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SUMMARY

Gardeners who choose to beautify their landscape with Japanese maples must take precautions against the establishment and spread of *Verticillium* wilt

Wilt Threatens Japanese Maples

By Chantal Guillemin, UC Master Gardener

There is no cure
but you can help trees fight the disease.

Q. After my Japanese maple died, I had it removed and I replanted another Japanese maple in the same location. Now one side of this new tree has clusters of brown, dead leaves. What's happening to my expensive maples?

A. Japanese maples are very susceptible to a soil-borne disease called *Verticillium* wilt. The new tree's brown, dead foliage may be due to infection by the *Verticillium dahliae* fungus.

What does *Verticillium* wilt do?

The fungus enters the plant through the roots and, over time, systemically clogs or restricts the flow of water in the xylem, the tree's transport system.

How do trees respond?

Japanese maples and other hosts of *Verticillium* wilt respond to the presence of the fungus by compartmentalizing it to keep it from spreading. Symptoms subside when the tree is successful in doing so; however, if ever the fungus breaks through the barriers, the infection grows and the symptoms reappear.

Diagnostic indicators

The reduced vigor of infected trees can be seen in the sparse canopies of undersized, off-color, curled and dry leaves. When branches die back with partial or total defoliation on one side of the tree, the symptom is called flagging.

Another diagnostic indicator of *Verticillium* wilt is the grayish green or olive green streaking in the sapwood, usually seen near the base of larger, affected branches.

An infected Japanese maple will exhibit more pronounced symptoms if stressed by drought, waterlogged soil or soil compaction.

Will your tree die?

Mature trees can take years to die and may recover if conditions favor plant growth rather than the spread of disease. Do not rush to remove a symptomatic tree. Although there is no cure for *Verticillium* wilt, your Japanese maple may continue to perform if you offer it some environmental manipulation.



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How to control Verticillium wilt

As Verticillium spreads more quickly in weaker plants, follow these sound cultural practices:

- Prune dead branches to discourage infection by other fungi. Disinfect tools between cuts in a 10% solution of household bleach.
- Water generously, especially during dry periods.
- Apply modest amounts of slow release fertilizer, low in nitrogen and high in potassium.
- Mulch to maintain soil moisture, keep temperatures moderate and minimize chances of root injuries.
- Avoid gardening under a Japanese maple, as damage to the roots can be an entry point for Verticillium wilt.
- Don't use wood chips from infected trees.
- Because Verticillium fungus can survive in the soil for 10 years, do not move soil or debris from areas of known infection.
- Fungicides are not effective for control, because tree roots inevitably grow beyond the treated area.

- Seek guarantees from nurseries or suppliers that the stock you purchase is Verticillium-free. Replace severely infected trees with non-susceptible species such as yew or another conifer.

Disease incidence is influenced by cultural care and environmental conditions, so homeowners who choose to beautify their gardens with Japanese maples must take precautions against the establishment and spread of Verticillium wilt.

Learn more at:

<http://ipm.ucanr.edu/PMG/GARDEN/P LANTS/DISEASES/vertwilt.html>



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Verticillium wilt turns leaves brown in a maple tree.
Photo by Jack Kelly Clark/Statewide IPM Program
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