

Verticillium Wilt

Verticillium wilt, also known as "early dying disease", is caused by a fungus (*Verticillium dahliae* in woody and herbaceous plants) which is borne in both seed and soil. It can also be present in vegetable crops as *Verticillium albo-atrum*. These fungi are capable of attacking over 130 different species of trees, crops and ornamentals. Because the fungi are soil-borne and can infect so many different species, the wilt can be difficult to control.

The verticillium fungus can survive for many years in the soil, and can affect crop rotation. The fungus affects the plant roots through wounds, or can directly penetrate some root tissue. It is also transmitted from plant to plant through grafting and pruning.

Its wide host range permits the fungus to persist in soils for long periods. It remains alive by means of threads, which form in great numbers on dying diseased underground plant parts. It can attack and spread in many common weeds.

Once into the root system, it generally spreads upward into the trunk through the sapwood and interferes with water movement and other plant functions. The leaves may develop interveinal browning, then curling, partial defoliation, wilting and dieback of the branches. The wilting and dieback typically occur on one main branch, part of the crown, or an entire side of the tree.

The most severe of symptoms are leaf wilting and branch dieback. This can occur over a period of years, or can rapidly progress to plant death in a year or two. Other symptoms of the disease may include scorching of leaves, abnormally large seed crops, small leaves, stunting, sparse foliage and poor annual growth. Other stress factors can cause these symptoms also, so inspection of the xylem and cambial tissue is important. If you cut into the wood and see streaks, it may confirm the presence of the fungus. Confirmation by a diagnostic lab should be considered.

Once a tree is infected, you cannot control verticillium wilt. None of the current fungicides has been found to be effective against the fungus in trees. Even though a tree has been infected, it doesn't mean it will die. It may recover and be able to live with the disease, if carefully managed.

Keep plants as healthy as possible. During periods of drought, weekly deep watering of infected trees will keep them from becoming further stressed. It is also recommended that fertilization with ammonium sulfate be done, when symptoms are first noticed. Pruning out dead branches is also important, and can help limit the infection. Be sure to clean your pruning shears with 70% rubbing alcohol or a weak solution of bleach between cuts. All pruned materials should be disposed of carefully, to keep from spreading the infection to other areas of your garden or landscape.

Resources

[Verticillium Wilt](#). EB 1908, Washington State University Cooperative Extension.

[Maple Wilt](#). TreeHelp.com.

Verticillium Wilt of Shade Trees. Virginia Cooperative Extension.

Ophardt, Marianne C. Verticillium Wilt. Mid-Columbia Community Forestry Council, 2001.