeners continually provides opportunities for sharing and serving, the training and internship period is the fertile field specially prepared for your growth and development – the beginning of a journey.

Darrol Shillingburg – Master Gardener
September 2007

Authors note: all of the articles are available in the Master Gardener sections of my website: www.darrolshillingburg.com.

NEW ONLINE HELP FOR MANAGING WHITEFLIES

Tiny, sap-sucking whiteflies — and the diseases they often spread — cause some of the world's worst crop problems and are responsible for enormous losses every year. Now an online resource has been developed to help growers afflicted by the pests.

Agricultural Research Service (ARS) scientists in the agency's Subtropical Insects Research Unit (SIRU), including entomologist Cindy McKenzie — in collaboration with the University of Florida, the University of California, the University of Georgia, Texas A & M University and Cornell University, and endorsed by industry groups such as the Society of American Florists, American Nursery & Landscape Association and the IR-4 Project — have developed a website with extensive information about whitefly management. SIRU is part of ARS' U. S. Horticultural Research Laboratory in Fort Pierce, Fla.

Whiteflies are found throughout the tropics and subtropics, but can be troublesome in greenhouses and other growing environments as well. Both immature and adult stages ingest plant sap and cause damage directly, by feeding and transmitting plant viruses, or indirectly, by excreting a sticky substance called honeydew onto leaves and fruit. Sooty mold fungi colonize the contaminated surfaces, further interfering with photosynthesis and ultimately resulting in reduced quality of fruit and fiber. In addition to ornamentals, whiteflies attack cassava, cotton, sweet potato, legumes and many other vegetables grown in mixed or annual cropping systems.

Called "Management Program for Whiteflies on Propagated Ornamentals With an Emphasis on the Q-biotype," the comprehensive online resource can be accessed at: <http://www.mrec.ifas.ufl.edu/LSO/bemisia/bemisia.htm>

Among the many topics covered at the

website are the importance of crop hygiene, pre- and post-planting practices and insecticide recommendations. Also stressed is the need to control whiteflies early, before they spread to neighboring fields.

Proper use of insecticides is important for whitefly management, particularly with respect to avoiding development of insecticide resistance in whiteflies. The online guide recommends that insecticides be rotated between chemical classes and should be applied a minimum of two times, at a five- to seven-day interval, to allow for egg hatch between applications and ensure that adults, nymphs and newly hatched individuals are all killed.

Banana Cake Recipe

1/2 Cup Margarine or Butter

1 1/4 Cup Sugar

2 Eggs

1 tsp Baking Soda

4 Tbsp Sour Cream

1 Cup Sifted Flour

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.

From the Desk of

The fall season is finally upon us and our new class of *Master Gardeners* has started. The new class is about 20 in number with people of various backgrounds, including a *MG* from out of state. I look forward to working with this class. Greetings and encouragement from you will go a long ways with the new interns.

Barbara Arispe is trying to get the final volunteer hours pulled together for 2007. The NMSU program year ends September 30th and I need to put together a report on the *MG* Program for 2007. Please get all volunteer sheets turned into Barbara by October 1st. Volunteer hours worked past that point will count on next years program, unless you need the hours for graduation/certification. If so, you need to contact Barbara real soon.

Don't forget the *MG* Plant Sale on September 15th at the LC Downtown Mall. If you have any plants to donate, contact Barbara Sallach immediately. If you have signed up to work, be sure to confirm your hours with Barb. We will need to sell plants, but we are also there to help our clientele. Dress appropriately and be ready to answer gardening questions. We will need to document our efforts more closely. I imagine we will have a very busy Saturday!

On a sad note, Deming Master Gardener, Mary Jo Irber, passed away recently. She was trained here in Dona Ana County and put most of her time in at the Rockhound State Park in Deming. A memorial potluck dinner is to be held at 6:00pm at the State Park in Deming.

Remember that September is the start of probably the best weather that Las Cruces receives during the year. The next couple of months will be the reason that many of us call Las Cruces home. Now is the best time to get your garden fixed up, redesigned, renovated, and cleaned-up. If you want to add new plants to the garden, now is the best season to do it in.

Next meeting is September 19, 2007.

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.

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September 2007



Sun	Mon	Tue	Wed	Thu	Fri	Sat
						1
2	3	4 MG Telephone Hotline 9 am to 1 pm Extension Office Marti Taylor Mary Thompson	5	6 2008 MG Program Training 8:30 am to 3:30 pm Extension Office John M. White	7 MG Telephone Hotline 9 am to 1 pm Extension Office Alberta Morgan Dee McNutt	8
9 Harvest Days Celebration 10 am to 4 pm NM Farm & Ranch Museum John M. White	10	11 MG Telephone Hotline 9 am to 1 pm Extension Office Pat Sanders Craig Severy	12	13 2008 MG Program Training 8:30 am to 3:30 pm Extension Office John M. White	14 MG Telephone Hotline 9 am to 1 pm Extension Office Ann Shine-Ring Dee McNutt	15 MG PLANT SALE LC Downtown Mall 7 am to 12:30 pm Barb Sallach John M. White
16	17	18 MG Telephone Hotline 9 am to 1 pm Extension Office Carla Clouser Dana Baker	19 MG Newsletter Meeting 8 am to 9 am MONTHLY MEETING 9 am to 11 am John M. White	20 2008 MG Program Training 8:30 am to 3:30 pm Extension Office John M. White	21 MG Telephone Hotline 9 am to 1 pm Extension Office Pat Anderson Mary Vee Cammack	22
23 	24	25 MG Telephone Hotline 9 am to 1 pm Extension Office Sharon Poindexter Dee McNutt Janie Elliot	26	27 2008 MG Program Training 8:30 am to 3:30 pm Extension Office John M. White	28 MG Telephone Hotline 9 am to 1 pm Extension Office Bonnie Eisenberg Edna Lucero Barb Sallach	29
30						



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 OPEN/VACANT 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 Pat Sanders	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 OPEN/VACANT	13
14	15	16 MG Telephone Hotline 9 am to 1 pm Extension Office Mary Vee Cammack Nancy Taylor	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	20
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28	29	30 MG Telephone Hotline 9 am to 1 pm Extension Office Sharon Poindexter Dee McNutt	31			