**Phytophthora Root and Crown Rot**

When well-watered trees or other plants start to wilt, one cause may be root or crown rot caused by soilborne pathogens in the genus *Phytophthora*. Almost all fruit and nut trees and most ornamental trees and shrubs can develop root or crown rot if the soil around the plant remains moist for prolonged periods. Tomatoes, peppers, eggplant, and other vegetable crops also can be affected. The most important way to prevent *Phytophthora* root and crown rot is proper irrigation.

**Leaves appear water-stressed but don't respond to irrigation.**
- Leaves may turn dull green, yellow, red, or purplish and may wilt.
- Often only plants in the most poorly drained areas are affected.
- Unlike plants suffering from water stress, plants don't recover when irrigated.

**Symptoms on roots and crowns vary.**
- Darkened areas in the bark around the crown and upper roots may develop, sometimes with gumming.
- Reddish-brown streaks or zones may be apparent in the inner bark and outer layer of wood.
- In tomatoes and eggplants, roots develop water-soaked spots that turn brown, and roots may be rotted off.
- If mushrooms are present or filamental growth is visible within plants, damage is likely due to a fungal disease such as Armillaria root rot, not *Phytophthora*.

**Water management is key to preventing rot.**
- Avoid prolonged soil saturation or standing water around tree bases.
- Adjust sprinkler heads and drip systems, so water doesn’t hit trunks.
- Provide good soil drainage.
- Raised beds can be a good solution for vegetables where drainage is a problem.
- Group plants by irrigation needs and water accordingly.
- Avoid salinity and water stress between irrigations.

**Take steps to avoid problems when you plant.**
- Don’t plant trees or other plants deeper than they were planted in the nursery, and never cover the graft union with soil or mulch.
- Select certified nursery stock and resistant rootstocks or varieties when available.
- Don’t maintain irrigated turf around the base of trees.
- If *Phytophthora* has been a problem on tomatoes, rotate that area into a nonsusceptible crop such as sweet corn for a year or two.

**Trees can sometimes be saved if rot is caught early.**
- At the first sign of leaf wilting, examine the tree at the soil line for rot.
- Cut away any bark that looks affected.
- Remove soil from around the base of the tree down to the top of the main roots, and allow the crown tissue to dry out.
- Keep water away from the crown and trunk.
- Young trees may die rapidly; older trees may survive for several years.

See Pest Notes: *Phytophthora Root & Crown Rot* at ipm.ucanr.edu for more details.

Minimize the use of pesticides that pollute our waterways. Use nonchemical alternatives or less toxic pesticide products whenever possible. Read product labels carefully and follow instructions on proper use, storage, and disposal.

For more information about managing pests, contact your University of California Cooperative Extension office listed under the county government pages of your phone book or visit the UC IPM Web site at ipm.ucanr.edu.

**What you use in your landscape affects our rivers and oceans!**