It’s Time to Spray for Peach Leaf Curl

Winter slows down many garden pest problems, but it is also a key time for gardeners to take actions to prevent certain pest problems next spring. One of the most important of these preventive practices is application of dormant treatments for peach leaf curl.

Caused by the fungus *Taphrina deformans*, peach leaf curl is a very serious disease, which affects only peach and nectarine trees. Its most distinctive symptom is distortion, thickening, and reddening of foliage as trees leaf out in the spring. Damaged leaves often die and fall off trees but will be replaced with new, usually healthy leaves once the weather turns dry and warmer. A leaf curl infection that continues untreated over several years will contribute to a tree’s decline and reduce fruit production.

To prevent peach leaf curl, peach and nectarine trees must be treated with preventive fungicides during the dormant season. The best time is after leaves have fallen, usually in late November or December. In wet climates or during a wet winter, a second application can be made in late winter or early spring just before buds swell. If the November/December treatment wasn’t made, it can be applied in January or February as buds begin to expand.

Although gardeners won’t notice the symptoms until spring, there is little that they can do at that time to reduce leaf curl. Treatment applied after trees leaf out or after symptoms appear won’t be effective. Removing affected leaves or shoots will not reduce the problem. There are a few peach varieties that are resistant or partially resistant to leaf curl. These are Frost, Indian Free, Muir, and Q-1-8. Your store may want to feature these varieties for customers who prefer not to apply the dormant spray.

**Dormant Treatment Materials Recently Discontinued**

Two important fungicides traditionally used to treat peach leaf curl were withdrawn from the market in the last year. Lime sulfur (calcium polysulfide) was cancelled for backyard uses by the U.S. EPA, effective Dec. 31, 2010. Tribasic copper sulfate (sold as Microcop by Lilly Miller) has been discontinued by the manufacturer, although existing supplies can be sold and used.

As a result, the options for dormant treatments for preventing peach leaf curl in backyard trees are limited and less than ideal. Copper ammonium complex (Liquid Cop or Kop R Spray) is still available but is only 8% copper and significantly less effective than Microcop. It can be made more effective by applying it with 1% oil in the solution.

The fungicide chlorothalonil is effective, and several trade named products are available (Daconil, Fung-onil, Ortho Garden Disease Control, etc.). However, care must be taken in handling chlorothalonil, since it is listed as a likely carcinogen and can cause severe eye or skin irritation if handled improperly or if protective clothing and equipment aren’t worn.

**WHAT’S INSIDE ...**

Natural Herbicides Rated | Page 2
Retail Workshops Offered | Page 3
Control Ants in Homes | Page 4

*WANT A FREE SUBSCRIPTION?* To receive this newsletter electronically, send your e-mail address to UCIPMretail@ucdavis.edu with the subject line “Subscribe to retail newsletter.” Please share this newsletter with your co-workers and encourage them to subscribe too!
The public’s increasing demand for safe “green” products has resulted in many new environmentally friendly herbicides for controlling weeds in the garden and landscape. Information on the efficacy of these new products is limited. However, environmental awareness groups and public agencies are promoting them as a way to reduce the use of herbicides that have a greater potential to contaminate surface waters. Retailers are beginning to more widely stock these “natural” herbicides, most of which contain essential oils or other natural plant extracts targeting weeds.

The majority of these “green” weed-control products are botanically based oils (e.g., clove oil, eugenol, and d-limonene), soaps (e.g., pelargonic acid), or acetic acid that control weeds by destroying the leaf cuticle or causing cell leakage that rapidly leads to death. Unfortunately, because these herbicides kill only green parts of the plant they contact, they don’t provide long-term control of weeds with extensive root systems or underground storage structures such as rhizomes, tubers, or bulbs. Thus many treated plants are able to recover. In contrast, some conventional herbicides such as glyphosate or 2,4-D are translocated to roots or underground storage structures to kill larger plants and perennial weeds.

These types of herbicides are applied after the weeds have emerged (postemergent) and have little or no soil residual activity. They don’t control weed seedlings that germinate after application. They kill the plants by breaking down plant membranes and are considered contact or burndown herbicides. These herbicides are very fast acting (Figure 1), but to be most effective they must contact all or most of the aboveground plant tissue. It is especially important to spray the growing points, or else the plant will regrow. Grasses and perennial weeds are difficult to control for an extended period of time, because they have some or all of their growing points below ground.

However, in some cases, especially where annual weeds are small, these products may be appropriate. These herbicides are best used on small weeds and annual weeds or for controlling weeds in cracks and, in some cases, edging. They can be used for spot spraying, but care must be taken that the spray or drift doesn’t contact desirable plants or else leaf spotting or death will occur.

**Increasing the Odds**

Ways to improve efficacy when using these types of herbicides include:

- Good spray coverage;
- Application in warm weather (75°F to 80°F);
- If using concentrates, addition of surfactants that improve weed control;
- Treatment when weeds are small; and
- Repeat applications for larger weeds, in most instances.

**Corn Gluten Meal**

Another common natural herbicide is corn gluten meal (CGM). While the previously listed herbicides are postemergent types, CGM is sold as preemergent herbicide. Although being widely touted as an effective herbicide that will control seedlings as they geminate, we have conducted numerous tests with this product and haven’t been able to get results that justify its use as an effective preemergent herbicide. For example, there were no differences in the time needed to remove weeds from plots treated with CGM than from plants that were handweeded or from plots that were not subjected to any other treatment (Figure 2).

