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MASTER GARDENERS PROVIDING POVERTY POCKETS OF A LARGE URBAN COUNTY WITH ORNAMENTALS USING VOLUNTEERS

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Abstract. **Dade County is a large metropolitan county approximately the size of the state of Delaware. It has a diverse population with over 50% living at the poverty level. Many people live in drab residences without access to areas offering aesthetic vegetative relief from their dreary environment. This project was initiated to alleviate stress in high crime areas and to develop neighborhood awareness.**

Introduction

Upon the reorganization of the Dade County Master Gardeners in 1994, it was decided to place emphasis on developing Master Gardener volunteer outreach programs to help with the social problems in poverty areas of Dade County. Sites were chosen on an as-needed basis.

Methods

The 62nd Street Project was initiated at the request of the Miami police in the winter of 1995. An ornamental/vegetable community garden was established on NW 62nd Street because it was the street with the highest crime rate in the City of Miami. The garden located on a city lot, provided by the City of Miami, had been the location of murders and many other crimes. It was full of debris and overgrown with weeds, providing an excellent escape route for drug dealers. Clearing the lot uncovered needles from the addicts who lived on or near the site.

The agent and the project supervisor developed a community garden program. The first garden participants were contacted by the agent and the Master Gardener standing on the sidewalk, prompting interested citizens to ask why they were standing there. At the conclusion of the day, plots were organized from members of the community to plant and maintain the garden.

After the initiation of the project, Morningside Elementary School sent 65 kindergarten students and 10 alternative education students to work on the project each Wednesday morning. A Garden Board was formed composed of residents, a Miami businessman, two American Legion employees, and a representative from the City of Miami police. From this project, five gardens have been developed for 1996. Presently, there are many more requests for gardens from the police than can be fulfilled.

In order to benefit as many citizens in Dade County as possible (2 million population) six Master Gardener centers have been established throughout the county. These are located at The Enchanted Forest Park, Miami-Dade Kendall Campus, Simpson Park, Cauley Square, Miami Botanical Conservancy and Homestead. These centers serve as distribution points for information and materials throughout the county.

Results and Discussion

The 62nd Street garden provides a sense of neighborhood for the residents of the street. Residents became familiar with one another and decided to participate more actively in determining the social direction of the neighborhood surrounding the street. The garden will reopen in fall of 1996, along with four more sites.

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EFFECT OF TEMPERATURE AND FUNGICIDES ON DEVELOPMENT OF ALTERNARIA LEAFSPOT OF MADAGASCAR PERIWINKLE

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Abstract. **Alternaria leafspot of periwinkle (*Catharanthus roseus* (L.) G. Don is incited by *Alternaria* sp. The disease is common in Florida and is characterized by pinpoint reddish-brown lesions which often are surrounded with yellow halos. In two growth room experiments, foliar applications of several formulations of chlorothalonil (Bravo 720, Bravo 825, Daconil 2787), iprodione (Chipco 26019), anilazine (Dyrene), fluazinam, or mancozeb (Manzate 200) provided nearly 100% control of Alternaria leafspot. Thiophanate-methyl (Cleary's 3336), 55% lesion reduction, and basic copper sulfate (Tribasic Copper Sulfate), 56% lesion reduction, alone did not adequately control the disease. However, the combination of thiophanate-methyl and mancozeb (Cleary's 3336 plus Manzate 200) provided excellent control (7 lesions vs 3198 lesions on nonsprayed control plants). Also the combination of chlorothalonil and copper (Dacobre) resulted in excellent protection. Application of reduced rates of mancozeb plus iprodione (Manzate 200**

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plus Chipco 26019) or chlorothalonil plus iprodione (Bravo 720 plus Chipco 26019) also resulted in nearly complete disease control. In a series of temperature chamber experiments, Alternaria leaf spot developed readily over a wide range of cool to moderate temperatures (54-75F or 12-24C). Temperatures above 74F (24C) inhibited disease development compared to the 54-75F (12-24C) optimum range.

Madagascar periwinkle (*Catharanthus roseus* (L.) G. Don), once considered to be little more than a weed in Florida, in recent years has been greatly improved by breeders until it now has become an enviable part of the Florida landscape, not only because of its beauty but also because of its tolerance to abuse. However, it is susceptible to Alternaria leafspot incited by a species of *Alternaria*. This disease is characterized by reddish-brown leaf lesions surrounded by yellow halos (Chase, 1993; Chase et al., 1995). The lesions frequently coalesce and often an entire leaf may become chlorotic, greatly diminishing the attractiveness of the plant and causing considerable distress to homeowners and producers alike.

