



Anaheim Office
Lab No. 15-279-0354
Path No. 1050
October 16, 2015

Idyllwild Tree Doctor
P.O. Box 2444
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Attn: John Huddleston

PATHOLOGY RESULTS:

SEQUOIADENDRON GIGANTEUM

Provided here are the results of requested laboratory work carried out on some branch samples obtained from a Sequoiadendron giganteum tree. This tree and two more are said to be showing symptoms of branch dieback.

The branch tissue submitted was found to have sunken cankers and the leaves displayed tip necrosis.

As instructed, the branch tissue was processed for pathogens by culturing onto a series of agar media plates. Microscopy examination was also performed.

Sample Id	Pathogens from Branches	Insect Pests Identified
Sequoiadendron giganteum	<i>Botryosphaeria</i> spp.	None

Comments and Recommendations

Test results show that the branch dieback is due to the cosmopolitan and opportunistic fungus known as Botryosphaeria. As you may know, Botryosphaeria can cause significant branch loss on the Giant sequoia trees that are under stress. In many cases, the most serious stress for these trees tends to be environmental in nature. Trees grown in climatic zones with predominately low relative humidity and high summer heat tend to be the most vulnerable to infection. Drought is often the most serious stressor for these trees in their native range.

Soil compaction, excessive pruning or lifting of tree skirts, saline and alkaline soil conditions, inadequate moisture management, changes in grade, competition for resources caused by dense understory plantings, and construction activity are some of the additional stress factors often encountered in urban landscape setting that also predispose this trees to Botryosphaeria canker.

Management of Botryosphaeria stem/branch dieback requires identification and, if possible, corrections of underlying stress factors. Depending on the extent of injury to the crown, improving the health of the tree may or may not be feasible. Loss of more than a third of the central leader is often times cause for tree removal given the severe impact on tree structure and aesthetics. If however the damage is considered minor, then removal of infected branches well beyond any obvious internal discoloration can help rid the tree of the Botryosphaeria infection.

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Fungicide applications, whether these are applied via injection or some other method of application, tend to provide poor curative control. That said, materials with broad-spectrum active ingredients such as tebuconazole, thiophanate-methyl, chlorothalonil, or azoxystrobin may provide some protection against new infections and may be considered when the tree is known to be under stress. Your preferred agrochemical supplier should be able to recommend a specific fungicide product if you are interested in trying to treat the tree.

Thinning out understory plants to reduce competition, ensuring irrigations are thorough enough to accomplish some leaching, limiting pruning to removal of dead or unsafe branches and managing fertility are just some general suggestions to alleviate certain stress issues. I should point out that with respect to the thorough irrigations, time between irrigations should be long enough to allow the soil to dry out slightly otherwise the soil will stay too saturated which could then lead to a root rot problem.

Please let us know if you have any questions regarding this report, or if we can be of further service.



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