



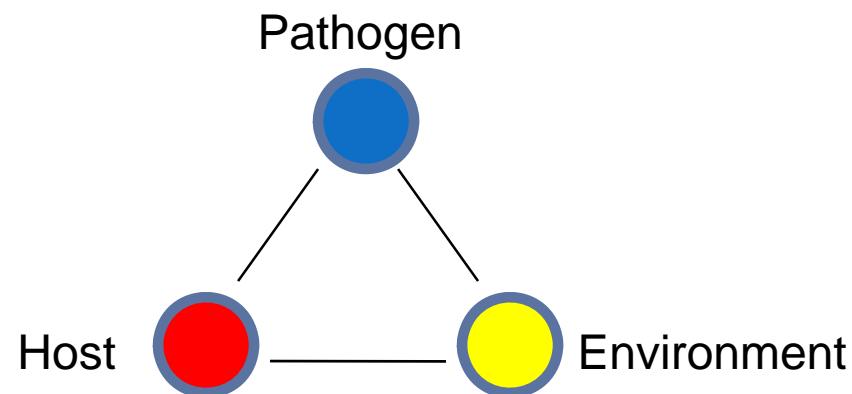
UC
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MAINTAINING A HEALTHY LANDSCAPE

Darren L. Haver, University of California Cooperative Extension, Orange

PLANT HEALTH AND IRRIGATION

- ① 90% of plant 'diseases' are caused by abiotic or poor cultural practices.
- ① Overwatering often creates a situation leading to a disease outbreak, usually fungal.





OVERWATERING AND DISEASE

- ⊙ Pathogen is more easily dispersed.
- ⊙ Pathogen can easily germinate and grow.
- ⊙ Waterlogged soils stress the host plant.

COMMON SYMPTOMS OF UNDERWATERING

- ⊙ Leaf drop
- ⊙ Foliage wilts
- ⊙ Dieback
- ⊙ Bark cracking
- ⊙ Bleached leaves



COMMON SYMPTOMS OF OVERWATERING

- ① Leaf drop
- ① Foliage wilts
- ① Spotted leaves
- ① Bleached leaves





FREQUENT IRRIGATION



CONSEQUENCES OF OVERWATERING LANDSCAPES



- ⊙ Fertilizer is easily washed off the surface or below the root zone where it can contaminate creeks, rivers, and groundwater.
- ⊙ Excess water coupled with fertilizer causes plants to grow faster requiring more frequent trimming.
- ⊙ Excess water predisposes plants to root rots as waterlogged soils lack oxygen.
- ⊙ Overwatering slopes, especially during the rainy season, saturates the soil possibly resulting in slope failure.





Armillaria Root Rot



Damage caused by Diaprepes root weevil – Larval feeding



Girdling of the crown of citrus

RED IMPORTED FIRE ANT

SOLENOPSIS INVICTA



UC RESOURCES TO HELP MAINTAIN A HEALTHY LANDSCAPE

- ⊙ UC Guide for Healthy Lawns
- ⊙ <http://www.ipm.ucdavis.edu/TOOLS/TURF/>

The screenshot shows the UC IPM Online Statewide Integrated Pest Management Program website. The header includes the University of California logo and the text 'University of California • Agriculture and Natural Resources'. The main title is 'UC IPM Online STATEWIDE INTEGRATED PEST MANAGEMENT PROGRAM'. The page is titled 'How to Manage Pests The UC Guide to Healthy Lawns' and is described as 'for home gardeners and managers of parks, school grounds, and other low-maintenance turf'. A navigation bar includes links for 'Index to contents', 'Acknowledgments', 'Related UC publications', and 'References'. The main content area features a grid of six topics: 'Choose and identify your turf species', 'Lawn care for new lawns', 'Prepare the site and plant turf', 'Lawn care for established lawns', 'Lawn renovation', and 'Manage pests and diagnose problems'. The left sidebar contains navigation menus for 'How to Manage Pests', 'Identification Galleries', 'Educational Resources', and 'Research and IPM'. The footer contains copyright information and a disclaimer.

