October 2023 **Environmental Message**

Oak Trees and Bacterial Leaf Scorch Awareness

We are in the first few weeks of fall and in the temperate region of the world's deciduous trees will be preparing themselves for the dormant season. As part of that preparation the trees stop producing the green chlorophyl in the leaves. This unmasks and the other compounds present in tree leaves which produce the fall color of yellow, orange, red and brown that can be a dazzling site to see. Before fall begins some trees may drop their leaves prematurely due to drought stress, insect damage, or disease pressure. One such disease is called Bacterial Leaf Scorch (BLS) and can have a big impact on oak tree species, particularly red oaks, especially ones that have been planted in the urban environment.

Oaks have been widely planted in urban environments because they check a lot of boxes for an urban tree, they can grow quickly, create overarching canopies, tolerate a wide variety of planting sites and can have a deep red fall foliage. Because they check all these boxes many times they have been planted in a monoculture of one species in towns and cities, even outside of their native range. And as we learned from Dutch Elm Disease and more recently Emerald Ash Borer a monoculture of tree species in one area can lead to mass infestation and death.

BLS is a disease that has been found in the United States since about 1880 and can impact a wide variety of trees, shrubs, and vines. It is spread when a leaf feeding insect, usually plant hoppers, feeds on an infected tree the bacteria enters the insect. When the insect goes to feed again the bacteria is introduced into the tree, specifically to the water conducting xylem of the tree. BLS then spreads in the xylem of the tree creating drought stress like symptoms. From there the disease may be spread further by the leaf feeding insects or even root grafts. When one tree species is closely planted together, the disease can move more unnaturally quick. Modern urban planning utilizes a mix of tree species to combat infestations from spreading.

It’s not all doom and gloom, to keep the BLS at bay proper soil conditions and watering during periods of drought can keep the trees healthy. Additionally, there is an antibiotic that can suppress symptoms. As Utility Arborists, this disease has limited consequence on our operations, but as practicing arborists we should be aware of tree health issues that impact our urban forests.

Additional resources and pictures:
https://extension.umd.edu/resource/bacterial-leaf-scorch-trees
https://www.missouribotanicalgarden.org/gardens-gardening/your-garden/help-for-the-home-gardener/advice-tips-resources/pests-and-problems/diseases/bacterial-spots/bacterial-leaf-scorch

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