Healthy Garden—Healthy Home

Retail Nursery Newsletter

An Information Source for Retail Nursery Professionals

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Healthy Garden—Healthy Home

Helping to improve water quality in San Diego County through the implementation of Integrated Pest Management practices.

It's The Water That Connects Us!

Inside this issue:

Brown Garden Snail Biology and Control in California

By Cheryl A. Wilen, Area IPM Advisor, UC Statewide IPM Program

The brown garden snail or European brown snail (Helix aspersa Müller) is an introduced pest in California, likely brought here purposefully as a food crop (escargot) in the mid-1800's. It has since become a major pest in a number of crops. It can rapidly consume transplants or seedlings, damage citrus fruit, and reduce landscape quality. Nursery stock transportation may be limited due to the presence of the brown garden snail.

The brown garden snail is most recognizable by its large (up to 1 inch), roundish shell. It is light to dark brown often with yellow to cream colored flecks or streaks. The brown garden snail has both male and female reproductive systems; therefore every adult snail is capable of laying eggs. While digging around in moist soil or potting mix, you may find pockets of the round, white eggs about 3mm in diameter that resemble slow release fertilizer (like Osmocote). There may be very few or as many as 120. In warmer periods of the year, snails can lay eggs as often as once per month and the eggs can hatch in 2 weeks. However, the snails do not reach reproductive maturity until their second year.

Brown Garden Snail

Brown garden snails are active at temperatures between approximately 55°F and 80°F but are most active between about 60 and 75°F. They

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Control Aphids and Protect Their Enemies

By Vincent Lazaneo, UCCE San Diego County Home Horticulture Advisor

Like swallows returning to Capistrano, aphids show up in the garden every spring. Their sudden appearance on new leaves and shoots can be alarming, but you should not panic and spray them with a harsh insecticide. There are other less toxic ways to control aphids that will protect plants and our environment.

Aphids are small (about one-eighth inch long) pear-shaped insects with

Adult Winged Aphid

long legs and antennae. They are usually wingless, but most species also produce some winged adults which fly and are carried by wind to other plants. Aphids may be green, yellow, brown, red or black depending on the species and the plants they feed on. A few species appear waxy or wooly due to the secretion of a waxy, white or gray substance which covers their bodies.

Aphid populations can reproduce quite rapidly. In California's mild climate, most aphids reproduce asexually with adult females giving birth to

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Brown Garden Snail Biology and Control in California *continued from page 1*

can survive temperatures as low as 14°F. At temperatures below 45°F snails hibernate, usually in the soil, and above 80°F or under dry conditions the snails will estivate by creating a thin dry membrane over the shell opening and remain on tree trunks or walls until the temperature drops and there is more moisture.

Brown Garden Snails Estivating on a Tree Trunk.

One of the primary signs of snails (or slugs) are the shiny slime trails seen on the foliage or ground. The leaves of the plant may have ragged holes in them. Inspecting the soil near the base of plants or under containers or other shady or moist areas such as within the plant canopy during the day will likely reveal the snails' hiding places. They are primarily active at night so nighttime inspection will find them crawling over the plants and ground. While not a good way to control snails, placing beer mixed with water in a shallow dish, can be used as a monitoring tool. Snail bait containing metaldehyde can also be used to monitor for snails.

Why monitor snails? A low snail population may be difficult to detect but you but still need to determine when to take some control action. You should have some idea about whether the snail pollution is light or heavy so you can adjust the bait to the snail population. Higher rates (lb/A) should be used to correspond to heavier snail populations. As the population decreases, the rate can also be reduced. While there is currently no established threshold for the brown garden snail, it is helpful to know how to adjust the rate if needed to avoid overuse of the mulluscicide as well as determine if the treatment is working.

Chemical control of brown garden snails is limited. Metaldehyde and iron phosphate are the only two active ingredients registered for home use for the control of the European brown snail and they have different modes of action to kill the snails.

