



September-December 2013

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Wrapping up the Year

2013 has been a busy year with a 18 weeks of training, graduating a new class, new committees and lots of community outreach events and festivals. I sat on the new statewide program rep hiring committee along with my standing committees that I have been part of for quite a while. (AgVenture, Ag in the Classroom, Statewide MG Steering committee and the Statewide MG Conference committee). The Master Gardener office was busy as always with lots of 2013 MG graduates taking their shot at the hotline desk. We were at more farmers' markets this year than we have been at in the past and had great turnouts at our weekend workshops. We have a few events left in November and office days in December that will be filled with volunteers. 2014 will be a busy year with our regular events, the statewide master gardener conference and wrapping up volunteer hours. All of these events happen because of the dedicated volunteers that make up our program. I can honestly say I appreciate all of you and the extra mile you go to make this program one of the best in the state. Thank you for your support, dedication and smiling faces that make coming to work each day enjoyable! My last day in the office will be December 20th and I'll be returning January 6th, so don't expect too many emails from me. In case you missed my announcement I'll be out of the office for a few weeks next spring.

Sousa family portrait: Johnny, Marcy, Chloe, John and baby Sousa



MG Office Overhaul



The MG office is due for a remodel and some organization and that is exactly what it will be getting now that the year has slowed down quite a bit. Since this is your office I'm looking for suggestions on how to improve it. I already have some ideas on organization, furniture set up, and space saving that I plan on implementing but really want to make it as user friendly as possible so send me any ideas you may have. What is on your wish list for the office? I plan on taking the file cabinet out since we do not need it and will be looking for a skinny table to bring in to look at samples—since there is no room on that desk! The bookshelves will be getting an overhaul as well. I'm looking forward to your suggestions and ideas!



What is covering this branch? Find the answer on page 7



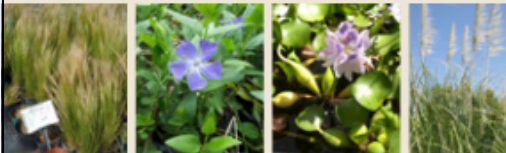
Spring Nursery Survey Results

INVASIVE PLANTS IN 2013 SURVEY

SCIENTIFIC NAME COMMON NAME

EXISTING SPECIES ON PLANTRIGHT'S LIST:

| | |
|--------------------------------------|-----------------------|
| <i>Arundo donax</i> | Arundo, giant reed |
| <i>Arctotheca calendula</i> | Capeweed |
| <i>Carpobrotus edulis</i> | Highway iceplant |
| <i>Cortaderia jubata</i> | Jubata grass |
| <i>Cortaderia selloana</i> | Pampas grass |
| <i>Cytisus scoparius</i> | Scotch broom |
| <i>Cytisus striatus</i> | Portuguese broom |
| <i>Elaeagnus angustifolia</i> | Russian olive |
| <i>Eucalyptus globulus</i> | Blue gum |
| <i>Genista monspessulana</i> | French broom |
| <i>Mesembryanthemum crystallinum</i> | Crystalline ice plant |
| <i>Myoporum laetum</i> | Myoporum |



Left to right: Mexican feather grass, periwinkle, water hyacinth, and pampas grass

NEW SPECIES UNDER REVIEW FOR PLANTRIGHT'S LIST:

| | |
|---------------------------------|-----------------------|
| <i>Nassella tenuissima</i> | Mexican feather grass |
| <i>Iris pseudacorus</i> | Yellow water iris |
| <i>Eichhornia crassipes</i> | Water hyacinth |
| <i>Butomus umbellatus</i> | Flowering rush |
| <i>Pitiosporum undulatum</i> | Victorian box |
| <i>Schinus terebinthifolius</i> | Brazilian peppertree |

PlantRight works with California's nursery industry to voluntarily stop the propagation, distribution, and sale of ornamental invasive plants. In addition, PlantRight promotes alternative plants that are regionally appropriate, commercially viable and environmentally safe. PlantRight randomly selected 311 retail nurseries to survey in 2013, from a total pool of over 3,000 stores operating across California. One-hundred thirty-six volunteers, many of whom are UC Master Gardeners, surveyed 223 of these nurseries in 38 counties. Data was collected on the availability of 18 known invasive plants (see list at top right). Six of these 18 plants were new to the survey this year, and are under review as potential additions to PlantRight's official list. Twelve of the 18 were also tracked in the 2011 and 2012 PlantRight surveys and, except where noted otherwise, the below results represent only these 12 plants. The results also reflect only the plants that were found in climate zones where they are considered invasive.

- 74% of the nurseries were not selling invasive plants. Of the stores selling invasive plants, most (67%) sold only one type of invasive. This is similar to what was found in 2011 and 2012, and should be thought of as essentially stable over the last three years.

- As was the case in 2012, Independent Retailers are the most likely type of store to sell an invasive species. However, the percentage of Independent Retailers selling an invasive species dropped from 39% in 2012 to 29% in 2013.

- Mexican feather grass (*Nassella tenuissima*), one of the plants under review, was the most commonly found plant, followed by big leaf periwinkle (*Vinca major*). These were found at 27% and 19% of stores respectively.

MG Spotlight—Nadia Zane, 2013



Nadia is a landscape designer and specializes in CA native and Mediterranean species. She is a member of the California Native Plant Society and loves to volunteer at the Sacramento chapter's nursery, Elderberry Farms.

She started out her career training in Washington state to be a music teacher, then immediately after getting her teaching certificate she became a chef-in-training and then worked as a sous chef for five years. She moved back to California in 2011 to be with her mom

when her dad died.

Due to food allergies she prepares everything she eats from scratch. "I like to think of my current cooking style as uni-ethnic".

She is self proclaimed as the "world's laziest gardener", which is part of the reason she got into native plants. Putting new plants in the ground is her favorite gardening activity; gotta love instant gratification!

