



Composting Is Good for Your Garden and the Environment

PAMELA M. GEISEL, Academic Coordinator, UC Statewide Master Gardener Program; and
DONNA C. SEAVER, Program Representative, UC Statewide Master Gardener Program

WHY COMPOST?

Composting is good for several reasons:

- It saves water by helping the soil hold moisture and reduce water runoff.
- It benefits the environment by recycling organic resources while conserving landfill space.
- It reduces the need for commercial soil conditioners and fertilizers.

Compost provides many benefits. It

- adds nutrients and beneficial microbes, holds water, and improves plant growth
- provides a supplemental amount of slow-release nutrients
- increases soil organic matter
- encourages healthy root structure
- lightens clay soils and helps sandy soils hold water
- attracts and feeds earthworms and other beneficial soil microorganisms
- helps balance pH (acidity/alkalinity)
- helps control soil erosion
- helps protect plants from drought and freezes
- decreases use of petrochemical fertilizers
- moderates soil temperature and reduces weeds when used as a mulch



WAYS TO USE COMPOST

Different composts have different properties, and vary in their suitability for various uses. Compost can be used as mulch, topdressing, soil amendment, or as an organic fertilizer.

- Mix it into flower bed and vegetable garden planting areas to improve soil properties. Before planting, mix a 3- to 4-inch layer of compost into newly reclaimed or poor soils. Mix a ½- to 3-inch layer of compost into annual garden beds at least once a year. Do not plant trees in small holes filled with compost, as this could cause root restriction. (For equivalents between U.S. and metric systems of measurement, a conversion table is provided at the end of this publication.)

- Spread a 1- to 4-inch layer of coarse compost around flowers, shrubs, trees, and vegetables as a mulch. Composts with larger particle size are generally better for mulches.
- Apply and maintain a 3-inch layer of coarse compost around trees and shrubs, keeping it at least a foot away from tree trunks.
- Top-dress your lawn by evenly spreading a 1/8- to 1/2-inch layer of compost over established grass (high end only for cool-season species such as tall fescue that are not mowed as short as warm-season grasses).
- Use compost in potting mixes for indoor and outdoor plants. Sprinkle a thin layer of compost around houseplants. Make a potting soil by mixing one part compost with one part sand, one part ground bark, and one part peat moss.
- If you don't have a garden—use compost with house plants, give it to a friend, or donate it to a community garden.

HOW TO COMPOST

Several methods of composting can be used. Talk with your local Master Gardener to learn

- which method will work best for the time, energy, and materials you have to devote to the process
- which method will give you the amount of compost you need and in the time you need it
- the details for successfully using the method that best suits you and your gardening needs

COMPOSTING BASICS

1. Chop materials 1/2 to 1 1/2 inches for rapid composting.
2. Mix equal volumes of carbon-rich dry brown and nitrogen-rich green plant materials.
3. Keep compost only as moist as a wrung-out sponge.
4. Turn every few days to fluff the pile so air can penetrate.
5. A hot pile composts quickly, a cool pile takes much longer.
6. Finished compost should smell earthy, never rancid.

DO COMPOST

Browns	Greens
most sawdust	tea bags
chopped woody prunings	citrus rinds
pine needles	coffee grounds
fallen/dried leaves	coffee filters
dried grass	shrub and grass clippings
straw	fruit waste
shredded paper	vegetable waste
shredded cardboard	wilted flowers
shredded newspaper	young weeds
old potting mix	

DO NOT COMPOST

dirt/soil
ashes from a stove, fireplace, or barbecue
animal products (meat, bones, fish, grease/fat)
dairy products
sawdust from plywood/treated wood
diseased plants
seed-bearing weeds (e.g., Bermuda grass, ivy, oxalis bulbs, burr clover)
manure or human waste

Note that adding manure to compost piles from any animal should be avoided because there is a potential risk of disease-producing bacterial contamination that may be harmful to humans. Commercial composting operations effectively control pathogens. Backyard piles may not, however, because they are smaller and may not maintain sufficient heat.

Compost is generated when organic matter is consumed and decomposed by microorganisms under favorable environmental conditions. Key management factors for the compost process include maintaining a good nutrient balance, correct moisture content and temperatures, and adequate aeration. Composting is a managed process for accelerating the decomposition of organic matter while improving its characteristics.