When a snail crawls over or ingests metaldehyde the snail almost immediately starts producing excess mucus in an effort to detoxify the pesticide. This is followed by destruction of the cells in the mucus producing membrane resulting in death. The mechanism of iron phosphate is thought to be a cessation of feeding due to accumulation of iron in the digestive tract. Snails must consume the bait for this material to be effective. While snails do not feed or feed very little after ingestion, they may not die for 3-7 days. Nevertheless, many people in urban or residential sites prefer this product due to its low mammalian toxicity.

FREE Integrated Pest Management Community Workshop Series For You & Your Customers

The ***Healthy Garden –Healthy Home*** program is conducting a series of FREE community workshops integrating the concept of Integrated Pest Management (IPM) with a variety of topics. The underlying message of each workshop is to demonstrate how residents can be an important part of the solution to improve water quality in San Diego County. Monthly workshops will include topics such as *Weed Control*, *Ants*, *Snails & Slugs*, *Backyard Citrus Pests*, *Irrigation & Lawn Maintenance, Plant Selection, Beneficial Insects, Whitefly, Composting, and Tomato Pests & Diseases*. Our next workshops will be on ***How to Grow Healthy Tasty Tomatoes*** (Carlsbad) and ***Controlling ANTS*** (Chula Vista). (Please see ads.) ***We have applied for CCN Pro CE Units for both workshops***. For additional information contact Scott Parker at ***858-694-2184*** or saparker@ucdavis.edu

Control Aphids and Protect Their Enemies *continued from page 1*

live young without mating. During moderately warm weather (60 – 80 degrees F.) many aphids can develop from newborn nymphs to reproducing adults in seven or eight days, and each adult aphid can produce 80 off-spring a week.

Most established plants can tolerate a moderate number of leaf-feeding aphids. Large populations damage plants and cause curling, yellowing and distortion of leaves and stunting of shoots. Aphids also produce large quantities of a sticky secretion called honeydew which often turns black with the growth of a sooty mold. Some aphids also inject toxins as they feed, form galls on plant tissue, transmit viruses or feed on plant roots.

Sooty Mold caused from Honeydew produced by Aphids

Aphids are easier to control if you detect an infestation early. Once aphid populations are high, and they have begun to curl leaves, it is often harder to control them since curled leaves protect aphids from natural enemies and insecticides. When plants are growing rapidly, check them at least twice a week for aphids. Look at new growth and check the undersides of leaves since these are preferred feeding sites. Watch for large numbers of ants crawling up a tree or shrub. They can indicate it is infested with aphids or other honey-dew-producing insects.

Although aphids seldom kill mature plants, the damage and unsightly honeydew they produce sometimes warrant control. Aphids can often be managed with non-chemical controls listed below. Try them first to help preserve natural enemies that feed on aphids.

- Use your fingers to rub aphids off a rose bud, leaf or seedling.
- Prune off infested parts of a plant when aphids are on a few curled leaves or stems.
- Remove weeds near a garden that harbor aphids before vegetables are planted.
- Grow seedlings under protective covers in a garden, or grow them indoors and transplant them into the garden when they are larger and more tolerant of aphids.
- Knock aphids off sturdy plants with a strong spray of water. Wash plants early in the day to avoid fungal diseases.
- Apply the correct amount of nitrogen fertilizer. A high level favors aphid reproduction. Apply soluble fertilizer in small amounts during the season rather than all at once or use slow acting organic or time-release fertilizer.
- Thin out the canopy of dense trees to discourage aphids that thrive there.
- Control ants that climb trees to feed on aphid honeydew. Put a band of sticky material like *Tanglefoot* around the trunk on a protective collar of fabric tree wrap or duct tape. Also use ant stakes or baits along ant trails to control the nests.