Two experiments were carried out to determine if the disease could be readily controlled by the application of common fungicides. Additionally, a series of experiments were carried out to determine the optimum temperature for disease development so as to know which incubation temperature to use for the fungicide experiments. The results of these experiments are presented herein.

Materials and Methods

A 1:1:1 (by volume) potting mix of Florida peat, vermiculite, and fine sand, amended with dolomite, hydrated lime, superphosphate, and micronutrients, was used in 4-inch pots in all experiments. All periwinkle plants (3 plants/pot) were grown two weeks in the greenhouse under ambient conditions before being used in the experiments. *Alternaria* sp. to be used as inoculum, was grown seven days on potato-dextrose agar plates at 82F (28C). The colony surface then was aseptically wounded with a sterile instrument and the culture plates placed under fluorescent lights to induce sporulation. Spores were washed off the plates and spore suspensions of 20,000 spores/ml of inoculum were prepared for each temperature or fungicide experiment. The same fungal isolate was used in all experiments.

Fungicide experiments. The fungicides used were: anilazine (Dyrene), basic copper sulfate (TriBasic Copper Sulfate), chlorothalonil (Bravo 720, Bravo 825, Daconil 2787), chlorothalonil-copper (Dacobre), iprodione (Chipco 26019), mancozeb (Manzate 200), and thiophanate-methyl (Cleary's 3336). The specific fungicides and rates used for each experiment are given in Table 1. All fungicide treatments were replicated four times with each replicate consisting of one 4-inch pot containing three periwinkle plants. The fungicides were sprayed once onto the stems and foliage of the periwinkle plants to the point of run-off one day before the plants were inoculated. One set of four pots was not sprayed with a fungicide, but was inoculated and a second set of four pots was not sprayed with a fungicide and were not inoculated. Immediately after the fungicide treatments were applied, the plants were inoculated by gently misting each with approximately 1 ml of the spore suspension. All pots immediately were covered with plastic bags and placed in a 72F (22C) temperature-controlled environmental growth room. After 4 days incubation, the plastic bags were removed and the number of lesions were counted 3 to 5 days later.

Temperature experiments. The experimental unit in these studies, as in the fungicide experiments, consisted of a 4-inch pot containing three periwinkle plants. The plants used to determine the effect of temperature (12, 16, 20, 24, 28, 32C = 54, 61, 68, 75, 82, 90F, respectively) on disease development were inoculated by misting each with 1 ml of inoculum prepared as described before. After the plants were inoculated, each pot was covered with a plastic bag. The bagged, inoculated plants and noninoculated plants (which were misted with tap water only) were put into each temperature regime. The plastic bags were removed after 4 days. The number of lesions were counted (Expts. 1, 2, and 4) or disease severity estimated (Expt. 3) using the Horsfall-Barratt (1945) disease evaluation system where 1=0% of the foliage affected and 12=100% of the foliage affected.

Table 1. Effect of fungicides on the development of Alternaria leafspot of Madagascar periwinkle.

	Rate per 100 gal		Number of leafspots	
Fungicide Used	Expt. 1	Expt. 2	Expt. 1	Expt. 2
Mancozeb	1.5 lb	1.0 lb	1 a	0 a
Chlorothalonil 720	1.5 pt	1.0 pt	0 a	3 a
Chlorothalonil 825	1.5 lb	1.8 lb	0 a	0 a
Anilazine	2.0 lb	1.5 lb	13 a	7 a
Iprodione	2.0 lb	1.5 lb	2 a	6 a
Thiophanate-Methyl	2.0 lb	—	1454 b	—
Chlorothalonil 2787	1.5 lb	—	0	—
Chlorothalonil-copper	5.6 lb	—	—	0 a
Thiophanate + Mancozeb	0.75 lb + 0.75 lb	—	7 a	0 a
Basic copper sulfate	4.0 lb	—	1495 b	—
Iprodione + Mancozeb	0.75 lb + 0.75 lb	—	0	—
Iprodione + Mancozeb	0.5 lb + 0.5 lb	—	0	—
Iprodione + Mancozeb	—	0.25 lb + 0.25 lb	—	4 a
Fluazinam	—	1.0 pt	—	2 a
Chlorothalonil 720 + iprodione		0.75 pt + 0.5 lb	—	0
Chlorothalonil 720 + iprodione		0.5 pt + 0.5 lb	—	0
No fungicide, inoculated	—	—	3198 b	2719 b
No fungicide, noninoculated	—	—	0 a	0

[z]Mean separation (columns) by LSD test, 5% level.

