Root and Crown Rots of Plants

By: Kelly Feehan, Extension Educator

Release: Week of September 18, 2023

It was a hot, dry summer and a lot of irrigation took place. In some cases, irrigation was too frequent or too much and some landscape plants are now be suffering from root or crown rots.

Plant rots occur when conditions are right for a pathogen to infect and cause plant roots or the lower trunk or stems, referred to as the plant crown, to deteriorate. One condition is wet soil due to overwatering or poor drainage.

Depending on how extensive the rot is, symptoms include leaf browning or yellowing, slow growth or stunting, branch or stem dieback and wilting. Because symptoms are above ground, one might not think about them being related to underground plant parts or to overwatering.

If a root or crown rot is suspected, examine the crown and some of the roots. If the inner tissue appears tan or brown and is soft rather than white and firm, rot is likely present. Also examine the soil. If it is wet, rot may be an issue.

There are a number of soil fungi that cause root or crown rots. The most common are Phytophthora, Rhizoctonia, Fusarium and Pythium. They are introduced into gardens and landscape beds on contaminated plants, tools, shoes or soil.

Herbaceous perennial flowers such as Rudbeckia and coneflower are quite susceptible to root and crown rot, especially when soil is kept too wet. Trees and shrubs are also affected by fungal rots.

While rots are usually caused by fungi, fungicides have little effectiveness in preventing them and will not cure a plant once infected. Providing the best growing conditions possible and avoiding injuring roots or plant crowns are the best ways to prevent rots.

When buying plants or sharing plants with another grower, select healthy plants to help avoid introducing fungi into the soil. Purchase from reputable sources and inspect plants for signs of disease before purchase.

Avoid planting into compacted or poorly drained soils. Prepare soil prior to planting by incorporating compost and tilling or spading soil to incorporate organic matter and loosen soil or relieve compaction. This improves drainage and provides a better growing environment for healthier roots.

Avoid planting too deep. Plant so the root collar, location on the stem where roots begin, is just at the soil surface. If you have a heavier soil, the root collar can be just above the soil line. When digging the planting hole, avoid digging any deeper than needed to meet this recommended depth. If the soil is loosened beneath the root system, the plant will settle and be too deep. Dig the hole wider to encourage outward root growth.

Water correctly. The key is to avoid a continuously wet soil. Water long enough to moisten soil 6 to 8 inches deep for vegetables and flowers and 12 to 18 inches for trees and shrubs; then wait for soil to begin to dry before watering again. Check the soil with a hand trowel or insert a screwdriver. Avoid watering on a set time schedule. Let soil moisture determine when to water and not the calendar.

Avoid applying water to herbaceous perennials along with turf irrigation. Lawn watering tends to be too frequent and too shallow and can lead to root and crown rots and dieback in broadleaf perennials.

Use mulch correctly. Organic mulch like wood chips placed on top of bare soil is best. Mulch should not touch plant stems and should not be any deeper than 2 to 3 inches for perennials or 3 to 4 inches for trees and shrubs.