Besides gardening she enjoys cooking, pilates, and geeking out on various science-related topics. Everyday she chases her cat

around the house, which she loves!

She has been to England, France, Japan, Australia, and New Zealand. France and Japan were her favorites, mostly because of the food. She has recently developed a strong love for California that she didn't have growing up; "I plan to explore the state more".

Nadia and Julie Schardt put together a presentation on gardening with native plants for the Smart Gardening Conference that was a huge hit!

Hints and Tips

Check out the UC IPM YouTube Channel. [Click here](#) to watch 1 of more than 25 videos they have created so far.

Mistletoe Control

Farmer Fred Hoffman—From the [Farmer Fred Rant](#)

Kissing beneath a sprig of mistletoe hung in the house is a popular Yuletide tradition. Not far behind: muttering obscenities under your breath, while looking up into a backyard tree filled with this energy-sapping pest that clings - and sucks the life from - infected branches.



Although it may look harmless hanging in your hallway this time of year, mistletoe in trees is slowly killing your source of summertime shade. Healthy trees can tolerate a few mistletoe branch infections, but individual branches may be weakened or sometimes killed. It may take years to kill a tree; in the meantime, mistletoe adds another burden to a tree suffering from drought or disease, hastening its demise. Susceptible trees in California to this evergreen, parasitic plant include alders, Aristocrat flowering pear, ash, birch, box elder, cottonwood, locust, silver maple, walnut, and zelkova.

Mistletoe does its damage by sprouting root-like structures (called haustoria) which enters the growing tissues of limbs, robbing the tree of water and nutrients. It is spread mainly by your local neighborhood birds who carry the sticky mistletoe seeds to trees in newer residential areas from old trees along stream banks and from established neighborhoods and parks.



The small, sticky, whitish berries are produced from October to December. In addition, seeds may fall from mistletoe plants in the upper part of the tree, creating new infestations on the lower branches. The rapidity with which mistletoe spreads is directly related to the proximity and severity of established infestations, and newly planted trees can be quickly infested if they are growing near old, heavily infested trees.

Removing and controlling mistletoe this time of year is not an easy task. Usually its located high up in trees, reachable only by birds, squirrels and junior high schoolers. But instead of arming your fearless 12 year-old with a pruning saw, it's safer to hire a reputable tree service to do the branch removal. "Reputable": [an arborist who is certified, bonded, insured.](#)

Prune out infected branches, if possible, as soon as the mistletoe appears. Using thinning-type pruning cuts, remove infected branches at their point of origin or back to large, lateral branches.

If you're doing your own pruning, try to remove more than just the mistletoe; cut off the suffering limb one foot or more below the point of mistletoe attachment. Done properly, limb removal for mistletoe control can maintain or even improve tree structure.

However, even if all you can reach is the mistletoe itself, it is better to remove that than to do nothing at all. It will take several years for the mistletoe to get back to a size where it will produce seeds. After removing the mistletoe, try wrapping that area of the tree branch with black plastic. That will help stop any resprouting. But you may have to replace the black plastic on a regular basis; it's the lack of light that keeps the mistletoe from regrowing.

Chemical controls that contain the plant growth regulator ethephon, such as Monterey's [Florel](#), may provide some mistletoe containment. [The University of California's Integrated Pest Management website](#) says that for the Florel to be effective, the spray must thoroughly wet the mistletoe foliage. The ideal time to treat is in spring as temperatures begin to warm, but before the tree begins to grow new leaves. Daytime temperatures must be above 65 degrees (F) for good results. Spray only the individual mistletoe plants, not the entire tree. By treating when trees are dormant, the tree foliage will not get in the way of the treatment and the mistletoe is more visible than when leaves are on the tree. However, this spray may only provide temporary control and mistletoe may soon regrow at the same point.

The most effective means of mistletoe control? Chop down that infected tree and plant a mistletoe-resistant tree, such as the Chinese pistache, crapemyrtle, ginkgo, golden rain tree, London plane tree, sycamore or a conifer such as a redwood or deodar cedar. For more information on controlling mistletoe, [click here](#).

Amaryllis Quick Tips

Planting Period: October until the end of April.

Flowering Period: Late December until the end of June.

Flowering time is 7-10 weeks.

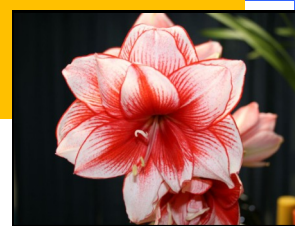
Larger bulbs produce more flowers.

Always store un-planted bulbs in a cool place between 40-50 deg. F.



Amaryllis Planting and Care

Amaryllis Bulb Company

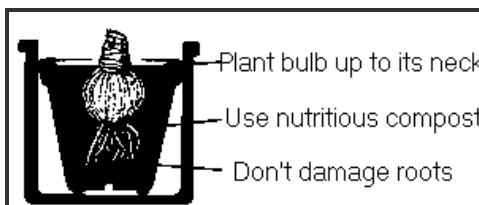


Amaryllis have become increasingly popular holiday gift plants, undoubtedly because the bulbs bloom very freely indoors and they are affordable. The large, showy flowers make a bold statement and are available in an increasing variety of colors, shapes, and sizes that fit almost any taste.

Of all flowering bulbs, amaryllis are the easiest to bring to bloom. This can be accomplished indoors or out, and over an extended period of time. The amaryllis originated in South America's tropical regions and has the botanical name Hippeastrum. The large flowers and ease with which they can be brought to bloom make amaryllis popular and in demand worldwide. The amaryllis comes in many beautiful varieties including various shades of red, white, pink, salmon and orange. There are also many striped and multicolored varieties, usually combining shades of pink or red with white.