So the question is: Are natural herbicides safe and effective? If used as part of an integrated pest management program, the contact herbicides fit very well. Users should know that they won’t get the same kind of long-term weed control as products containing glyphosate (e.g., Roundup). The user should also be aware that many of the plant based or “natural” products can cause skin irritation or eye or lung problems. Eye protection... Continued on Page 3
Natural Herbicides... continued

Examples of **orange oil** (**d**-limonene) **based herbicides** include Avenger and Worry Free Weed and Grass Killer.

Examples of **acetic acid-based herbicides** include WeedPharm (Signal word: Danger), AllDown, and Grotek Elimaweed Weed and Grass Killer. **Note:** The acetic acid concentration for herbicidal use should be about 10 to 20%. Household (food-use) vinegar is about 5% acetic acid and isn’t effective for controlling most weeds.

Examples of **fatty acid-based herbicides** include Scythe, Safer Moss and Algae Killer, Safer Fast Acting Weed and Grass Killer, Monterey Herbicidal Soap, and Natria Weed and Grass Killer.

**Combination** products include Burn-out II (clove oil plus citric acid) and Earthing 4n1 Weed Control RTU (soap of fatty acids plus maleic hydrazide, a growth regulator).

—Cheryl Wilen, UC IPM South Coast Area Advisor, cawilen@ucdavis.edu
Help! How Do I Manage Ants in my House?

A look at the variety of ant control products on the shelves of any hardware store or garden center is enough to confuse any ant-tormented customer. Here are some questions you can ask your customers to help them find less-toxic solutions for ant invasions.

What kind of ant do you have?
Different products work better for different ant species. The most common type of ant invading California homes is the Argentine ant (Figure 1). It is small (no more than 1/4 inch long), uniformly brown, and travels in distinct columns of workers. The Key to Identifying Common Household Ants at www.ipm.ucdavis.edu/ants can help identify species.

How are the ants coming into the house?
Most household ants such as the Argentine ant nest outdoors and come in seeking food or water. A good way to solve many ant problems is to simply plug their entryways. Tell customers to inspect inside and outside of their house to find out where ants are coming in. Your store probably sells caulk and sealers that you can direct customers to.

What’s drawing ants into the house?
If invading ants don’t find a food source in a house within a few days, chances are they may leave. Removing food sources including pet food bowls, leaking garbage, or spilled sugary or greasy items is an essential part of making a home less attractive to ants. These attractive foods will also make ants less likely to visit any bait stations installed to manage them.

Also, conditions outside can encourage ant invasions. For instance, wood-based mulch up against the house (especially when moist) provides ideal nesting material, and plants (often in pots) that support aphids and other honeydew-producing insects will also draw ants. Where customers have persistent problems, suggest they keep the area directly around their house clear of these attractants.

Finally, movement of ants into the home is often triggered by changes in weather such as the first rains in fall or the first hot days of summer, so expect an increase in customer questions around those times.

Once these questions are out of the way, you can suggest some ideas:

- An IPM approach is essential. Ant control products are unlikely to be effective unless food sources are removed and entryways are plugged. If Argentine ants are the problem, the most effective and safe products available to homeowners are liquid borate baits (e.g., sodium tetraborate decahydrate or disodium octaborate tetrahydrate). Argentine ants prefer liquid baits that contain a sugary attractant. There are many prefilled liquid ant bait stations containing these products on shelves; however, the 5% borate solutions in these products are likely to kill ants before they can take the poison back to their nest to kill the colony. Solutions of 1% or less borate dispensed in refillable bait station are most effective. We hope these products soon become available in more stores. (See the June 2011 issue of this newsletter for details.) Other ant baits are more effective on other ant species.
- Gel baits (such as fipronil) can be useful in cracks and crevices that can’t be sealed with a more permanent sealant.
- Ready-to-use sprays of plant oils such as orange, peppermint, rosemary, or clove may kill ants on contact and repel ants for a short time but provide no long-term control.

For more information—including helpful videos—on how to manage ants with less toxic methods, visit the UC IPM ant page at www.ipm.ucdavis.edu/ants.

University of California Statewide IPM Program
One Shields Avenue
Davis, CA 95616-8621
Phone: (530) 752-8350
E-mail: UCIPMretail@ucdavis.edu
Online: www.ipm.ucdavis.edu/RETAIL
Authors: M. L. Flint and K. Windbiel-Rojas, unless otherwise noted

Produced by the University of California Statewide IPM Program with partial funding from the USDA NIFA EIPM Coordination Program. To simplify information, trade names of products have been used. No endorsement of named products is intended; nor is criticism implied of similar products not mentioned.

For more information about managing pests, contact your University of California Cooperative Extension office listed under the county government pages of your phone book, or visit the UC IPM website at www.ipm.ucdavis.edu.

ANR NONDISCRIMINATION AND AFFIRMATIVE ACTION POLICY STATEMENT
The University of California prohibits discrimination or harassment of any person in any of its programs or activities. The complete nondiscrimination policy statement can be found at http://ucanr.org/sites/anrstaff/files/107734.doc. Inquiries regarding the university’s equal employment opportunity policies may be directed to Linda Marie Manton, Affirmative Action Contact, University of California, Davis, Agriculture and Natural Resources, One Shields Avenue, Davis, CA 95616, (530) 752-0496.

WHAT IS IPM? Integrated Pest Management (IPM) programs focus on long-term prevention of pests or their damage through a combination of techniques including resistant plant varieties, biological control, physical or mechanical control, and modification of gardening and home maintenance practices to reduce conditions favorable for pests. Pesticides are part of IPM programs but are used only when needed. Products are selected and applied in a manner that minimizes risks to human health, beneficial and nontarget organisms, and the environment.