Fire Blight

Blight. The word brings chills to my spine. Gardeners and landscapers alike can be brought to tears by these six simple letters. Early blight, late blight, chestnut blight, leaf blight, shoot blight, needle blight, the list goes on and on. But today, the list ends on my desk with five homeowner calls about fire blight.

Blight is defined in the Merriam-Webster dictionary as “a disease or injury of plants marked by the formation of lesions, withering, and death of parts.” This definition alone would be enough to make most gardeners cringe. But now you have added the word FIRE!

Fire blight is a bacterial disease caused by *Erwinia amylovora* that mostly affects apple and pear trees. It damages blooms, shoots, twigs, and fruit. In some advanced cases, it can kill the entire tree.

There are four main symptoms of fire blight to be on the lookout for. The first symptom is blossom blight. It is identified by the water-soaked appearance of the blossom that will wilt, shrivel, and finally turn from brown to black. Next you will begin to notice twig and leaf blight. Twig and leaf blight causes the tissue to turn black and die. The twigs will wilt at their ends giving a ‘Sheppard’s hook’ appearance. Then you will see fruit blight. Fruit blight is very similar to blossom blight in that it appears water-soaked and begins to turn from brown to black. Each of these three symptoms has one very identifiable feature in common. The blossom, leaves, twigs, and fruit seldom fall off the tree. The diseased and dead tissue will persist on the tree for long periods of time. If all three of these symptoms go unnoticed, a fourth and final symptom can occur. Limb and trunk blight happens when the bacteria travel through the blossoms, leaves, and twigs and enter into the limbs and trunk. When a tree has symptoms of limb and trunk blight, it is seldom salvageable.

But where did it come from you ask? Fire blight overwinters in diseased tissue from the previous year. It moves on wind, through rainwater, and by insects to blossoms and growing shoots in the spring.

Each one of the diseased trees I visited in the last few weeks appeared to have been infected through blossoms. When I stood back and looked at the trees, there was a distinct pattern to the dieback. The tips of many branches, where the blossoms were previously located, were blackened. The leaves and stems that were still attached were black, and had the telltale ‘Sheppard’s hook.’ But the remainder of the tree was gorgeously green and healthy. This
pattern led me to believe that these trees were all infected through insect activity at the blossoms. Unknowingly, insects are very common vectors of bacterial and viral diseases.

Control of fire blight is very difficult, but there are some practices that can help. Selecting trees with a known resistance to fire blight is the first line of defense. No tree is immune, but some are known to be more susceptible or resistant. Each year, remove all diseased twigs or limbs before new growth starts in the early spring. Use sharp pruners to make cuts four to six inches beyond the diseased tissue. Make sure to clean your pruners between each cut by dipping them in a solution of bleach and water (1:10). This practice ensures that you are not spreading the disease from branch to branch. Monitor for new infections and quickly remove any sign of the bacteria. Keep sucking insect populations, such as aphids, in check by following a spray program. These insects can cause damaged areas where the disease can enter the tree, and they are also vectors of the bacteria. Last but not least, keep trees as healthy as possible. A healthy vigorous tree is always a good defense against any disease.

If you have any questions or comments, please feel free to contact me, Kerrie Roach, horticulture extension agent, at North Carolina Cooperative Extension, Robeson County Center at (910) 671-3276 or by e-mail at Kerrie_Roach@ncsu.edu, or visit our website at Robeson.ces.ncsu.edu.

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