Preparation for Planting

The base and roots of the bulb should be placed in lukewarm water for a few hours. Remember, if you cannot plant the bulbs immediately after receiving them, store them at a cool temperature between 40-50 degrees F.



Planting

Plant bulbs in a nutritious potting compost, many are available pre-mixed. Plant the bulb up to its neck in the potting compost, being careful not to damage the roots. Press the soil down firmly to set the bulb securely in place after planting.

Placement and Watering

Plant the bulb, or place the potted bulb in a warm place with direct light since heat is necessary for the development of the stems. The ideal temperature is 68 to 70 degrees F. Water sparingly until the stem appears, then, as the bud and leaves appear, gradually water more. At this point, the stem will grow rapidly and flowers will develop after it has reached full growth.

Flowering Period

Bulbs will flower in 7-10 weeks as a general rule. In winter the flowering time will be longer than in spring. Set up your planting schedule between October and April with this in mind. To achieve continuous bloom, plant at intervals of 2 weeks for stunning color in your home or garden.

After-Bloom Care: After the amaryllis has stopped flowering, it can be made to flower again. Cut the old flowers from the stem after flowering, and when the stem starts to sag, cut it back to the top of the bulb.

Leaf Growth and Development. Continue to water and fertilize as normal all summer, or for at least 5-6 months, allowing the leaves to fully develop and grow. When the leaves begin to yellow, which normally occurs in the early fall, cut the leaves back to about 2 inches from the top of the bulb and remove the bulb from the soil.

Bulb Storage. Clean the bulb and place it in a cool (40-50 deg. F), dark place such as the crisper of your refrigerator for a **minimum of 6 weeks.** **Caution:** Do not store amaryllis bulbs in a refrigerator that contains apples, this will sterilize the bulbs. Store the bulbs for a minimum of 6 weeks.

Plant Again. After 6 weeks you may remove bulbs whenever you would like to plant them. Plant bulbs 8 weeks before you would like them to bloom.

Planting Landscape Trees—A Few Fall Reminders

Karrie Reid

Choosing a tree that is suited to its site is the first step to a long-lived, healthy tree. Consideration must be given to the climate, the soil, the size of the root zone, the availability of water and sun, and the proximity to buildings, pavement, utility lines and other plantings. Is flowering desirable, or is the litter a nuisance? Would fall color be an asset; are allergies a consideration? You should also decide if you want shade in summer only, or a year-round barrier to sun and wind. A useful site for **selecting a tree by attribute** is [Cal Poly's SelectTree](#). Or use the tree lists under the publications section of the main Trees page.

Proper planting STARTING OUT RIGHT

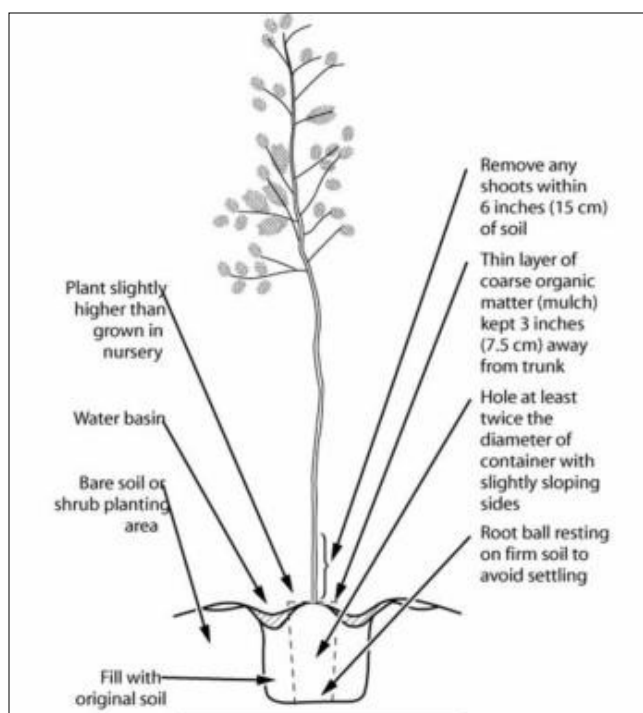
Proper planting is critical to the survival and long term health of your trees. You should **inspect** your trees in the nursery or upon delivery to your site, and refuse stock that is not healthy, well-rooted, and lacking in girdling roots in the trunk area. Use the following guidelines to direct your selection:

[Specifications for Nursery Tree Quality](#)

PLANTING

The planting hole should be 2-3 times as wide as the original container and only as deep. Amending the planting soil is not recommended for trees, as the roots quickly outgrow the planting hole. The top of the root ball should be slightly above soil level when finished back filling to allow for settling of the freshly dug soil. The tree crown below the soil level is a recipe for root rot as water collects next to the trunk after irrigation or rainfall. Trees should not be staked if they can stand without it, unless they are in a high wind area and likely to grow crooked before their trunks harden.

Download a free guide here: [Planting Landscape Trees](#).



WATERING When trees are first planted, a berm can be erected around the base to provide targeted water to the developing roots. However, it should be sloped within the raised border to keep water away from the base of the tree. It must be removed after the first year as the roots will have outgrown the size of the well and water should be more widely applied to encourage continued expansion of the roots.

May I Introduce...The Syrphid Fly

Syrphid flies are regularly found where aphids are present in agricultural, landscape, and garden habitats. Adults of this stingless fly hover around flowers, have black and yellow bands on their abdomen and are often confused with honeybees. Syrphid flies undergo complete metamorphosis with 3 larval instars. Females lay their whitish to gray oblong eggs, each measuring 1 mm (1.32 inch), singly on their sides usually near aphids or within aphid colonies.

Adult syrphid flies feed on pollen and nectar, while it is the larval stage that feeds on insects. Larvae of predaceous species feed on aphids and other soft-bodied insects and play an important role in suppressing populations of phytophagous insects. Larvae move along plant surfaces, lifting their heads to grope for prey, seizing them and sucking them dry and discarding the skins. A single syrphid larva can consume hundreds of aphids in a month. Not all syrphid fly larvae are predaceous, some species feed on fungi. For more info, [click here](#).



