Common Sense Gardening

A guide to plant care and pest control
for the earth-friendly gardener.

PREPARED BY

Thurston County Local Hazardous Waste Program

A JOINT EFFORT OF THURSTON COUNTY ENVIRONMENTAL HEALTH AND
THURSTON COUNTY DEPARTMENT OF WATER AND WASTE MANAGEMENT

What is Common Sense Gardening?

The Common Sense Gardening program is designed to assist home gardeners in growing healthy, productive gardens and lush landscapes while reducing their reliance on pesticides and synthetic fertilizers. It is an environmentally sensitive approach to plant care and pest control that encourages gardeners to look at their gardening habits in a different light, weighing gardening practices against potential health and environmental impacts.

Common Sense Gardening is not a "no pesticides ever" program. It is based on well-known and researched integrated pest management techniques, emphasizing biological and cultural pest controls and alternatives-to and least-toxic products. The careful use of pesticides is suggested as a last resort.

Many gardeners strive for totally pest-free landscapes. Others have pesticide application routines based on annual schedules, regardless of whether or not a pest is present. Common Sense Gardening stresses using pesticides only if a pest is present and correctly identified. A totally pest-free landscape is not biologically or economically feasible.

How does Common Sense Gardening work? This guide outlines the four basic steps: detecting problems in the landscape; identifying problems and causes; deciding when to act; and choosing a control option when needed.

Step 1: Detecting Problems in the Landscape

Regularly visiting the garden to observe your plants for the presence of insects, disease and weeds is important. By keeping an eye on the landscape and garden, you become aware of the subtle changes plants display under stress, you can catch problems early, and you will be able to pin-point which plants have problems.

Temperature directly affects the growth and development of pests. Insects do not follow a calendar, therefore annual routine applications of pesticides without correctly identifying the pest are a waste of time and money. Controls are most effective during a specific growth stage in the insect's life cycle.

Step 2: Identifying Problems and Causes

Incorrect identification of lawn and garden problems causes more unnecessary pesticide applications than most people realize. Never apply a pesticide if a pest is not seen and identified. Most plant problems (about 70 percent) are not caused by insects or diseases and can be solved without using pesticides. Common causes of plant problems include: weather stresses (such as frost injury, winter cold damage and drought), poor soil, poor landscape design and poor care.

If damage is noticed but the pest is not seen, gather information by answering the following questions: What does the damage look like; are there brown spots, holes or color distortions? Where is the damage located; on leaves, flowers, fruit or bark? Is the plant in a sunny, shady or damp location? What type of plant has the problem; is the plant a lilac, azalea or cherry tree?

If a pest is present, correctly identifying the pest is necessary for effective control. It is helpful to know what the pest looks like, where and when it feeds, what time of year it is usually found in abundance, and where and how the pest's damage appears. For example, aphids are small, live in large groups and are typically found on the undersides of leaves in late spring. Aphids typically cause leaf curl and distortion of shoot tips, but usually will not seriously affect a healthy tree or shrub.

Keep in mind other factors, too. Random or unusual human activity can also cause problems. For example, bark accidently scraped off a tree last year may be the reason the plant is doing poorly this year.

After piecing together the available clues, call Thurston County's Common Sense Gardening Coordinator at (360) 754-4111, TDD number (360) 754-2933 or call WSU Cooperative Master Gardeners at (360) 786-5445.

Step 3: Deciding When to Act

Gardeners often become alarmed when a pest is first noticed, however, it is surprising how often insect damage that looks serious does not actually affect the plant's health. For example, root weevil damage to rhododendron leaves looks terrible, yet it does not affect the health of the plant. Rather than trying to maintain a pest-free landscape, focus on keeping plants healthy to increase resistance to pest problems. Unless more than 30 percent of the leaves, fruit or flowers are damaged, no controls may be needed.

Step 4: Choosing Control Options

Many effective alternatives to pesticides are available, such as Bt *(Bacillus thuringiensis)* for caterpillars, like tent caterpillars. Using these alternatives reduces adverse affects associated with pesticide production, purchase, use and disposal.

This guide outlines the basics needed to keep plants healthy and thereby ward off problems. It discusses alternatives to pesticides, like traps and the use of beneficial insects, and has a list of less-toxic pesticides.

INSECT DAMAGE THAT LOOKS SERIOUS MAY NOT ACTUALLY AFFECT THE PLANT'S HEALTH.

Warding Off Problems

Studies show that 90 percent of all landscape problems arise from plants that are weakened or stressed. Trees, shrubs and lawns are often weakened and stressed from poor care or poor soils. Plants that are properly cared for—fertilized and watered as needed and planted correctly in organically rich soils-will be less susceptible to pests.