University of California • Agriculture and Natural Resources
UC IPM Online
STATEWIDE INTEGRATED PEST MANAGEMENT PROGRAM

UC IPM Home
Search
How to Manage Pests
Home & garden
Agriculture
Natural environments
Exotic & invasive
Weather data & products
Degree-days
Interactive tools & models
Identification Galleries
Natural enemies
Weeds
Educational Resources
Publications & more
Workshops and events
Training programs
Pesticide information
Research and IPM
Grants programs
Funded-project results
What's new
In the news
Announcements
Subscribe (RSS)
Site index
Help
Acknowledgments
UC ANR: more topics

How to Manage Pests
The UC Guide to Healthy Lawns
for home gardeners and managers of parks, school grounds, and other low-maintenance turf

[Index to contents](#) | [Acknowledgments](#) | [Related UC publications](#) | [References](#)

All you need to know to grow a lawn using little or no pesticide

- Choose and identify your turf species
- Lawn care for new lawns
- Prepare the site and plant turf
- Lawn care for established lawns
- Lawn renovation
- Manage pests and diagnose problems

Statewide IPM Program, Agriculture and Natural Resources, University of California
All contents copyright © 2008 The Regents of the University of California. All rights reserved.
For noncommercial purposes only, any Web site may link directly to this page. FOR ALL OTHER USES or more information, read [Legal notices](#). Unfortunately, we cannot provide individual solutions to specific pest problems. See [How to manage pests](#), or in the U.S., contact your [local Cooperative Extension office](#) for assistance. /TOOLS/TURF/ revised: January 25, 2008. [Contact us](#) [Feedback](#)

UC RESOURCES TO HELP MAINTAIN A HEALTHY LANDSCAPE

- ⊙ UC Integrated Pest Management
- ⊙ <http://www.ipm.ucdavis.edu/>

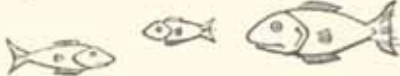
The screenshot shows the UC IPM Online website. At the top, it reads "University of California • Agriculture and Natural Resources" and "UC IPM Online STATEWIDE INTEGRATED PEST MANAGEMENT PROGRAM". The page is divided into several sections:

- Search**: Includes an "Announcing..." section with bullet points for "Project progress reports format for exotic/invasives now available", "Landscape pest ID cards now available", "Kiosk schedule updated", "Avocado, olive, and tomato guidelines updated", and "Grass guidelines updated". Below this is a paragraph: "Solve your pest management problems with UC's best information, personalize it with interactive tools, or find out about pest management research and extension projects." and links for "About UC IPM" and "2008 Annual Report".
- How to manage pests**: Includes a sub-section "Manage and identify insects, mites, diseases, nematodes, weeds, and vertebrates" with links for "Homes, gardens, landscapes, and turf (including Pest Notes)", "Agriculture and floriculture (Pest Management Guidelines)", and "Natural environments". It also includes a sub-section "Use tools to help make decisions" with links for "Weather data and products", "Degree-days", and "Interactive tools and models".
- Educational resources**: Includes links for "Publications and other materials", "Workshops and events", "Training programs", and "Pesticide information".
- Research and IPM**: Includes links for "Grants programs", "Results of funded projects", and "Research tools and databases: California pesticide use summaries".

At the bottom, there is a footer with the text: "Statewide IPM Program, Agriculture and Natural Resources, University of California. All contents copyright © 2009 The Regents of the University of California. All rights reserved. Administration" and a disclaimer: "For noncommercial purposes only, any Web site may link directly to this page. FOR ALL OTHER USES or more information, read Legal Notices. Unfortunately, we cannot provide individual solutions to specific pest problems. See How to manage agrib. or in the U.S., contact your local Cooperative Extension office for assistance. / revised: May 21, 2009. Contact webmaster. Mailing address: Statewide IPM Program, University of California, One Shields Ave., Davis, CA."

