K-STATE Research and Extension | Wildcat District

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Trees sweat too: Keeping an eye out for tree dehydration symptoms

Until the rain last week, our area had an extended period of hot, windy weather, which leads to a condition called marginal leaf scorch. This disorder presents as dry and crispy leaves throughout the canopy of certain shade trees. On some trees, the edges of the leaves will be affected, and on others, the tips of the leaves will be affected. Trees that have shown marginal leaf scorch symptoms over the last few weeks have been ornamental pears, fruit trees, and maples. Often, marginal leaf scorch symptoms will be mistaken for a disease, but very rarely will symptoms of shade tree diseases present in hot, dry weather. The recent weather will be the distinction for determining a disease versus an environmental disorder.

Marginal leaf scorch is a disorder that sets on very quickly. The bottom of each leaf has pores called stomata through which water evaporates into the atmosphere. Usually, this increases the humidity around the stomata, which reduces the rate of evaporation and water loss. However, in excessively windy conditions, that humidity is carried away from the surface of the leaf and water continues to evaporate out of the leaf faster than it can be replaced. This leads to the symptoms of marginal leaf scorch as leaves desiccate from excessive moisture loss. This functions much in the same way as people sweating, and in the same way, trees need their water replenished in order to remain healthy. Sometimes, rain will do the trick, and other times, supplemental watering may be required.

As with most foliar problems in trees, this is a disorder that may look disturbing, but will not impact the long-term health of mature trees. Newer trees and fruit trees will need additional watering in weeks where rain is not forecasted to ensure that they remain healthy and productive. Loss of leaf tissue in younger trees becomes a problem in the summer when the tree is building up most of its energy reserves, and fruit trees need consistent moisture in order to set and ripen fruit. Marginal leaf scorch is a sign to keep an eye on soil moisture levels and water occasionally to make up for the water deficit the tree is currently experiencing.

Sometimes trees have shallow roots which can lead to symptoms of marginal leaf scorch. The roots can stay shallow for several reasons – heavy clay soil that slows root growth, obstacles in the soil like rocks that stop growth entirely, or naturally shallow root systems. If a tree has naturally shallow roots, you can encourage deeper root growth with deep and infrequent waterings. Not only will this help delay or inhibit the symptoms of marginal leaf scorch in the summer, but it will also allow trees to find more nutrients in the soil profile and increase the stability of trees in violent weather.

For more information or for help determining the cause of concerning symptoms in trees, please contact Jesse Gilmore, Horticulture Extension agent, jr637@ksu.edu, (620) 724-8233.

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