

REDUCING PESTICIDES

it's perfectly natural.



HOW TO CONTROL PLANT DISEASES WITHOUT PESTICIDES

Maintaining the health and vigour of a plant is key to avoiding plant diseases. Weak plants are more susceptible to disease. The following tips should help:

- Grow plants in the appropriate soil for their requirements – well drained soil for alpiners; potting soil for container plants; moist or wet soils for bog plants; or a humus enriched soil for woodland plants and most annuals and perennials.
- Give plants the appropriate amounts of light and shade for their specific needs.
- Water plants well, but only when necessary before they wilt or show signs of distress. This encourages deep root development and results eventually in them needing to be watered less.
- Water plants in mid to late morning to discourage disease as the leaves are more likely to dry rapidly and not be scorched.
- Mulch the soil to help the soil to retain moisture.
- Avoid overcrowding and mass planting of one type of plant as this contributes to the spread of disease (and pests).
- Keep tools clean and disinfect with rubbing alcohol if used with diseased plants.
- Dispose of diseased plants and avoid composting them.
- Choose disease resistant varieties and vigorous plants.
- Avoid replacing a similar species of plant in the same area as a diseased or dead one. Soil borne bacteria and fungi can remain in the soil for a considerable time.
- Use companion plants, especially with vegetables, to repel insects that are likely to spread or cause diseases.

There is no "quick fix" for plant diseases. Once they gain a foothold, they are often difficult to get rid of. Prevention is the best antidote. To be able to identify diseases it is important to know what the plant normally looks like in all seasons. Before treating any potential disease, be sure it is correctly identified and not damage from insects or other animals, environmental stress or herbicides.

Plant diseases can be grouped as follows:

- **Cultural disorders** caused by environmental factors such as pollution, soil compaction, salt and herbicide applications; lack of essential nutrients; root girdling; animal injury; or proximity to black walnut or butternut trees.
- **Fungal diseases** include mildews and cankers. They reproduce by spores spread by wind, insects, water or in the soil. They are often present naturally but will infect a plant when it is in a weakened state. Moisture can encourage the growth and spread



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- of fungus. Symptoms include a breakdown of plant cells or soft rot, grey-white, yellow, dark grey or black powdery or slimy growths and stem collapse.
- **Bacterial diseases** are often classified as wilts or blights. They can enter a plant through wounds, pruning cuts or leaf pores and can be spread by rain and splashing water. Symptoms include wilting; water soaked or rotting stems; dark spots or lesions on the stem, leaves and roots of a plant; and premature death of seedlings.
 - **Viral diseases** can be present in any parts of the plant and are spread from plant to plant by insects such as aphids and by humans, when handling, and by propagation. They are usually classified by their symptoms which include: spots, stunting, leaf and flower distortion, yellowing, mosaic patterns and premature death.

Some of the more common plant diseases and suggested pesticide-free treatments include:

Name	Description	Suggested Treatment
Bacterial Wilt	Plants may wilt, recover and then wilt again. Finally, they turn yellow and die. To confirm bacterial wilt, cut a stem open – affected plants have stems that ooze a slimy liquid.	No effective treatment. Remove affected plants and destroy them. Wash hands and tools thoroughly before handling other plants.
Black spot	Tiny black spots with rims of orange or yellow on leaves (frequently of roses). Leaves turn yellow and can drop. Caused by humid weather, lack of air circulation and not enough sun. Aggravated by overcrowding.	Remove affected leaves. Spray with insecticidal soap or a liquid sulphur spray. Repeat regularly throughout growing season. Ensure that roses are watered properly – 1” moisture each week, preferably in one watering. Avoid overhead watering and/or water only in mornings. Plant disease-resistant varieties.
Blight	Sudden wilting or browning of leaves or buds that fail to open. There are various types of blight that affect different flowers and vegetables.	Sulphur or copper-based fungicides may help. Dead-head flowers promptly since blight multiplies in old blooms. Water early in the day since blight is more prevalent in wet conditions.
Fusarium wilt	Commonly called “damping-off disease”. Mostly a problem with vegetable seedlings – stems shrink inwards and may turn black, the plant then wilts, keels over and collapses.	No cure. Once disease attacks, remove and destroy affected seedlings immediately. To prevent, use sterile potting medium for seedlings, keep utensils clean, provide adequate space between seedlings and ensure good air circulation around them. Buy disease-resistant seeds – look for “VF” on seed packets.
Grey mould (Botrytis blight)	A fuzzy, grey mould, often accompanied by brownish, spongy patches on leaves and flowers. While it looks unsightly, it usually doesn’t kill the plants.	Provide good air circulation.