UC Statewide IPM Project
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Did you know... You can hover your mouse over anything that is blue and underlined and by clicking on it you will be directed to a webpage with more information about that subject! Try it!!



Are you reading this newsletter? I put a lot of time into these newsletters so I decided to create a quiz for each edition. I'll select 2 random winners at the November monthly meeting. There will be a grand prize winner for the 2014 Statewide MG conference registration (lodging not included) for all that participate in the quizzes. Good Luck! [Click here to find the quiz.](#)

Cool Tools! New Features on UC IPM Web-site

Invertebrate pests have [new menus](#) and a new [comprehensive index](#), making it much easier to find information on a specific pest. These link not only to information in the Pest Notes li-

brary, but to all UC IPM information on these pests. The IPM department has been busy adding videos to their YouTube Channel. In October 3 new videos

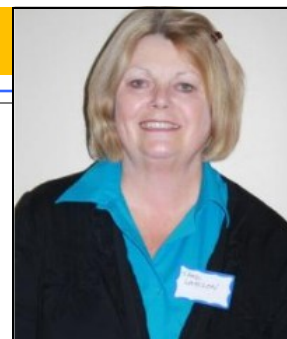
were added on identifying and managing [yellowjackets and other wasps](#) around the home. For the complete list of videos [click here](#) or follow on YouTube.

Insects, mites, mollusks, nematodes

Choose a button or view a list of [ALL INVERTEBRATE PESTS](#).

| | | |
|--|--|--|
| Ants Household & outdoor ants, carpenter ants, fire ants | Aphids, scales, & thrips Also whiteflies, mealybugs, psyllids, and hoppers | Arachnids Spiders, mites, ticks, & scorpions |
| Bees & wasps Honey bees, carpenter bees, wood wasps, yellowjackets, hornails | Beetles Leaf beetles, grubs, woodborers, weevils, pantry pests | Beneficials Natural enemies of plant pests such as predators and parasites |
| Caterpillars Larvae of butterflies & moths | Earwigs & grasshoppers Also cockroaches, crickets, katydids, and stick insects | Flies & mosquitoes Fruit flies, house flies, maggots, leaf miners, gnats |
| Household pests Pests of homes, structures, people, & pets | Snails & soil-dwellers Slugs, centipedes, nematodes, pill bugs, springtails | True bugs Stink bugs, plant bugs, lace bugs |

MG Spotlight— Sandy Larson, 2011



Sandy is a full time Realtor in Manteca and lives in Woodbridge by Del Webb. She is married to Butch and has 2 adult children, 7 grandchildren. Three of them are currently in college. She grew up in San Lorenzo and moved to the Central Valley from Castro Valley 6 1/2 years ago.

She is the former Vice-President and President of Manteca Garden Club. Sandy writes gardening articles monthly for the Woodbridge newspaper and co-organized the first two Garden Tours at Woodbridge.

When it comes to food she loves Dave Wongs in Stockton or Hana Japan in Dublin.

Out in the garden you can find her around anything that has a scent or is a flower. She likes the challenge of planting something that doesn't do well in our climate and succeeding at it.

When she's not in the garden she enjoys spring training and fall baseball with her hubby at their condo in Arizona. She also enjoys spending time with children and grandchildren and enjoys decorating.

She enjoys travelling to Europe, Canada, Hawaii.

They would love to go to Scandinavia as she and her hubby Butch are both of Swedish decent.

Sandy has helped out with the Smart Gardening Conference and served as a docent at the Garden Tour two years ago.

Life Below the Surface

There is more life below the soil surface than there is above. This includes the burrowing animals such as moles and earthworms. Many soil creatures are not much bigger than the head of a pin. They include mites, springtails, nematodes, virus, algae, bacteria, yeast, actinomycetes, and protozoa. There are about 50 billion microbes in 1 tablespoon of soil. A typical soil may contain the following estimated number of organisms in each gram of soil:

| | |
|---------------|--------------------------|
| Bacteria | 3,000,000 to 500,000,000 |
| Actinomycetes | 1,000,000 to 20,000,000 |
| Fungi | 5,000 to 1,000,000 |
| Yeast | 1,000 to 1,000,000 |
| Protozoa | 1,000 to 500,000 |
| Algae | 1,000 to 500,000 |
| Nematodes | 10 to 5,000 |



Soil Nematode

1 gram of soil is the approximate weight of a standard paper clip.

As soil life forms move through the soil they create channels that improve aeration and drainage. Nematodes and protozoa swim in the film of water around soil particles and feed on bacteria. Mites eat fungi; fungi decompose soil organic matter. The microorganisms' primary role is to break down organic matter to obtain energy. They help release essential nutrients and carbon dioxide, perform key roles in nitrogen fixation, the nitrogen and phosphorus cycles, denitrification, immobilization and mineralization. Microbes must have a constant supply of organic matter or their numbers will decline. Conditions that favor soil life also promotes plant growth.

When the soil is tilled and left bare, soil life can be injured by high temperatures. To promote soil organisms; incorporate organic matter, till as little as possible, minimize soil compaction, maintain favorable soil pH and fertility, and use an organic mulch on the soil surface.

What's Wrong Answer– Cottony cushion scale (from page 1)

Cottony cushion scale, *Icerya purchasi*, can infest a number of woody ornamentals and certain crops.

The body of the female cottony cushion scale is orangish brown, but its most distinguishing feature is the elongated, fluted white cottony egg sac that is attached to its body. The egg sac contains 600 to 800 red eggs and may become two to three times as long as the body of the female; the resulting length of the female plus the egg sac can be almost 1/2 inch.

