

A New Fungal Disease of Ornamentals

By Susan Camp

“Oh, great,” I thought when I read the brief article on the Virginia Cooperative Extension Master Gardener Program Facebook page, “Just what we all need, another fungal disease of ornamentals.” This emerging disease is called vascular streak dieback (VSD), and symptoms were identified in 2023 on various species of ornamental trees in six states, including Virginia, North Carolina, and Tennessee. Growers and nurseries in several other states also have reported stock infected with VSD.

The trees most affected in Virginia are native redbud (*Cercis canadensis*), flowering dogwood (*Cornus florida*), and maples (*Acer* spp.). Some other native species that have been diagnosed with the disease include serviceberry (*Amelanchier canadensis*), southern wax myrtle (*Myrica cerifera*), black gum (*Nyssa sylvatica*), and tulip poplar (*Liriodendron tulipifera*). See VCE Publication SPES-483P “Vascular Streak Dieback: An Emerging Problem on Woody Ornamentals in the United States” for a complete list of the affected species that were studied. Most trees listed are natives, but several Asian species are affected as well.

The causative agent is thought to be a species of the fungus *Ceratobasidium*; some plant pathologists favor *C. theobromae*, also known as *Rhizoctonia theobromae*. This fungus is reported to infect cacao plants in Southeast Asia, causing similar symptoms. Under conditions of high humidity or heavy rain, spores develop on infected trees and are dispersed by the wind.

Early symptoms of VSD include stunted growth, scorching of the leaf margins, and interveinal chlorosis, or yellowing of the leaves around the veins, which remain green. The symptoms first appear at the crown and move downward and in toward the main trunk. As the disease progresses, marbled brown streaking develops in the xylem, or water-conducting system, of the tree. Infected trees may be further attacked and damaged by opportunistic fungi, leading to the development of cankers and split bark. The affected tissue eventually will become necrotic, and the entire tree will die. VSD may be misdiagnosed as drought stress, bacterial leaf scorch, or other fungal diseases, especially canker-causing fungi, making diagnosis of VSD even more difficult.

At this time, no specific fungicides are available to combat VSD, however, at least two preventative chemical fungicides can aid in symptom management. These fungicides can also decrease symptoms of infection by canker-causing fungi.

VCE recommends best cultural practices to avoid and manage symptoms of VSD. Purchase only healthy plants from a reputable grower or nursery. Examine plants for evidence of leaf scorching, chlorosis, wilting, and stunted growth. Do not purchase symptomatic plants even if they are being sold at a low price.

Before you plant, send a soil sample to VA Tech for testing to assure the proper pH and soil nutrients. Plant at the proper depth in an area with good drainage and provide sufficient irrigation. Space trees appropriately.

Avoid unnecessary pruning, and when you prune, remove debris from around the tree. If the tree is symptomatic, burn the debris, if possible. Disinfect your pruning tools after use.

Inspect trees regularly for signs and symptoms of VSD and other diseases or insect pests. This disease can attack mature trees as well as saplings.

Trees infected by the fungus that causes VSD eventually will die. Research currently is focused on developing testing procedures that will quickly identify the fungus that causes VSD. A second focus is on the development of a specific chemical fungicide to combat the disease. A third area of research is the development of VSD resistant ornamental trees.

VSD is having a major economic impact on commercial growers of redbuds, in particular, but also growers of all affected trees.

See North Carolina State publication “Vascular Streak Dieback: A Disease of Ornamentals in the United States” for more information on VSD and a comprehensive list of trees that can be affected by this deadly disease.