The majority of compost formation should occur when temperatures range from 100° to 150°F (38° to 66°C). At these temperatures the rate of organic matter decomposition is maximized and indicator species of pathogens are reduced to non-detectable levels. The Environmental Protection Agency (EPA) has found that decomposing organic

matter in aerated static piles exposed to 131°F (55°C) for 3 days is enough to eliminate parasites, fecal bacteria, and plant pathogens as well as inactivate most weed seeds. However, piles need to be turned 5 times and maintained at 131°F (55°C) for 3 consecutive days between turnings. Turning the pile regularly to allow cooler surface zones to mix with hot center areas is recommended to maintain 131°F (55°C).

Please contact your local Master Gardener for more information or go online to <http://camastergardeners.ucdavis.edu>.

We gratefully acknowledge support for this project from the *Elvenia J. Slosson Research*

Endowment for Ornamental Horticulture. Content used in this publication was excerpted from *Compost in a Hurry* (ANR Publication 8037) by Pamela M. Geisel and Carolyn L. Unruh; *California Master Gardener Handbook* (ANR Publication 3382), edited by Dennis Pittenger; *Basic Composting* and *Composting 101*, UC Cooperative Extension, Placer and Nevada Counties; and *Compost Use for Landscape and Environmental Enhancement* by UC editors Janet Hartin and David Crohn, published by California Integrated Waste Management Board.

Poster design and illustrations: Will Suckow Illustration.

RESOURCES ACCESSIBLE ONLINE

Web Sites

California Master Gardeners

<http://camastergardeners.ucdavis.edu/>

UCCE Placer/Nevada Counties Composting Education Project

http://ceplacer.ucdavis.edu/Master_Gardener252/

Publications/Brochures

California Master Gardener Handbook

ANR Publication 3382

<http://anrcatalog.ucdavis.edu/InOrder/Shop/ItemDetails.asp?ItemNo=3382>

Compost in a Hurry

ANR Publication 8037

<http://anrcatalog.ucdavis.edu/InOrder/Shop/ItemDetails.asp?ItemNo=8037>

Compost Use for Landscape and Environmental Enhancement

<http://www.ciwmb.ca.gov/Publications/Organics/44207002.pdf>

Key Points of Control and Management for Microbial Food Safety: Edible Landscape Plants and Home Garden Produce

ANR Publication 8101

<http://anrcatalog.ucdavis.edu/InOrder/Shop/ItemDetails.asp?ItemNo=8101>

Water Conservation Tips for the Home Lawn and Garden

ANR Publication 8036

<http://anrcatalog.ucdavis.edu/InOrder/Shop/ItemDetails.asp?ItemNo=8036>

METRIC CONVERSIONS

English	Conversion factor for English to metric	Conversion factor for metric to English	Metric
inch (in)	2.54	0.394	centimeter (cm)
foot (ft)	0.3048	3.28	meter (m)

FOR FURTHER INFORMATION

To order or obtain ANR publications and other products, visit the ANR Communication Services online catalog at <http://anrcatalog.ucdavis.edu> or phone 1-800-994-8849. You can also place orders by mail or FAX, or request a printed catalog of our products from

University of California
Agriculture and Natural Resources
Communication Services
6701 San Pablo Avenue, 2nd Floor
Oakland, California 94608-1239

Telephone 1-800-994-8849 or 510-642-2431
FAX 510-643-5470
E-mail: danrcs@ucdavis.edu

©2009 The Regents of the University of California
Agriculture and Natural Resources

All rights reserved.

No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the written permission of the publisher and the authors.

Publication 8367

ISBN-13: 978-1-60107-637-3

The University of California prohibits discrimination or harassment of any person on the basis of race, color, national origin, religion, sex, gender identity, pregnancy (including childbirth, and medical conditions related to pregnancy or childbirth), physical or mental disability, medical condition (cancer-related or genetic characteristics), ancestry, marital status, age, sexual orientation, citizenship, or service in the uniformed services (as defined by the Uniformed Services Employment and Reemployment Rights Act of 1994: service in the uniformed services includes membership, application for membership, performance of service, application for service, or obligation for service in the uniformed services) in any of its programs or activities.

