NEWSPAPER ARTICLES

Is it Drought Stress or Disease? (August 20, 2022)

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During this time of water restrictions and drought, our landscape trees and shrubs can show symptoms that have us wondering – is this stress caused by water deficiency, or is it a disease? Here are some tips from the University of California's Integrated Pest Management resource that might help identify the difference.

Water Stress

Plants suffering from a lack of water will often show their symptoms in their leaves first. Leaves may droop, fade in color or turn yellow, wilt, or drop prematurely. Leaf margins and tips may turn brown. Plants may produce fewer flowers and fruit, and show slow growth and smaller leaves. If water stress continues, other symptoms can appear, such as defoliation, split bark, brown branch tips, stunted growth, and in the worst scenario, plant death.

During winter, lack of water can also stress plants by increasing the risk of frost damage. Dry soil is less able to absorb and radiate plant-warming heat.

Water Stress Opens the Door to Disease

Prolonged drought stress can weaken a plant's natural defenses. In normal, perfect conditions, plants are healthy enough to fight off disease and pests. When water-stressed, they have slower defense reactions and fewer resources to fight off disease-causing pathogens.

In addition, wounds from drought stress, such as split bark, provide an opening for pathogens to enter. Canker diseases, in particular, are often stress-related and can damage and even kill a water-stressed plant.

Water deficiency can also "invite" pests to attack. Mites, leaf-sucking insects, and most wood-boring insects--including bark beetles, flathead and long-horned beetles, and clearwing moths--readily invade plants stressed from drought. Once a tree becomes severely infested by borers or other pests, it can rapidly decline and often die.

Water-loving plants are more susceptible to water stress

Plants from more temperate zones than our dry Mediterranean climate require more water to grow and stay healthy. When drought strikes and they are not getting the water they need to thrive, they will suffer more than our native and drought-tolerant plants. These plants include azaleas, rhododendrons, hydrangeas, tulip poplar, English ivy, sweet gum (Liquidambar), ornamental plums, magnolia, coastal redwood, and willow. They are not adapted with the extensive, deep root systems or small, leathery leaves that help to control water loss, resulting in their need for more frequent, deep irrigation to remain healthy.

Stress or Disease?

While difficult to diagnose for certain, here are a few hints to help you tell the difference between an abiotic disorder (caused by environmental conditions, such as drought, or a disease or pest.

- Symptom pattern: Drought stress will most often show up in regular or uniform patterns with the entire plant showing wilting or fading color in leaves; a disease or pest will more often show up in irregular patterns on some branches, but not all.
- Rate of symptom onset: Drought stress symptoms will usually have a sudden onset, while symptoms from disease or pests will develop more slowly and worsen over time.
- Spread of symptoms: Drought stress will usually affect the entire plant all at once, while pest or disease will start in one area and gradually spread.
- Signs: Pests or diseases will usually show some physical sign, such as the pest itself, honeydew, frass, rust, bacterial ooze, or mushrooms. Drought stress shows up only as symptoms, such as yellowing or wilting leaves, with no physical signs of disease or pest.

What can you do?

During drought and watering restrictions, our hands are often tied as to how much we can do, but here are a few tips:

- Reduce water waste by keeping your irrigation system in good repair: make sure the water is hitting only where it needs to and not watering the sidewalk or pavement. Water early in the morning.
- Switch to drip irrigation (the best option) or more-efficient sprinklers, if possible. Go to: https://www.epa.gov/watersense/spray-sprinkler-bodies for more info. Quick fact: If every home installed Watersense labeled spray sprinkler bodies, the U.S. could save over 31 BILLION GALLONS of water.
- Create a water-wise landscape by replacing nonessential lawns with permeable walkways, decks, patios, or a drought-tolerant groundcover.
- Choose plants that are suited to your area's climate. Switch out water-loving plants with natives and drought-tolerant plants. Go to: https://www.cnps.org/gardening or https://bloomcalifornia.org/ for more info on plants and design.
- Apply a thick layer of mulch to help your soil conserve moisture.
- Control weeds to keep them from competing for water with your ornamental plants.
- Make your trees your priority. Trees are usually the most expensive (in terms of money) and most valuable (in terms of benefits they provide) items in your landscape. Deep water their root zone at least once a month during our hot summers and continue periodically during low-water winters.

Managing our landscapes during drought conditions can be challenging, to say the least, but proper care and attention will help you help your garden survive--and hopefully flourish!-- once again.

For more information, visit the Tulare-Kings Counties Master Gardener webpage or:
http://ipm.ucanr.edu/PMG/GARDEN/ENVIRON/poorwater.html