



SMARTGARDEN™ — Pest and Disease Control

Work with nature to prevent problems before they start

In the last issue we focused on the benefits of working with nature to select and grow plants that are well suited to the growing conditions of your site. This approach significantly minimizes the destruction caused by diseases and pests: Healthy, well-adapted plants are less likely to be seriously damaged by diseases or pests because they can withstand a great deal more than a plant that is struggling from the stress that results from its placement in an inappropriate site.

When discussing garden diseases and pests, it is important to keep in mind that a certain amount of damage is tolerable. Accepting a tolerable level of imperfection does not mean ignoring damage when it occurs. The more reasonable approach is to assess the damage, identify the cause, estimate the potential for further damage, and, depending on that assessment, continue to monitor the problem and adjust cultural practices to reduce its spread or proceed with a specific control measure. The key is to strive for balance rather than perfection. As in human health issues, the best method for dealing with plant pest and disease problems is to prevent them from ever occurring.

KNOW THY ENEMY

Becoming familiar with the most common pests and diseases of the plants you grow is the first step to outwitting them. By understanding their life cycles, feeding and overwintering habits, potential hosts, and natural predators, you can work with nature to tilt the balance in favor of your garden plants.

For example, fire blight is a bacterial disease that infects apples, pears, firethorn, hawthorn, quince, and several other ornamental plants, typically causing sudden dieback of twigs. Serious damage can often be avoided by limiting the use of high-nitrogen fertilizer on susceptible plants, because succulent new growth—which is stimulated by nitrogen—is most prone to infection. If the disease does cause dieback, pruning out and destroying infected stems will generally stop the spread of the disease before it causes serious damage. Left untreated, the infection may move into older wood, where it forms cankers in which the bacteria overwinter. Drastic removal of branches displaying such cankers would be required at that point.

AN OUNCE OF PREVENTION

Gardeners have many relatively simple cultural techniques at their disposal to help avoid serious problems or minimize those that do occur. Practices such as selecting varieties that are resistant to common diseases,

rotating crops so they are in a different spot each season, practicing sanitation, and adjusting planting schedules can thwart many problems.

Resistant varieties. Selecting varieties that are resistant to common pests and diseases that your plants are likely to encounter is one of the easiest ways to give a leg-up to your garden plants. For example, many tomato varieties are resistant to several fungal wilts, viral diseases, and certain nematodes that can devastate a crop. And by selecting varieties of hosta with thicker, more substantial leaves, damage by slugs is often reduced or avoided. (For more about hostas and slugs, see “Hosta Fever,” pages 40 to 45.)

Crop rotation. In vegetable gardens and annual beds, crop rotation—rearranging the placement of plants from one season to the next—is a valuable means of outwitting pests and diseases. Most diseases and many insects are rather specific in their selection of plants that they attack. And many survive over winter in the soil surrounding a host from the previous year. Replanting the same crop in the same space from one year to the next means the chance for problems recurring is very high. Make it hard for the pest or disease. Move your beans to the other side of the garden, plant marigolds where you had petunias last year. This is a simple avoidance technique that can minimize recurring problems.

Sanitation. A cultural tool that should be part of your annual fall clean-up activities is removal and disposal of disease- or pest-infested plant remains from the garden. Many pests and disease-causing organisms overwinter in or on the remains of their former host, often as eggs or spores. Remember that eggs and spores that survive the winter in your garden will be ready to cause problems come spring. When practical, remove the source before it has a chance to spread.

MORE AVOIDANCE TECHNIQUES

Other cultural tools for preventing problems include mulching to create a physical barrier between soil-borne spores and potential hosts; using floating row covers to protect vegetables from flying pests; providing space between plants to ensure adequate air circulation; planting early or late to avoid a pest or disease that invades at a predictable time each year; and removing weeds or other plants that may serve as alternate hosts.

Of course, sometimes more aggressive control methods are necessary and unavoidable. In our next issue, we will discuss several environmentally friendly options for controlling garden pests and diseases.

Rita Pelczar, Associate Editor