Cottony cushion scale has two to three generations a year. Unlike most other scales, it retains its legs and its mobility throughout its life.

Like other scales, cottony cushion scale decreases the vitality of its host by sucking phloem sap from the leaves, twigs, branches, and trunk. Feeding can result in defoliation and dieback of twigs and small branches when infestations are extremely heavy (Figure 7). Heavy populations can severely reduce the yield of citrus trees. Like soft

scales, cottony cushion scale excretes honeydew, which is usually accompanied by blackish sooty mold growth and ants. For more information, [click here](#).



UPL Project
SUNY University of California

Compost Tea

Steven Swain, UCCE Sonoma and Marin Co.

The fundamentals of compost tea are very simple: it's merely compost suspended in a porous bag (like cheesecloth) and soaked in water. If the compost was of good quality, then the water typically takes on a dark, blackish color (appearing a lot like a strong black tea). However, compost tea quality depends on the quality of the parent compost, and compost can vary quite a bit in its makeup, depending upon what went into it and how it was processed.

Many claims are made for compost tea, including uses as a fertilizer and as a disease suppressant. Some of these claims are realistic, others rather fanciful. Since compost tea is basically a leached solution of compost, it often has many of the beneficial characteristics of that compost, but not always. One of the benefits that compost tea imparts to the water is its nutrient content. Compost tea can work well as a liquid fertilizer, and in many instances some of the nutrients it contains can be taken up directly by the leaves of the plant, before the tea even reaches the ground. However, concerns about other liquid fertilizers apply to compost tea as well.



Only as much compost tea should be applied as plants can absorb. Any more than this is likely to result in those same nutrients leaching into ground or surface waters. Any over-application of nutrients constitutes environmental pollution, regardless of whether it was from a natural or a synthetic source. A simple search on the internet will unveil other claims for compost tea, including its purported ability to cure diseases. In order to address this claim, we must differentiate between two compost tea types: Aerated Compost Tea (ACT) and Non-aerated Compost Tea (NCT).

Non-aerated tea can simply be made in a bag, as described above. Aerated compost tea is typically made in a vat with an agitator to insure an even oxygen distribution as it's made. To date, there are no peer-reviewed scientific studies that show that ACT reliably cures any disease, despite dozens of research projects aimed at investigating this over the past few decades. Most of these studies were never published, presumably because they were viewed as failures by the investigators when ACT performed the same as water. In some instances, ACTs have actually been shown to increase disease severity on the plants they were applied to. There are also many studies that appear to show compost tea as effective, but most have serious flaws in experimental design. These are typically published in non-peer-reviewed journals where there is less scrutiny of experimental procedures. Non-aerated compost teas have a research record that is only slightly better, resulting in mild but consistently measurable suppressant effects on a few foliar plant diseases. Regardless of these claims, compost teas are not registered as pesticides, so they cannot legally be applied to control insects or biotic diseases in a landscape setting. This is because in order to obtain registration in California, the product has to be shown to be consistently effective. Consistency can be hard to demonstrate for a biological product that may contain many different strains of fungi and bacteria, even if the parent material is relatively consistent, since weather plays a role in how compost develops.



This is not to say that compost teas don't have a place in the landscaper's toolbox; all current research to date shows compost tea to be a good natural delivery tool for a quick boost of nutrients. As such, applicators should take care to use compost teas in a judicious manner. Plain old compost, not the tea, typically acts to release those same nutrients in a slower manner, plus it has the added benefits of cooling and cushioning the soil. So to really get the most out of your compost, perhaps it's best to apply it to the landscape, and let nature make the tea with rain or irrigation water, unless you have a specific need for a quick boost, and are sure you know how much to use.

Bad News about Impatients

Deborah Matthews, UC Riverside Dept. Plant Pathology

One of California's most adored flowering plants, impatiens, is being threatened by a serious pest. You've probably noticed the common garden impatiens missing from store shelves and landscapes, parks, and gardens this year.

What is going on? What is the problem?

The disease: Impatiens are dying from a relatively new plant disease called impatiens downy mildew, caused by the fungus-like, oomycete pathogen *Plasmopara obducens*. Although a problem for growers in wholesale nurseries since 2004, impatiens downy mildew has only recently started to affect supplies to stores and plants in gardens and landscapes in California. The pathogen primarily affects varieties of *Impatiens walleriana*, or hybrids with an *I. walleriana* parent and wild impatiens (*I. balsamina*). Note that this pathogen does not affect New Guinea impatiens (*Impatiens hawkeri*) or other bedding plant genera. This disease develops rapidly, with a few leaves on apparently healthy impatiens beginning to show slight yellowing and stunting (Fig. 1) followed by development of white, powdery spores on undersides of leaves (Fig. 2), and later, by leaf and flower drop. Plants are likely to become completely defoliated within several weeks. The pathogen produces air-borne spores, which can travel for many miles, as well as swimming zoospores and oospores, which can survive within soil and plant debris long term and infect healthy plants when replanted in the same area.



M. DAUGHTREY, CORNELL

Figure 1. Early symptoms of impatiens downy mildew showing stunting and yellowing of leaves (left and middle); healthy leaf on right.



M. DAUGHTREY, CORNELL

Figure 2. Sporulation of downy mildew on underside of impatiens leaf.

What stores should do: Early detection is especially critical for this disease since chemical control has been shown to be ineffective once sporulation begins. Inspection and certain cultural practices can help limit the spread: Inspect new arrivals and reject or quarantine if in doubt.

- Scout routinely (at least weekly) to identify and remove diseased plants before epidemics can result.
- Turn leaves over to check for sporulation on the undersides of leaves.
- Reduce humidity by increasing plant spacing and air flow; avoid overhead watering, but if used, apply water early in the day to allow for drying of leaves by the afternoon.
- Destroy and dispose of infected plants by bagging and putting them in the trash.