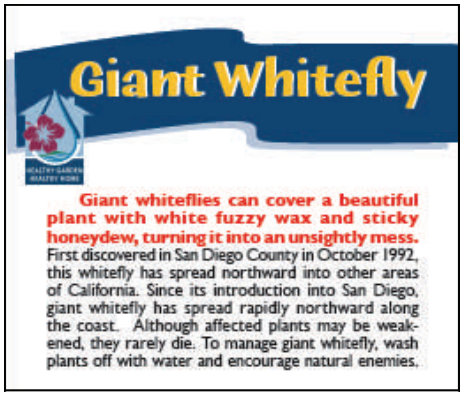
If a chemical treatment is needed to control aphids, use insecticidal soap, neem oil or a narrow range horticultural oil (e.g. parafinic). These products must contact aphids to kill them so thorough coverage of plant parts with spray is required. Beneficial insects that are present may be killed. Since these products leave no toxic residue, they do not kill natural enemies that migrate in after spray is applied.

Avoid using broad spectrum insecticides like malathion, carbaryl (Sevin), acephate (Orthene-ornamentals only) and pyrethroids (e,g, Permethrin). These insecticides leave a toxic residue on treated foliage which kills beneficial insects long after plants are sprayed. They are also carried by run-off water from irrigation and rain into storm drains which empty directly into streams, rivers, lakes and the ocean.

New Information Available: GIANT WHITEFLY Tip Card & New Pest Notes

QUICK TIP CARDS

The UC Statewide IPM Program has just released the latest in a series of IPM Quick Tip Pest Cards. The latest addition, ***Giant Whitefly Quick Tip Card***, was developed specifically for San Diego County. Additional *Quick Tip Cards* that are currently under development include ***Weeds in Landscapes*** *(English)*, ***Weeds in Lawns*** *(English)*, and ***Rats*** *(Spanish)*.



PEST NOTES

- Mallows, updated Mar. 2006
- Mistletoe, updated Feb. 2006
- Eucalyptus Redgum Lerp Psyllid, updated Jan. 2006
- Codling Moth, updated Nov. 2005
- Cliff Swallows, added Aug. 2005
- Hackberry Wooly Aphid, added June 2005
- Woodpeckers, added May 2005
- Ants, added Apr. 2005

Additional resources are available at www.ipm.ucdavis.edu

HEALTHY GARDEN—HEALTHY HOME

University of California Cooperative Extension
Farm and Home Advisors Office
5555 Overland Avenue, Building #4, Suite #4101
San Diego, CA 92123

Phone: 858-694-2184
Fax: 858-694-2849
E-mail: saparker@ucdavis.edu
Web Site: www.cesandiego.ucdavis.edu

HEALTHY GARDEN
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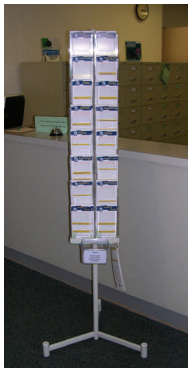
FREE Point-of-Purchase Educational Materials and Training Workshops Available for Local Nurseries and Garden Centers!

As part of the ***Healthy Garden – Healthy Home*** Integrated Pest Management (IPM) outreach effort, research based educational materials, and the fixtures necessary to display them, are available to nursery and garden centers throughout San Diego County. Materials include water resistant pest cards and informational tear-off sheets. Pest Card topics include; *Ants, Aphids, Cockroaches, Earwigs, Fleas, Giant Whitefly, Head Lice, Snails & Slugs, Spiders, Termites, Safe Use & Disposal of Pesticides, Lawn Insects,* and *Gardening with Good Bugs.* Tear-Off Sheet topics include; *General IPM Information, Ants, Snails & Slugs, and Aphids*. And coming soon; *Preventing Irrigation Runoff and Giant Whitefly*.

In addition to these Point-Of-Purchase items, several educational videos ranging in length from 15 second to 3 minute are available for use in your store. Both DVD and video format are available.

Workshops for nursery staff focusing on topics related to IPM and Water Quality are also available for booking.

For more information about any of these opportunities or to make arrangements for your nursery or garden center to participate in this program please contact Scott Parker by phone, 858-694-2184, or email, saparker@ucdavis.edu.



Sample Pest Cards Display Racks