University policy also prohibits reprisal or retaliation against any person in any of its programs or activities for making a complaint of discrimination or sexual harassment or for using or participating in the investigation or resolution process of any such complaint.

University policy is intended to be consistent with the provisions of applicable State and Federal laws.

Inquiries regarding the University's nondiscrimination policies may be directed to the Affirmative Action/Equal Opportunity Director, University of California, Agriculture and Natural Resources, 1111 Franklin Street, 6th Floor, Oakland, CA 94607, (510) 987-0096. **For information about ordering this publication, telephone 1-800-994-8849. For assistance in downloading this publication, telephone 530-754-3927.**

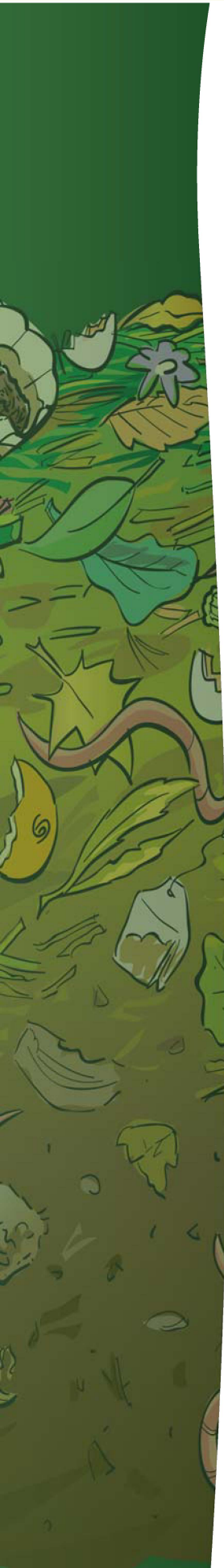
To simplify information, trade names of products have been used. No endorsement of named or illustrated products is intended, nor is criticism implied of similar products that are not mentioned or illustrated.

An electronic copy of this publication can be found at the ANR Communication Services catalog Web site, <http://anrcatalog.ucdavis.edu>.



This publication has been anonymously peer reviewed for technical accuracy by University of California scientists and other qualified professionals. This review process was managed by the ANR Associate Editor for Environmental Horticulture.

xm-pr-09/09-LR/CR



Ask a UC Master Gardener



Composting is Good for Your Garden and the Environment

Using compost helps

- grow healthier plants
- reduce landfill
- save water
- improve soil properties
- decrease need for chemical fertilizers



Please contact your local Master Gardener for more information (<http://camastergardeners.ucdavis.edu>).

We gratefully acknowledge support for this project from the *Elvenia J. Slosson Research Endowment for Ornamental Horticulture*. Content used in this publication was excerpted from *Compost in a Hurry* (ANR Publication 8037), by Pamela M. Geisel and Carolyn L. Unruh; *California Master Gardener Handbook* (ANR Publication 3382), edited by Dennis Pittenger; *Basic Composting and Composting 101*, UC Cooperative Extension, Placer and Nevada Counties; and *Compost Use for Landscape and Environmental Enhancement*, edited by UC editors Janet Hartin and David Crohn and published by California Integrated Waste Management Board.



Project management: Pamela M. Geisel; Donna C. Seaver. Poster design and illustrations: Will Suckow Illustration. No endorsement of listed sites, products, or information is intended, nor criticism implied of those not mentioned. The University of California does not discriminate in any of its policies, procedures, or practices. The University is an affirmative action/equal opportunity employer.



September 2009

Composting is Good *for Your Garden* *and the Environment*

Ways to Use Compost

Compost can be used as mulch, topdressing, soil amendment, or organic fertilizer.



- Mix it into planting areas to improve soil properties.

- If you don't have a garden—use it with house plants, give it to a friend, or donate it to a community garden.



Composting is Good *for Your Garden* *and the Environment*

How to Compost

There are several methods of composting.
Ask your local Master Gardener for specifics.

Composting Basics



1. Chop materials $\frac{1}{2}$ to $1\frac{1}{2}$ inches.
2. Mix equal volumes of carbon-rich dry brown and nitrogen-rich green plant materials.
3. Keep compost only as moist as a wrung out sponge.
4. Turn often.