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Has tree of heaven met its match?

By Aaron Cook Washington County Forester Aug 20, 2016 □ 0



Photo courtesy Wikipedia

A tree of heaven with a heavy load of seeds. This invasive tree spreads quickly, but a fungus may prove to be a way to kill it.

A naturally occurring fungus might help curb the spread of an invasive tree species that is threatening forests in most of the United States, according to researchers at Penn State, Virginia Tech, and West Virginia University.

Researchers tested the fungus, Verticillium nonalfalfae by injecting it into tree-of-heaven, or Ailanthus, plots. The treatment completely eradicated the tree-of-heaven plants in those forests.

"It appears that this treatment is effective in Pennsylvania and could be used as a bio-control agent throughout the United States," said Matt Kasson, a former Doctoral Candidate at Penn State University.

Since tree-of-heaven's introduction into Pennsylvania in the 1780s, the tree has spread from a rare and prized plant for collectors to a nuisance in at least 40 of the 48 contiguous states. Trying to find the best way to get rid of tree-of-heaven has become a serious land-management issue; it can cost up to \$3,500 an acre to eradicate the invasive tree.

Dr. Donald Davis, professor of plant pathology at Penn State University, said that in 2003, he noticed a large number of tree-of-heaven deaths in a southwestern Pennsylvania forest. The foresters in the area then took him to a site where large-scale wilt was affecting the trees. Davis described hundreds, if not thousands, of dying and dead tree-of-heaven in the area, which is very unusual, because tree-of-heaven is very hard to kill.

The researchers also noticed a number of Ambrosia beetles near the infected stands, leading them to theorize that the fungus, often carried through the forests by beetles, was involved in the tree deaths. The Ambrosia beetles may explain some of the long-range spread of the disease; one theory is that the beetles feed on an infected tree and then take those spores to another healthy tree, which could be miles away.

Studies on the vegetation that surrounds Ailanthus groves indicate the fungus does not harm nearby plants and trees. Only a small percentage of plants near the infected tree-of-heaven plots showed signs of being harmed by the fungus, specifically devil's walking stick and striped maple, both uncommon in central Maryland.

Perhaps tree-of-heaven in Maryland has met its match?

Nature Notes are written by members of the Frederick County Forestry Board. You can contact the board by emailing kgardner@news post.com. Please put Nature Notes in the subject line.

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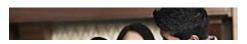
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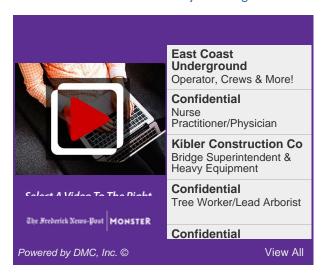
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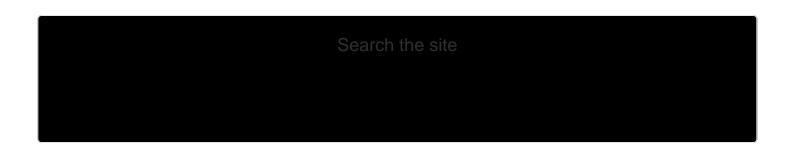
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