

A brief report on an Azalea Cutting Disease

by

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Loss of azalea cuttings in Denver stimulated a study concerning an effective control of a cutting rot incited by Cylindrocladium scoparium Morgan. This fungus has been reported to incite a disease on Indica azalea (Rhododendron indica), Kurume azalea (R. obtusa japonicum), Magnolia soulangeana, Hydrangea sp., Ilex rotundifolia, pyroantha sp., Callistemon rigidus, Poinsettia (Euphorbia pulcherrima), rose, strawberry and conifer seedlings (1,2,4,5).

The symptoms on azalea cuttings consist of a leaf wilt, followed by leafdrop, with production of few visible leaf spots or stem cankers. The bark and wood at the base of wilted cuttings are discolored and often watersoaked. The disease is most serious under conditions of high humidity (4) especially during mist propagation. Low humidity commonly found in Colorado normally tends to minimize the importance of this disease. Laboratory tests -- Preliminary fungicide screening tests were conducted. These tests used a standard paper disc assay method. The discs were wet uniformly in solutions or suspensions of the test fungicide and placed on potato dextrose agar plates "seeded" with C. scoparium. Concentrations of 100, 50, 25, 12 ppm active material were used in each screening test. Included in the tests were Tinox, Gerox, Zineb, Hercules 3944 (experimental chemical), C.P. 30249 (Shell experimental chemical), Dexon, Dithane M-22, Captan, 8-Quinolinol sulfate, Kromad and Thimer.

These data were recorded as the per cent of inhibition compared to untreated discs on the agar plates. Captan and Dithane M-22 were the most effective based on this test.

Greenhouse tests

Captan and Dithane M-22 at 1.5 and 3 lb. per 100 gal. were applied weekly to stock plants as a protective spray. Inoculation of the stock plants was accomplished by a spray application of C. scoparium spores. Cuttings taken from these inoculated and treated plants were propagated 10 weeks. Each chemical treatment

Table 1. -- Control of Azalea cutting rot incited by Cylindrocladium scoparium by Dithane M-22 and Captan sprayed on the stock plants.

Treatment	Rate lb./100 gallons	Disease Index*	
		Replication I <u>a</u>	Replication II <u>a</u>
Dithane M-22 (70% active)	1.5	2.15	2.35
Dithane M-22 (70% active)	3	2.85	2.57
Captan (50% active)	1.5	2.42	2.71
Captan (50% active)	3	1.85	2.58
Innoculated Control	-	3.86	3.78

* Disease Index: 1 - no symptoms, 2 - leaf wilt, 3 - leaf drop and involvement, 4 - Basal stem lesion

a Each figure represents the mean of 7 cuttings.

or control contained 7 cuttings and each group was replicated twice. After 10 weeks the cuttings were placed into disease groups as follows: 1 - no symptoms, 2 - leaf wilt, 3 - leaf drop and involvement, 4 - basal stem lesion. The results (table 1) show the chemicals substantially reduced the severity of the disease.

Discussion

Attempts to control the infection by C. scoparium reported here suggest that some control can be achieved by protective sprays applied to mother plants. However, work conducted at the Auburn University Ornamental Horticulture Field Station, Mobile, Alabama, (3) over a period of several years has demonstrated the superiority of 30 minute soaks over dips or sprays. Concentrations per 100 gallons of water for those materials giving best control as 30 minute soaks are as follows: Actidione-Thiram (2 pounds), Teresan QM (3 pounds), Phaltan 75 (3 pounds), Thylate 50 (4 pounds), Sunox (1½ pounds) and Mycostatin (½ pound). Spreader-sticker was added to all materials at the rate of 1 pint per 100 gallons of water.

Based on this information, it is recommended that a 30 minute soak of cuttings and standard sanitation procedures be used for control of this disease. Considering the wide host range of this organism, isolation of clean mother plants and protective sprays are suggested as additional control measures.

Literature Cited

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