Composting will not destroy spores

- Remove all plant debris and soil particles, then clean and chemically disinfect benches before new plants are brought in.

What to look for: The first signs of disease are yellowing of a small number of leaves and stunting, followed by white sporulation on the undersides of leaves (Fig. 2), and finally leaf and flower drop.

Look for:

- Yellowing leaves that look similar to a nutrient deficiency.
- Leaves curl downward and may show stippling
- The plant drops leaves and flowers
- Fuzzy-looking growth on the underside of the leaves. These are structures that contain the spores that spread the disease.

What to tell customers: If a customer brings in a sample that appears to be the impatiens downy mildew, instruct them to remove the impatiens from their landscape, bag the plants, and dispose in the trash. Infected plants should not be composted. Fungicides are unlikely to provide reliable control in gardens, whereas removing infected plants may limit spread to other areas of the landscape. Alternative plants used as substitutes for impatiens: Provide customers with suggestions about alternative bedding plants that grow well in shady areas of the landscape but will not be affected by the disease (Table 1).

Table 1. Bedding plants that may be good alternatives to impatiens in some areas of California.

| |
|---|
| Bergenia hybrids |
| Cast-iron plant (<i>Aspidistra elatior</i>) |
| Caladiums |
| Clivia (<i>Clivia miniata</i>) |
| Coleus |
| Coral bells (<i>Heuchera hybrids</i>) |
| Corydalis lutea |
| Lady's mantle (<i>Alchemilla mollis</i>) |
| Lobelia |
| Maiden's wreath (<i>Francoa ramosa</i>) |
| New Guinea impatiens (<i>Impatiens hawkeri</i>) |
| Sweet alyssum |
| Wax begonias |
| Yellow archangel (<i>Lamium galeobdolon</i>) |

Super Pest Takes Hold in Sacramento Neighborhood

Jeannette E. Warnet



A well-established and reproducing population of [brown marmorated stink bugs](#) (BMSB) has been found in a Midtown Sacramento neighborhood, reported [Chuck Ingels](#), UC Cooperative Extension advisor for Sacramento County. The infestation seems to be centered around 13th St., south of Capital Park. This is the first reproducing population in California outside Los Angeles County. Ingels said he had no difficulty finding the pests on tree foliage and flying around when he visited the site last week. “This is one of the worst invasive pests we’ve ever had in California,” Ingels said.

Brown marmorated stink bug affects many different crops and is a serious residential problem. It moves around easily, so can be expected to spread. It can fly up to a half mile at a time and also travels long distances by hitching rides in vehicles or inside furniture or other articles when they are moved, often during winter months. As a result, most new infestations are found in urban areas.

Brown marmorated stink bugs are native to China, Japan and Korea. They were first documented in the United States in Pennsylvania in 2001, but was likely established there several years earlier. The pest has spread throughout Pennsylvania, is believed to be established in at least 15 states, and has been found occasionally in more than a dozen additional states. In 2004, BMSB made its way to Oregon and is now established in northwest Oregon and a portion of Southern Washington. The National Agricultural Pest Information System maintains a [map](#) showing current infestations, but it does not yet show California finds. The pest has been present in Los Angeles County for 6 years.

BMSB feeds on dozens of California crops, including apples, pears, cherries, peaches, melons, corn, tomatoes, berries and grapes. Feeding on fruit creates pock marks and distortions that make the fruit unmarketable. In grapes, berries collapse and rot increases. Wine tasters have been able to detect stink bug odor in wines made from grapes that had 10 bugs in a 35-pound lug. It is also a pest of many ornamentals, especially the fruit-bearing trees, princess tree (*Paulownia tomentosa*), common Catalpa (*Catalpa bignonioides*) and tree-of-heaven (*Ailanthus altissima*).

In addition to the damage caused by the BMSB feeding, the “true bug” can cause disturbing problems for homeowners in the winter. When the weather cools down, bugs migrate in droves to sheltered areas, including inside homes and buildings.

“These bugs aggregate in such numbers that there are reports of people using manure shovels and five-gallon buckets to dispose of them,” Ingels said. “The strong, unpleasant odor the insects emit when disturbed makes cleanup still more daunting.

BMSB is a pest in its homeland, but is mostly controlled by parasitic wasps. USDA researchers have collected parasitic wasps in Asia, but they must be tested extensively before they can be released in California, a process that will take until 2016.

“Parasitism is our best hope for reducing populations,” Ingels said. “Chemical control of BMSB is very challenging.”

Ingels said the best way to keep them out of homes is to exclude them by sealing off any potential entry points, especially around window air conditioning units. Insecticides that have been shown to be effective in the lab are often less effective in the field. In and around the home, insecticides that have efficacy are mostly pyrethroids and neonicotinoids, both of which can have harmful off-site effects.

Pesticides showing efficacy on farms also include organophosphates and carbamates. But growers have worked hard to develop effective Integrated Pest Management programs, and the use of these broad spectrum sprays will set these programs back. There are also pest resistance concerns with increasing use of these products.

Control for organic growers and home gardeners will be most troublesome, and involves the use of row covers, trap crops, pheromone traps, and predator insects. Ingels is asking growers to be on the lookout for BMSB. “Because they are strong fliers, it’s just a matter of time before they reach farms,” Ingels said. The pest can be distinguished from ordinary brown stink bugs by its larger size, marble-like coloring on its shield and white markings on the extended edge of the abdomen. BMSB also has distinctive white bands on the antennae and legs. Traps with sex pheromones or other attractants can be used to monitor for the pest, but they are often poor at trapping the bugs even when populations are high. The best monitoring method is to inspect foliage throughout the year, and larger branches in late summer and fall for aggregating bugs. A quick method is to beat foliage over a piece of cardboard or sheet. If suspected BMSB are found, place some in a container and note where and when they were collected. Take the sealed container to the county agricultural commissioner or local UC Cooperative Extension office. The following [UC IPM video](#) was created to help identify brown marmorated stink bug.