Many insects and diseases that kill plants are opportunistic; they attack plants that are already weakened, injured or stressed in some way. Researchers have documented that insects actually seek out unhealthy plants using odor and light spectra emitted or reflected from the sick plants. So, keeping plants healthy is the key to reducing pest problems and our use of pesticides.

Building Healthy Soil — Healthy soil is the building block for healthy plants. If your trees and shrubs lack the color, vigor and lush growth that they should have, in spite of the addition of fertilizers and pesticides, the soil is the first place to look. Unfortunately, as most homes are built, the topsoil is often scraped off, then bulldozers and other heavy construction equipment compact the existing subsoil so that it resembles cement. Typically this problem is not addressed and at best, a quick landscape is installed with 2 to 3 inches of imported topsoil spread over the compacted subsoil.

Trees, shrubs and turf may survive this careless installation; however, they rarely thrive, may require more maintenance and will likely have frequent pest problems. The most vigorous plant growth occurs in uncompacted soil, rich in organic matter that is teeming with beneficial microorganisms, insects and worms. If the soil can't be easily dug and turned with a shovel, or has so much sand it doesn't clump together when a handful is squeezed, it probably needs organic matter.

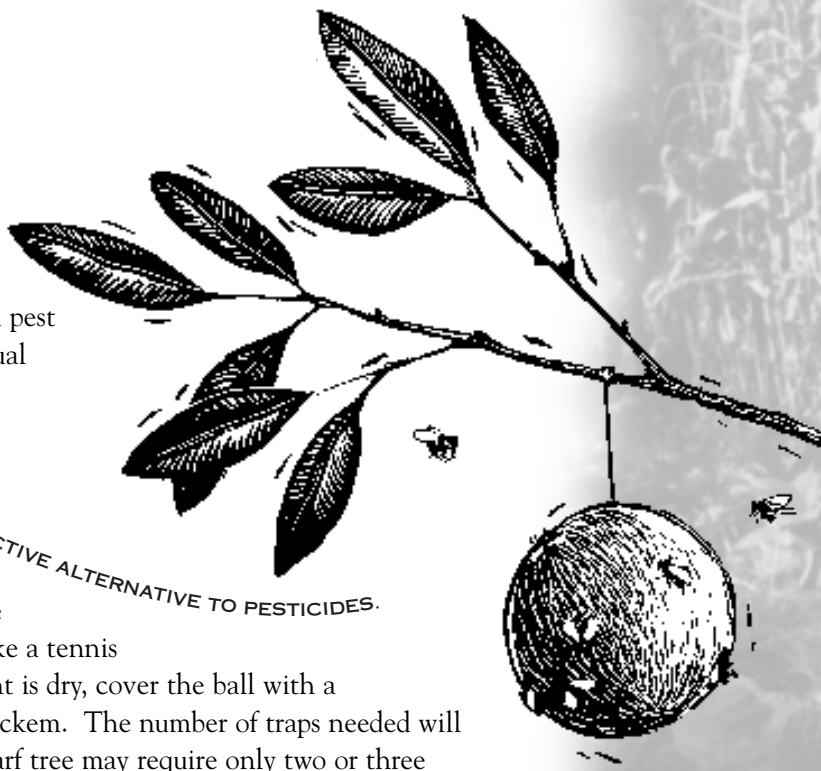
The problem can be solved by adding 6 to 12 inches of organic matter, such as compost or well-aged manure, and rototilling thoroughly. A soil rich in organic matter typically requires less water and less fertilizer and is the first step in growing healthy plants.

Plant Care – Choosing the right plants and locating them in the right place are the most important decisions affecting whether you have a lush, carefree landscape or a landscape that attracts pests and struggles to stay alive. For details on landscape evaluation and plant selection, see Common Sense Gardening "Plan Before You Plant."

Fertilizing, watering, pruning, mulching and mowing are all important landscape maintenance activities. A plant that is properly cared for—planted correctly and fertilized and watered as needed—will be less attractive to opportunistic pests. Generally speaking, trees and shrubs require extra care for 3 years after planting. During this time they need to be kept moist in the summer months and require supplemental fertilizer in the spring. Most tree and shrub deaths occur during the first three years after planting.

Physical Controls

Physical controls destroy a pest outright or alter the site to prevent insect damage. Examples of physical pest controls are traps, barriers, and manual removal.



APPLE MAGGOT TRAPS ARE AN EFFECTIVE ALTERNATIVE TO PESTICIDES.

The apple maggot trap mimics this insects favorite food, the apple. Simply use a round object, like a tennis ball, and paint it red. Once the paint is dry, cover the ball with a sticky material like Tanglefoot or Stickem. The number of traps needed will vary with the size of the tree. A dwarf tree may require only two or three traps, while a standard large variety may need ten or twelve traps per tree. The use of apple maggot traps will reduce damage, but not eliminate it.

