



Garden Tips:

Attracting Bats to the Garden

There has been interest among gardeners in recent years in attracting bats to the home garden for managing insects. Of course, the obvious method is to construct a bat house where they can roost and raise their young and thus concentrate their insect-feeding activity nearby. However, bats are particular about the design and location of their living space. A stable temperature of between 80F and 110F degrees is needed in bat nurseries, depending on the species. Therefore, the house needs to be as airtight as possible, so seal all external joints with silicone caulk to prevent heat loss. Also, orient the house to receive maximum sunlight, particularly in early morning; a southern exposure works well.

A few other tips: Western red cedar is the recommended construction material; do not treat the bat house with paint or varnish as bats are sensitive to chemicals; erect houses 10 to 15 feet off the ground and protect from north and west winds; houses placed within a quarter mile of a permanent water source are more attractive to bats than those without water nearby.



What is "hydrogel?"

Hydrogels are crystal-like polymer that absorb and hold water – they are mixed into soilless mixes for containers, for example. Individual particles will absorb between 60 and 400 times their dry weight in water, depending on the specific type. This absorbed water is then slowly made available to plant roots to prevent or delay water stress. This product is useful in small containers and hanging baskets that tend to dry out quickly.



Mulching a Newly Planted Tree

Apply no more than two inches of mulch around newly planted trees and shrubs and keep the mulch a few inches away from plant crowns. Do not pile mulch up in deep cone-shaped mounds around tree trunks, which can hold moisture around trunks and potentially lead to crown and stem rots. Extend mulch out one to two feet beyond the planting hole to allow for the season's root growth for trees and shrubs, which benefits establishment.

Surface Rots in the Yard

Many gardeners are faced with the problem of tree surface roots. These are difficult to mow or walk over and can lead to decline and death of nearby grass or groundcovers. Gardeners often attempt

to remedy the situation by adding fill soil over the roots and then replanting grass or groundcover. However, this addition of soil reduces the concentration of soil oxygen needed by roots to survive and the tree will begin to show symptoms of decline over time; sometimes this occurs immediately and sometimes it occurs over a period of years. Visible symptoms of injury may include small, off color leaves, premature fall color, suckering along the main trunk, and dead twigs throughout the canopy of the tree or even death of large branches.

Injury will vary by tree species, age, health of the tree, depth and type of fill and drainage. Trees that are usually severely injured by additional fill include sugar maple, beech, dogwood, many oaks, pines and spruces. Birch and hemlock seem less affected and elms, willow, London plane tree, pin oak and locust seem least affected. Older trees and those in a weakened state are more likely to be injured than younger, more vigorous trees.

A better way to deal with surface roots is to cut a bed around the offending root system and cover with coarse mulch. Trying to establish grass or groundcover in among surface roots is often difficult, if not impossible to do.

Mole Problems

Moles and their damage are most noticeable after rains, when the soil is soft and suitable for tunneling. In the spring and summer, damage consists of raised tunnels that wind through the lawn and adjacent flowerbeds. Moles are insectivores, feeding on live earthworms, grubs, beetles, ants and other insect larvae.



Trapping is the most successful method of getting rid of moles – but patience and persistence is also needed! The best time to trap is early spring when tunnels are first noticed or after the first fall rains. Traps work well because they capitalize on the mole's natural instinct to clear an obstructed tunnel. A harpoon trap is perhaps the easiest to use; follow directions that come with the trap. If after two days no mole is caught, reset it over another active tunnel.

Although other remedies, such as bleach, petroleum products, lye, sonic devices, broken bottles, chewing gum and the "mole plant" (*Euphorbia lathris*) claim to keep moles out of lawns and flowerbeds, no known research supports these claims.

Protect Honeybees in the Garden



You can do a few things to protect honey bees in your own garden. One is to use integrated pest management methods, so that the use of insecticides is limited. Insecticides that are considered "highly toxic" to bees include diazinon, lindane, malathion, Orthene and Sevin. Relatively non-toxic insecticides include *Bacillus thuringiensis* (DiPel), pyrethrum, rotenone, insecticidal soap and horticultural oil. Also consider the formulation; wettable powder and dust formulations are more toxic to bees than are emulsifiable concentrates (liquids).

If you must use an insecticide to treat a pest, do so when bees are least active, which is usually in early morning or late evening. Rely on "soft" insecticides such as soaps and oils for aphids, whiteflies and other soft-bodied insects. If possible, don't spray any flowering plants that are attractive to bees.