Top Ten Ways to Keep Our Water Clean

Home and garden pesticides and fertilizers are contaminating California creeks, rivers, and oceans. Garden chemicals cause pollution when people dump them down drains or when they are washed into gutters, drains, and creeks by rain, garden watering, or hosing down sidewalks. Here's what you can do to help.



Be Careful with Garden Chemicals

1. **Avoid using pesticides.** Be sure you have identified a specific pest problem before applying any pesticide. If treatment is necessary, use non-chemical methods or least toxic pesticides where ever possible. Ask a UC Master Gardener for help.
2. **Keep fertilizer and pesticides off of hard surfaces** like sidewalks or driveways. Sweep any material that accidentally gets on hard surfaces back onto lawns.
3. **Don't over use fertilizer.** More is not better. Actively growing turf, flowering shrubs, some annuals and fruit trees require regular fertilization but ornamental trees do not. Use slow-release fertilizers and be sure to measure and apply them according to label directions.
4. **Avoid using pyrethroid insecticides** to control ants. Manage ants by reducing food sources, excluding them from homes, and using baits in containers.
5. **Use a mulching mower** to recycle your lawn clippings and reduce your lawn's requirement for fertilizer.
6. **Dispose of garden chemicals properly.** Never sweep, hose off, or pour leftover pesticides or fertilizers into drains or gutters. Dispose of unused products at your local hazardous waste site.



Landscape Plants: Fertilizing & Watering

Prevent runoff of water, pesticides, and fertilizer from your landscape plantings. Trees and shrubs require less fertilizer and less frequent irrigation than lawns. Too much water is the most common cause of decline in trees and shrubs in the landscape, either through directly killing plants or making them more susceptible to disease. Fertilizer runoff into storm drains pollutes creeks and streams. Maintain plant health and protect water quality by fertilizing and watering correctly.

Fertilize appropriately.

- + Many woody ornamentals such as nonflowering trees and shrubs do not require fertilizer, even at planting.
- + Determine the actual cause of unhealthy looking plants before deciding to fertilize. Nutrient deficiency symptoms in most woody landscape plants are often due to unhealthy roots, poor soil conditions, or improper care.
- + Fruit trees, vegetables, and flowering annual plants have variable fertilizer requirements. Follow plant care guidelines to avoid overapplication.
- + If fertilizer is required, choose a slow-release type, such as organic fertilizers, that will feed the plant throughout the season.
- + Fertilizer should be applied at the "drip line" of trees and shrubs and not directly on the trunk or crowns. The drip line is the area directly below the leaf canopy.
- + Avoid overfertilizing. Too much fertilizer can result in plant damage, excessive plant growth, and additional water needs by the plant.

Water properly to promote plant health and avoid runoff.

- + Water plants during the cooler hours of the early morning rather than during the heat of the day or in windy weather.
- + Use drip irrigation and soaker hoses to deliver water only where needed.
- + Check soil moisture before watering.
- + Use mulches on the soil surface to conserve moisture, control weeds, and maintain a uniform soil temperature.



Lawn Watering

Attention to your watering system is important for maintaining an attractive, healthy lawn and protecting the environment. Poor watering practices are the number one reason for dead and dying areas in turf and a common source of urban runoff. Runoff can move fertilizer, pesticides, or other hazardous chemicals down storm drains and into our waterways. Good landscape design and an irrigation system that is properly installed, maintained, and operated can eliminate most runoff and improve the health of your lawn.

Landscape with watering in mind.

- + Avoid planting turf species that require frequent watering, such as bluegrass or ryegrass.
- + Design your landscape to minimize water running off the lawn onto hard surfaces and into storm drains.
- + Install nonirrigated buffer areas, which include water-efficient plants or permeable features, next to sidewalks or on slopes to reduce runoff onto hard surfaces.
- + Aerate heavy or compacted soils so water can easily move down to reach grass roots.
- + Install an irrigation system that can be adjusted to properly water areas of your landscape that have different requirements.

Water only when your lawn needs water.