Shrub Selection and Care

Karrie Reid, Environmental Horticulture Advisor



'Wild Dancer' landscape shrub rose

SHRUB SELECTION & CARE

Are your shrubs living up to your expectations? An attractive, healthy landscape begins with careful plant selection. Choosing the right shrub for a particular spot must be very difficult indeed, or there would not be so many examples of inappropriate choices leading to unattractive maintenance nightmares. The following guidelines for selection, planting, and care will help you avoid most of the problems that arise as your landscapes age.

Assess your site

SUN EXPOSURE. Does the site receive full sun all day, only morning sun, or very little sun at all? Plants that thrive in full sun require at least 6 hours of sun a day to perform well. Plants that prefer shade may tolerate morning sun, but should not be planted where they will receive sun in the afternoon during the warm months. Only a select group of shrubs will thrive and bloom in the shade.

SOIL TYPE and DRAINAGE. Although many shrubs are tolerant of a wide range of soils, some require excellent drainage (*Arctostaphylos*, *Ceanothus*, *Salvia*), low pH (*Camellia*, *azalea*), or nutrient-rich soil high in organic matter (*Gardenia*). Their growth will be stunted and unhealthy if the soil is not to their liking.

Some problems may be remedied by planting on mounds or adding amendments, but for long-term health and lower maintenance, opt for plants that are suited to the site.

WATER AVAILABILITY. Match your plants to the irrigation, and only put plants with similar water needs on the same valve. You will always have to water to meet the needs of the thirstiest species, which can lead to waste or even damage to plants with lower water requirements. To check for plant water needs check out the [WUCLOS guide](#) or Loris [searchable data base](#).

PLANTING SPACE. Many problems arise because a shrub outgrows its planter bed and must be severely pruned on a regular basis to keep it away from buildings, walks, drives, and rights-of-way.

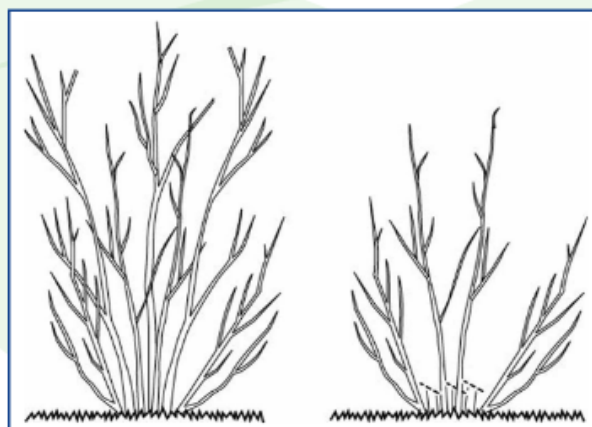
This pruning requires costly man-hours, fuel for equipment, and generates excess green waste. Heavy pruning also stresses and disfigures plants, and the cuts become potential openings for the spread of disease.

Use resources like *Sunset Western Garden Book* or *Landscape Plants for California Gardens* to match your space with the MATURE SIZE of your shrubs. This information is also often available from the grower.

Space plants in a bed with no more than 1' of overlap of their eventual size. For example, shrubs that will reach 7' wide should be planted no less than 6' apart. This will yield a full planting without crowding.

Planting Basics

Dig a hole twice as wide and ONLY AS DEEP as the root ball. This will keep the plant from settling below grade later which can cause water to collect around the crown leading to rot.



Thinning cuts (dotted lines on the right) used to encourage new interior growth

Shrub Selection and Care

Loosen any roots that are wound around the pot, and slice off the bottom roots if they are densely matted. This will cause the plant to generate new roots into the surrounding soil. Thoroughly break up the backfill soil before refilling the hole; tamp it down **FIRMLY** to get good soil/root contact, and then water well.

[Download this free publication](#) on planting shrubs.

Long-term Care

If you carefully selected your shrubs for your soil and site, they will require **NO SUPPLEMENTAL FERTILIZATION**. In their first year, especially if planted in spring or summer, they will need careful, regular watering to make sure they develop a good, deep root system. Avoid any pruning except to correct leggy or particularly unshapely growth.

Maintaining a 2-3" layer of ORGANIC MULCH around the base of shrubs will help retain moisture, reduce weeds, and provide a healthier environment for the roots. Replenish every 2 or 3 years.

Most landscape plants will achieve a naturally attractive form with little or no pruning. Moderate tip pruning may be used to encourage bushier growth, and thinning (shown in the diagram at left) may be used if dense shrub growth begins to leave inside branches too bare.

If hedging is required, the form should be a pyramid (as shown below), rather than a muffin. This allows light to reach all the foliage, encouraging growth to the base, and prevents "bare-leg syndrome".

What to Avoid

- Planting in June and July: heat is very stressful for new plants. Wait until fall if at all possible.
- Planting badly root-bound plants: these should be returned to the supplier as they may never be able to outgrow kinked roots.
- **Planting in front of sprinkler heads: growing shrubs will block the spray from reaching other parts of the bed.**

SHRUB PRUNING MISTAKES

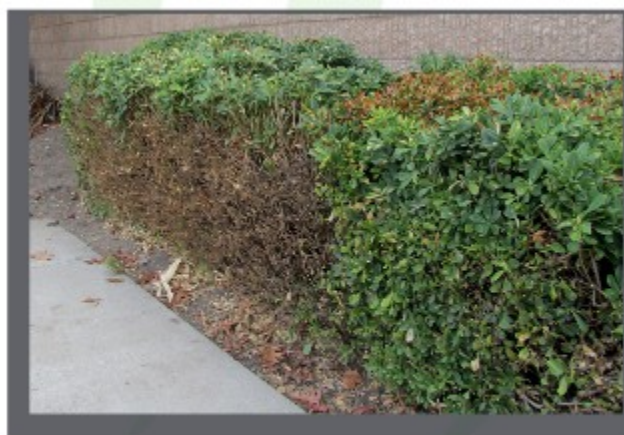
PRUNING ALL GRASS-LIKE PLANTS LIKE GRASSES. The most commonly mistreated plants are *Dietes bicolor* (Africa iris) and *Phormium tenax* (New Zealand flax). While grasses can grow back from the crown, these 2 plants are just disfigured and develop a 2-layered look. To control size, cut only the outside stalks to the ground, leaving the top in its natural form. Dead

seed stalks can be cut back to the base with hand pruners. **HARD CUTTING INTO WOODY SHRUBS.**

