

AGRICULTURAL EXPERIMENT STATION  
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PRELIMINARY RECOMMENDATIONS FOR THE CONTROL OF THE ROOT AND CROWN  
DISEASE OF CYPRESS

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During the year 1937 a serious disease of Alumi cypress was noticed in commercial plantings. Preliminary surveys have shown that this disease occurs in a large majority of the nurseries in Northern Oregon. The disease is important for five reasons: 1. The tree concerned is a valuable ornamental. 2. Affected trees die. 3. The disease is infectious. 4. Other varieties of Lawson cypress are susceptible. 5. Control will be difficult. The disease will eliminate Alumi cypress from Oregon nurseries if its advance is not stopped.

Appearance of Infected Trees

The disease can be recognized by gradual changes in foliage color similar to those which take place when a cypress dies from transplanting injury. The foliage first loses its metallic blue color and then turns dark brown or even purplish. Later, the brown changes to a light green, and in turn the green color fades and the foliage appears a pale tan. Soon after the plant first becomes discolored the roots die and a conspicuous brown lesion forms at the base of the plant. Eventually this lesion girdles the tree and death ensues.

Cause of the Disease

The death of plants from this disease was formerly attributed to unsatisfactory cultural conditions. Our investigation has shown that it is caused by a specific fungus belonging to the genus *Phytophthora*. The mal di gomma disease of citrus and the ink disease of chestnut are similar diseases. Fungus diseases of this type are well adapted to soil transmission- the present trial-recommendations are based on this circumstance. Final recommendations are not possible until more is known about the life history of the causal organism.

Varieties Affected

A complete list of the varieties affected by this disease cannot be given. The disease has been found on Chamaecyparis lawsoniana varieties alumi and erecta and on C. obtusa var. gracilis. All species and varieties of *Chamaecyparis* should be considered susceptible until they are proven otherwise.

Control Suggestions

1. Specific disinfection processes applicable to soils may be developed later, but at present control must involve elimination of diseased individuals and isolation of healthy plants. Control by spraying or dusting is hopeless.

2. Destroy diseased plants as soon as they appear in a planting. Remove as much of the root system as possible.

3. Remove all the apparently healthy plants to new ground where they can be observed for at least one year before selling.

4. Avoid large plantings. Distribute the cypress so that any plant which proves diseased will be isolated, and a large number of individuals will not be threatened. From our present information, it seems advisable to alternate broad leaf ornamentals in the rows with the Chamaecyparis. For example, plant a Chamaecyparis, then two barberries, then another Chamaecyparis, etc. The broad-leaf plant would provide a natural barrier between the Chamaecyparis, and would check the spread of the fungus down the row.

5. Avoid row plantings in sloping ground because drainage from a plant above may infect some plant located below.

6. Propagate new plants from cuttings taken from selected healthy stock.

7. Place the young plants on land that has not recently been planted to conifer stock.

8. It is not advisable to move balled Chamaecyparis from one nursery to another at the present time. The fungus may be present in the soil, but its effects not yet visible on the plant. If balled plants are introduced, they should be isolated until they are known to be free from the disease.

9. Please report the death of Lawson cypress to the Oregon Agricultural Experiment Station so we may learn more about this disease and assist in its control. Such reports will be strictly confidential and will not be used in any way to harm the good name of your nursery.