

# Promote Plant Health



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**H**ealthy, vigorous plants are less vulnerable to attack by insects and disease. Become familiar with the steps below and you will have a prescription for maintaining the health of all the plants in your landscape.

## 1. PROVIDE CONDITIONS THAT ARE BEST FOR THE PLANT

Find out if a new plant will thrive in sun or shade, in acid or alkaline soil, and place it in a location that fits those needs. Most plants at the garden center have an identification tag that provides details about the conditions required by the plant. If this information is not provided, check reference books or contact your local extension office.

Find out if you can change conditions in your landscape to better suit your established plants. Perhaps you can acidify the soil or remove some plants to let more sunlight reach others.

## 2. MULCH PROPERLY

Most plants benefit from a two- to three-inch-deep layer of composted organic matter called mulch. Mulch helps keep the weeds out of a planting area and reduces evaporation of soil moisture.

The mulch will decompose over time, releasing nutrients that can be used by the plants. You occasionally will need to replenish the mulch on your landscape beds, but do not pile excessive mulch on top of the root systems of your plants.

Too much mulch can smother the roots and prevent rain water from reaching the soil.

Make sure the mulch is not touching the trunks or stems of your landscape plants. If you pile organic mulch against the trunks of trees, you will provide shelter for rodents that can girdle trees by chewing on the bark. A mulch pile also can shelter harmful insects. A moist mulch pile against the trunk can enable organisms that rot dead organic matter to start rotting the bark of the tree. Keep mulch away from tree trunks to prevent these problems.

Do not use uncomposted wood chips as a mulch near houses or along drives where vehicles will be parked. This kind of mulch provides ideal growing

conditions for a troublesome fungus called "artillery fungus." The artillery fungus shoots spore masses that stick to vinyl siding, automobiles, and other objects. The dark spore masses, each up to 1/16-inch in diameter, are extremely difficult to remove and can be very unsightly.

## 3. GIVE PLANTS ENOUGH WATER

Give plants enough water when you install them and keep the soil moist but not soaked through the first year. Most garden plants and ornamentals need about one inch of rainfall per week. Water-loving plants, plants in raised bed gardens, and plants growing in sandy or rocky soils may need even more water.

Drought-tolerant plants and plants in areas that have soil high in clay or organic material may need less frequent watering. Check to see if you need to water a plant by digging three or four inches below the surface and feeling the soil with your finger to see if it is dry.

It is important to water infrequently and deeply. If you frequently wet only the top inch or so of soil, most of the new roots will grow in the moist soil near the surface where they are more likely to dry out. You can water with a garden hose turned on very low, setting it in one spot until the water really soaks in and then moving it to other spots as needed. Or use a soaker hose or drip irrigation system to put water on the root area. Watering with an overhead sprinkler is not recommended for some plants because it wets the leaves, providing a favorable environment for plant disease organisms, and also wastes water through evaporation.

## 4. FERTILIZE PLANTS ONLY AS NEEDED

You want to encourage root growth on newly planted trees and shrubs, so having the right balance of nutrients is especially important in the first two to three years after installation. If the tree is in a lawn area that is fertilized properly, it may receive sufficient fertilizer from the lawn application. Mature, established trees and shrubs usually do not require a lot of fertilizer. You want to maintain existing growth but avoid stimulating excessive new growth.

Of the seventeen elements that plants require, only five may need to be replenished at some time in most soils. These five are nitrogen, phosphorus, potassium, calcium, and magnesium. To find out exactly what nutrients you need to add to your soil, have the soil tested through your local garden center or extension office. The report will tell you your soil's pH (degree of acidity or alkalinity) and which of the major nutrients are needed to keep your plants healthy.

Complete fertilizers contain the three macronutrients: nitrogen (N), phosphorus (P), and potassium (K). The three numbers on fertilizer bags represent the percent of plant-available N, P, and K in the bag, in that order. For example, a bag of a 10-6-4 fertilizer contains 10 percent N, 6 percent P (in the form of phosphate), and 4 percent K (in the form of potash).

A soil test will tell you if your tree or shrub needs fertilizer and, if so, exactly how much to use and when to use it. A general, less-specific recommendation for fertilizing trees in most soil types is to use about two pounds of a 10-10-10 fertilizer per hundred square feet all around the tree, extending to four to sixteen feet past the dripline, which is where most of the feeder roots are. If using a granular fertilizer, lightly rake it into the surface and water thoroughly to soak it into the soil. Or, if you prefer, you could supply nutrients by using a thin layer of compost or a mixture of rotted manure and bonemeal. The best time to fertilize is in the fall after the leaves have turned color or fallen. You also can split the recommended amount and apply half in fall and the rest in early spring (March to early April). Do not apply fertilizer during drought conditions or when the soil is frozen.

## 5. PRUNE TO KEEP PLANTS HEALTHY

By pruning your shrubs and trees when needed, you can improve their appearance, make them stronger, and prevent defects that might require major tree surgery in the future.

You can guard the health of your plants by pruning

- dead, dying, or unsightly branches;
- sprouts growing at or near the base of a tree trunk;
- branches that grow toward the center of the tree or shrub, making it too dense;
- crossed branches that rub against each other; and
- multiple leaders in young trees.

Prune deciduous trees after they have leafed out in spring through the summer. Needled evergreens can be pruned in late winter. Avoid pruning in late summer because it may stimulate new growth that will be susceptible to winter injury.

Most flowering shrubs can be pruned immediately after the bloom period to allow adequate time for new growth and the formation of flower buds for the next season.

For more specifics on plant maintenance, see the fact sheet *Keep Plants Well Groomed* in this series.

## FOR MORE INFORMATION

Penn State Cooperative Extension, Delaware Cooperative Extension, and the Southeast Pennsylvania IPM Research Group have been working together to provide information and educational materials on IPM and landscaping.

This fact sheet, *Promote Plant Health*, is part of a series of educational fact sheets about understanding and using integrated pest management. Other topics in the series include:

- Creating Healthy Landscapes—Introduction
- Choose Plants Wisely
- Plant with Care
- Keep Plants Well Groomed
- Monitor Pests and Keep Records
- Pest Management Methods
- Recognize and Conserve Natural Enemies
- Use Nature's Signals to Manage Landscape Pests

Copies are available from your local extension office.

The Southeast Pennsylvania IPM Research Group is a collaboration of university and industry horticulture professionals who are inspecting landscapes across the region to monitor pest populations and share current IPM data. The group is partially supported by the Pennsylvania IPM Program (PAIPM). For more information about the research group, contact Penn State Cooperative Extension, Montgomery County, 1015 Bridge Road, Suite H, Collegeville, PA 19426-1179; phone: 610-489-4315.

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