Barriers, another effective physical control, prevent crawling insects from gaining access to the plant. Wrapping a tree or shrub's trunk with a sticky adhesive, such as Stickem or Tanglefoot will help control root weevils, codling moth, gypsy moth and ants.

Manual removal of pests is removing and destroying insects by hand. Pruning out tent caterpillar nests before the larvae emerge is an example. Manual removal is most effective when pests are at low numbers and before the pest disperses and infects the entire plant.

Encouraging Healthy Competition

Beneficial insects, such as predators and parasites, are already at work in your landscape, feeding on garden pests. Beneficial insects are called the unseen heroes of the garden because the important role they play in pest control goes unnoticed. Unfortunately, most insecticides kill the beneficial insects as well as the pest. Often, as a result of insecticides, another pest suddenly becomes a serious problem because its natural enemy was killed. This is known as secondary pest outbreak, and is more common than most people realize.

The best way to encourage beneficial insects is to avoid using insecticides when possible. Attracting more beneficial insects is as simple as planting flowers. Many common beneficial insects are attracted to flowers in the sunflower and parsley families, including parsley, sunflower, fennel, caraway, coriander, daisies, yarrow, zinnias and asters.

You can also purchase beneficial predators and parasites to boost the natural populations. The variety of beneficial organisms available to the homeowner is rapidly increasing, including insect predators, parasites, nematodes and microbial species. A list of producers and sellers of biological controls is provided at the end of this guide.

The Last Resort - Pesticides

The purpose of Common Sense Gardening is to help home gardeners reduce their use of pesticides. If after careful evaluation you determine a pesticide is necessary, consider some of the less-toxic pesticides listed in the adjacent table, which lists just some of the effective, less-toxic pesticides available.

When using less-toxic pesticides, it is important to understand that their duration of effectiveness is short. These pesticides are less of a threat to the environment because they break down quickly. For example, if a plant is treated with insecticidal soap for aphids, it may be necessary to repeat the treatment at 5 to 7 day intervals to keep aphid populations under control.

If pesticide use is necessary, apply specifically to individual plants or parts of plants with the worst pest problem. Always read and follow the label when using any pesticide. The label provides useful information on application rates, timing, safety precautions and target pests.

Waste Reduction

Common Sense Gardening encourages gardeners to conserve water, to use alternatives to pesticides and to choose less-toxic pesticides when necessary. Protecting public and environmental health by reducing the use of hazardous products is a priority in Thurston County's Hazardous Waste Program.

By taking action to reduce the use of pesticides and synthetic fertilizers and conserve water, Common Sense Gardeners are protecting our drinking water, lakes, streams, rivers and Puget Sound. Gardeners who discover they have outdated, banned or restricted pesticides should safely dispose of them free at HazoHouse, Thurston County's household hazardous waste collection center. For more information, please call the Thurston County Waste Line at (360) 754-4348, or the TDD line for the hearing impaired, (360) 754-2933 during regular business hours.

For more information about Common Sense Gardening, call Thurston County Environmental Health Division at (360) 754-4111 during regular business hours.

PLANT FLOWERS, SUCH AS ASTERS, TO ATTRACT BENEFICIAL INSECTS.

Further Reading

WSU Cooperative Extension Bulletin #EB 1505, *Planting Landscape Plants*.

Grow Smart, Grow Safe, A Consumer Guide to Lawn and Garden Products, produced by Washington Toxics Coalition, 4649 Sunnyside Ave. N, Seattle, WA 98103; 206-632-1545, www.watoxics.org

Daar, Sheila; Olkowski, William. *Common Sense Pest Control*, The Taunton Press 1996. An excellent book outlining least-toxic controls.

Flint, Mary Louise. *Pests of the Garden and Small Farm*. VCANR Pub 3334, University of California, ANR Pubs, Oakland, CA 276pp.

Resources

Many products suggested in this guide are available locally. Check your favorite local nursery. The following list provides additional resources for alternative products.

Gardens Alive
5100 Schenley Place, Lawrenceburg, IN 47025; 1-812-537-8650, www.gardens-alive.com

Integrated Fertility Management
1422 North Miller St. #8, Wenatchee, WA 98801; 1-800-332-3179, www.agricology.com

Rincon–Vitova Insectaries Inc. – Distributes beneficial insects. P.O. Box 1555, Ventura, CA 93022; 1-800-248-2847, www.rinconvitova.com

Recommended Web Sites

EPA Beneficial Landscaping: yosemite1.epa.gov/R10/ECOCOMM.NSF/BLstartpage

Integrated Pest Management Information Service: www.efn.org/~ipmpa

Pesticide Information (Extension Toxicology Network): ace.orst.edu/info/extoxnet

Common Sense Gardening: www.co.thurston.wa.us/health/ehrp/gardening.html

WSU Cooperative Extension Gardening in western Washington: gardening.wsu.edu

Washington Toxics Coalition (a non-profit organization): www.watoxics.org

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