- + Water requirements vary according to turf species, location, and month of the year.
- + Most lawns need water when the top 2 inches of soil have dried out.
- + Shady and sunny areas and different soil types will have different water requirements.
- + Deeper, less frequent watering promotes deep root growth and is best for most lawns. Divide your lawn's water requirements into 2 to 3 waterings a week.
- + Observe your sprinkler system to be sure it is not producing runoff, especially on slopes. If you see runoff, use shorter watering times and repeat the cycle to allow time for water to move into soil.
- + Water early in the morning when evaporation and wind are minimal.



UC RESOURCES TO HELP MAINTAIN A HEALTHY LANDSCAPE

- UC Cooperative Extension
Master Gardeners of
Orange County
- <http://www.uccemg.com/>

The screenshot shows the homepage of the UC Cooperative Extension Master Gardeners of Orange County website. The header includes the University of California logo, the site title, and navigation links for 'SKIP TO CONTENT', 'SITE MAP', and a search bar. Below the header is a banner image of oranges on a tree. A navigation menu lists categories: Weeds/Pests, Ornamental Plants, Edible Plants, Soils/Fertilizers/Compost, General Gardening, Gardening Projects, and About Us. The main content area features a welcome message and several sections: 'What's Going On In Our Community?' with a workshop series announcement, 'What's New This Week on The MG Site?' with links to articles, 'Gardening Videos You Should Watch' with a video icon, and a 'Gardening Event Calendar' table listing upcoming events.

University of California
Master Gardeners of Orange County

SKIP TO CONTENT SITE MAP Enter Search Terms

Weeds/Pests Ornamental Plants Edible Plants Soils/Fertilizers/Compost General Gardening Gardening Projects
About Us

Home
Gardening Hotline
Need a Speaker for Your Event or Meeting?
Garden Workshops & Series
Month to Month Gardening
Where to Find...
Pest Information
Youth Gardens & Workshops
Free Gardening Brochures
Water Quality Information
Red Palm Weevil Status Report
How To Become A Master Gardener
ANR Publications Online Catalog
Orange County UC Cooperative Extension
Volunteer Resources

Welcome to the Master Gardeners of Orange County Website

What's Going On In Our Community?

Gardening Basics for Adults: Growing Edibles - Workshop Series running monthly through April 5, 2012

Free admission and free parking. [Click here for more information.](#)

Gardening Classes at the City of Irvine

Master Gardeners present 2 evening classes on spring gardening. Topics range from practical tips for getting your garden in shape for spring to everything you need to know about growing tomatoes. Classes are free of charge. [Click here for more information on gardening classes.](#)

Using Fruit from the Garden--Jam and Jelly Making

Artisan Food Festival, Great Park, Irvine, April 28, 10am-5pm. [Get more information about the Using Fruit from the Garden--Jam and Jelly Making event.](#)

Youth Garden Workshops

Creating & Sustaining Your Youth Garden: The Fundamentals of Designing, Creating, Enhancing, & Maintaining Educational Gardens. [Get more information and register](#)

Spring 2012 Garden Workshops at the Great Park

Join us for the Spring 2012 Garden Workshop

What's New This Week on The MG Site?

All about Tomatoes...

[Read More](#) | [View All](#)

Gardening Videos You Should Watch

- Garden Pests: Good & Bad
- How to start a compost pile

Video

Gardening Event Calendar

| Event Name | Date |
|---|-----------|
| Great Park Spring Workshops: Fruit Trees for the Home Garden | 3/31/2012 |
| Gardening Basics for Adults #6: Series Recap and Seed Planting | 4/5/2012 |
| Great Park Spring Workshops: Beautiful Flowering Natives for Your Garden | 4/7/2012 |
| Great Park Spring Workshops: Grow It Now - What's Hot Now (Edibles for the Warm Season) | 4/21/2012 |
| Great Park Spring Workshops: Using Fruit from the Garden--Jam and Jelly Making | 4/28/2012 |
| Great Park Spring Workshops: Edible Gardening in Small Spaces | 5/5/2012 |



QUESTIONS?