Not only does this disfigure shrubs, it shortens their life. If a shrub has gotten so large that only hard pruning can keep it in bounds, **REPLACE IT WITH SOMETHING** appropriate to the space.



2-layered New Zealand flax



Pittosporum damaged from pruning with symptoms of disease on the right



August Monthly Meeting—Tomato Prep Team and MG's dishing up a delicious salad potluck dinner



2013 Smart Garden Conference Sharon M. and Corrine at the repurpose display and Sharon S., Candy and Trish serving breakfast goodies. Curt and Tom at their irrigation display.



Bonnie B. And Marsha G. repotting flower pots in Downtown Lodi.

More of the fall planting team: Bob Slayback, Carol Roby, Bonnie Bradley and Curt Juran.



Photos from [CalPhotos](#)



Armillaria mellea; Honey Mushroom



Auricularia auricula-judae;
Jelly Ear

Fungi
Just
because it's really
cool...



Astraeus hygrometricus; Hygroscopic Earthstar



Amanita caesareoides; Asian Vermilion
Slender Caesar



Aleuria aurantia Orange Peel or Orange Cup

Advise To Grow By



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Facebook: [Master Gardeners San Joaquin County](#)

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Your Pinterest Inspiration- Painted Gourds



Bottom 2
were
painted by
MG Janet
Swanson





SAVE THE DATE! for the California Master Gardener STATEWIDE CONFERENCE

October 7-10, 2014
Tenaya Lodge • Yosemite



This year's conference committee is striving to make the 2014 conference the best ever!



Visit the 2014 Master Gardener Conference website <http://ucanr.edu/mg2014> for updates and more information as it becomes available.
Start saving now!

Reasons you won't want to miss this conference...

- The opportunity to listen and learn from excellent speakers on relevant topics
- Camaraderie and networking with fellow Master Gardeners
- Search for Excellence Awards
- Exciting pre and post conference tours
- Fantastic silent auction items
- Vendor Mall for garden ware
- Unique merchandise at the Master Gardener Store
- Beautiful scenery at one of California's foremost destinations



San Joaquin Master Gardeners 2014 Workshop Schedule

City of Stockton
Delta Water Supply
Project Building

**January 11:
Behind the Greenhouse Door -**

Creating the greenhouse that works for you.

**February 8:
Veggies Gone Vintage -**

Learn how to grow heirloom fruits and vegetables.

**March 8:
Growing a Masterpiece
Centerpiece -**

From garden to vase, learn how to grow a cutting flower garden.

**April 12:
Gardening For Life -**

Tips and tricks to gardening in your "golden years."

**May 10:
Picked at its Prime -**

Ever wonder how to pick a fresh melon and the best way to store tomatoes?

**June 14:
Bees Wanted -**

Creating a buzz-worthy garden.

**July 12:
Seed Envy -**

How to collect and store seeds to use in next year's garden.

**August 9:
Made in the Shade -**

It is possible to have a successful shade garden, even in our climate.

**September 13:
Art of Floral Design -**

Learn how to make beautiful floral arrangements for yourself and as gifts.

**October 11:
Gardening Tool Box -**

Discover great gardening websites and resources that are available to add to your virtual tool box.

**November 8:
Pruning With a Purpose -**

Winter pruning chores.

December:

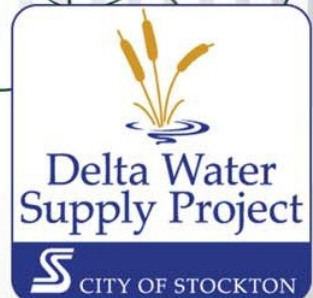
No class. Happy Holidays!

Classes will be held at the
City of Stockton Delta Water Supply Project

11373 North Lower Sacramento Road • Lodi, CA 95242

Classes begin at 10:00 am and end at 11:30 am.

Class size is limited to 30. You will need to RSVP by the Wednesday before the class to attend the workshop. Please call (209) 953-6100 to guarantee your seat.





San Joaquin Master Gardeners 2014 Workshop Schedule

Manteca Library

Time 10:30 am -12:00 pm

January 18: Behind the Greenhouse Door -

Creating the greenhouse that works for you.

February 15: Veggies Gone Vintage -

Learn how to grow heirloom fruits and vegetables.

March 15: Growing a Masterpiece Centerpiece -

From garden to vase, learn how to grow a cutting flower garden.

April 19: Gardening For Life -

Tips and tricks to gardening in your "golden years."

May 17: Picked at its Prime -

Ever wonder how to pick a fresh melon and the best way to store tomatoes?

June 21: Bees Wanted -

Creating a buzz-worthy garden.

July 19: Seed Envy -

How to collect and store seeds to use in next year's garden.

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Discover great gardening websites and resources that are available to add to your virtual tool box.

November 15: Pruning With a Purpose -

Winter pruning chores.

December:

No class. Happy Holidays!

Classes will be held at the Manteca Library

320 W. Center Manteca, CA 95336 • (209) 937-8221

Classes begin at 10:30 am and end at 12:00 pm.

Classes are free.

All participants must register a week prior to the class at (209) 953-6100.