Brown Spots on Leaves

Cool, wet spring weather contributes to the development fungal diseases. Ash anthracnose is a fungal disease that primarily attacks white ash, but sometimes-green ash. Infection occurs just after bud break' with symptoms becoming evident several weeks later. Large, irregular brown areas develop in the young leaflets, following the veins and extending to the leaflet margin. Leaflets may also be deformed and leaf drop from trees can be severe. Though leaf drop may be considerable, especially from the lower parts of the canopy, overall tree health is usually not severely affected and trees usually re-foliate.

Fungicide control is rarely warranted because anthracnose usually does not seriously damage tree health and adequate control is seldom achieved. Instead, practice good tree care to promote vigorous growth, which aids general tolerance to the effects of this disease and rapid re-foliation in seasons when this disease is severe.

Choose Disease Resistance

As this season progresses, we will be confronted with many plant disease problems. Some will be harmless, some a nuisance and some quite devastating. If we could choose a preferred method of disease control, it would be resistance. Of course, that is not always possible.

Disease resistance is the capacity of a plant to lessen the harmful effects of a pathogen. We see fewer disease symptoms on plants with some level of resistance. Resistance is an inherited trait. It seems most useful in preventing diseases such as rust, powdery mildew, vascular wilts and scab; but there are available varieties resistant against many other diseases.

If a pathogen is able to cause only a small amount of disease on a plant, that plant is resistant. If the pathogen causes a large amount of disease, the host is susceptible. Resistance is a continuum from mild disease to severe disease, with all levels in between.

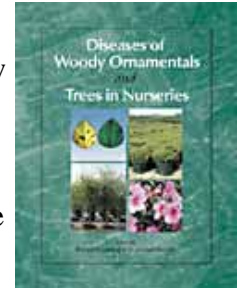
In terms of disease-control options, resistance is preferred over other methods because it

- Reduces expense (no labor or chemical costs).
- Eliminates inconvenience of other disease control activities, such as pruning.
- Eliminates side effects, such as impact of chemicals on the environment.
- May be the only disease control option, as may be the case with Verticillium wilt or crown gall diseases.

Disease resistance may be rated in many ways. There is no uniform rating scale. The usual scales are numerical or ordinal. Many companies that rate their plants for resistance level use a 1 to 9 scale, with 1 indicating most susceptible and 9 most resistant. Beware, however, that other companies use a 9 to 1 scale or other variation. Ordinal scales include ratings using words such as high, medium or low disease resistance. Word scales are easy to understand but are not always as precise as numerical ratings. HR for highly resistant, R for resistant, MR for moderately resistant, MS for moderately susceptible and S for susceptible are commonly used. When using resistant plant material, look for the rating provided by the seller, but also look for an explanation of the scale.

Where do we find disease-resistance information? There is no one central location. It can be found in a variety of places, some highly visible and some difficult to find. Web searches have made this information more available. Some sources to try include university publications; botanic garden trials; breeding and selection programs, such as the U. S. National Arboretum, land grant universities and the private sector, plant societies, such as the hosta society.

There are also textbooks and other publications that list resistance information. Some of this information will last for many years; and some will be short-lived, as new pathogen races develop. An excellent book that discusses available disease-resistant cultivars is *Diseases of Woody Ornamentals & Trees in Nurseries*, by APS Press, St. Paul, MN. Some journals and newsletters that discuss current resistance information include California Agriculture, Greenhouse Grower, Mycologist, Plant Disease and the Ohio Florist Association Bulletin. Always be open to these and other sources of information. The U of I. Report on Plant Disease series provides a starting point.



Who sells resistant plant material? Identifying the resistant plants is useless if the plants are not available. Often it is best to start with operators of local garden centers that know the disease problems in an area and try to find sources of resistance in locally adapted plants. A program called Chicagoland Grows, Inc., evaluates plants that do well in northern Illinois and provides a list of retail businesses that sell them. The Center for Development of Hardy Landscape Plants provides similar information in Minnesota. Undoubtedly, there are other such sources.

Try to find disease-resistant varieties in the plants you purchase this spring, especially for areas where you had problems in the past. As an example, there are many varieties of phlox with powdery mildew resistance. Some tomatoes have resistance to Verticillium and Fusarium infection. Most new crabapples are resistant to scab. There are hundreds of other examples, so look into disease resistance now, before you purchase or plant.

Source: Nancy Pataky, University of Illinois