



## ROOT & STEM ROTS

Many plants are subject to root and stem rots, including annuals, perennials and woody plants. These rots are generally caused by any one of a number of soil-borne fungi or by nematodes, but the aboveground symptoms are similar regardless of what is causing the rot. Wilting, stunting, yellowing and dropping of the leaves, particularly the older leaves at the base of the plant, are all symptoms of root rot. Dieback and even death can occur. For trees and shrubs, also look for early fall coloring and for mushroom-like fungi growing *on* the trunk or main branches (not in organic debris near the tree or shrub).

The following summarizes a few of the diseases that can cause root or stem rot, but there are many others.

### **Pythium and Phytophthora**

These two diseases are favored by cool wet conditions, and are particularly likely in plants that have been over-fertilized. They both cause a soft rot in the roots, turning them from a healthy white to a mushy, dark brown or gray. Both can also cause cankers at the base of the plant.

Both of these diseases are most likely to occur in waterlogged soils. Control includes improving soil drainage if possible and avoiding over-watering. Infected plants should be removed and destroyed.

### **Rhizoctonia & Sclerotinia**

These diseases affect a wide range of flowering plants. Damage to roots is not as obvious as in Pythium or Phytophthora, as these diseases cause dry rot. Rhizoctonia grows most rapidly in the hot summer months, and the fungus travels across the soil to attack plant stems. This causes a condition sometimes referred to as "wire stem," an apt description, as the stem just above the soil line turns brown and shriveled, taking on a wiry appearance. Roots appear reddish brown. Rhizoctonia is most frequently the cause of seedlings damping-off.

Sclerotinia also attacks the stems of plants. It causes a distinctive black knot of fungal tissue on the stem or in the pith, and a white, cottony fungus may also be evident at the base of the plant.

The best treatment for these diseases is removal of the plant, along with some of the soil that is adjacent to its roots, as these fungi can spread to many perennial species. Ferti-Lome Halt can be used to treat Rhizoctonia on some perennials. Check the label carefully before using. Rotating crops also helps to reduce the incidence of these diseases. Impatiens are particularly susceptible to Rhizoctonia.

To prevent damping off of seedlings, use sterilized soil or commercial seed-starting mixes, and start with high quality seed. Planting seeds in rows, in cell packs or in individual containers rather than broadcasting them across a flat will help to control the spread of damping off disease should it occur. If damping-off disease is detected, remove the infected plants, along with the soil that is in the immediate area.