Results and Discussion

Fungicide experiments. Mancozeb, chlorothalonil (regardless of formulation), anilazine, iprodione, and fluazinam sprays applied once just prior to inoculation resulted in excellent disease protection (Table 1). Neither thiophanate-methyl nor basic copper sulfate applied alone gave adequate protection. However, the combination of thiophanate-methyl plus mancozeb resulted in excellent control in both experiments and the combination of chlorothalonil plus copper in Experiment 2 resulted in excellent control. Combinations of iprodione plus mancozeb in both experiments at rates as low as 0.25 lb/100 gal of each resulted in excellent control. Application of mancozeb or chlorothalonil 720 alone at low rates also resulted in superior protection. Combinations of chlorothalonil 720 plus iprodione at low rates of each (0.5 pt+0.5 lb) also gave excellent protection in Experiment 2. It is clear that several fungicides alone or in combination provided excellent protection against Alternaria leafspot of periwinkle.

This report presents research results. It does not contain recommendations for their use. It does not imply that the uses evaluated here have been registered. In fact several of the fungicides discussed here are not registered for use on ornamentals. For instance Manzate 200 (mancozeb) is not labeled for use on ornamentals although Dithane T/O (another mancozeb fungicide) is labeled for ornamental use. Bravo 720 (chlorothalonil) also is not labeled for use on ornamentals, whereas Daconil 2787F (another chlorothalonil fungicide) has an ornamental label. Nonetheless, even if ornamental labels exist for certain fungicides, periwinkle may or may not be included on the label. Therefore, it is essential that the labels be read and followed at all times to avoid misuse.

Temperature experiments. Disease severity decreased with increasing temperature in the first three experiments (Table 2). It appeared in the last experiment that the optimum temperature for disease development was 61F (16C) and that disease severity slightly moderated at 12F (54C) and also at 68F (20C)and 75F (24C) compared to 61F (16C). Disease severity was greatly diminished at 82 and 90F (28 and 32C). Alternaria leafspot of periwinkle is a cool weather disease and a disease that can develop extremely well over a wide temperature range (54-75F or 12-24C). However, it also is a disease that can be easily controlled with the proper fungicide.

Table 2. Effect of temperature on development of Alternaria leafspot of Madagascar periwinkle.

Temperature		Number of leafspots or H-B[z] ratings			
F	C	Expt. 1	Expt. 2	Expt. 3	Expt. 4
54	(12)		—	11.75 a	2350 b
61	(16)		256 a	10.75 a	2802 a
68	(20)		151 b	11.00 a	2796 a
74	(23)	800 a[y]	—	—	—
75	(24)		140 b	11.50 a	2247 b
80	(27)	190 b	—	—	—
82	(28)		1 c	3.0 b	461 c
90	(32)		3 c	—	—

[z]Horsfall-Barratt rating scale where 1 = 0% of the foliage with symptoms and 12 = 100% of the tissue with symptoms.
[y]Mean separation (columns), by LSD test, 5% level.

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PERIWINKLE TWIG BLIGHT CAUSED BY *COLLETOTRICHUM DEMATIUM* ON *CATHARANTHUS ROSEUS* L.

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Abstract. **_Colletotrichum dematium_ (Pers.) Grove, which causes twig blight disease on periwinkle (_Catharanthus roseus_ (L.) G. Don), was isolated from plants of _C. roseus_ 'Pretty in Pink' from a commercial nursery in Dade County, Florida, in the spring of 1991. The species of _Colletotrichum_ was identified by the Commonwealth Mycological Institute, Kew, England. Foliar blight and sporulation of the fungus resulting from inoculation of _C. roseus_ plants with a spore suspension were identical in all respects to those resulting from natural infection. Symptoms consisted of wilting of the shoot tips followed by chlorosis and ultimately necrosis of the shoot tips. Necrotic tissues were typically covered with masses of acervuli with setae. The isolated fungus produced falcate conidia as well as abundant sclerotia on the host and in culture, which is typical of _C. dematium_. Clearry's 3336, Dithane M45, Duosan, and Zyban fungicides applied as a protective spray provided significant disease control.**

The fungus *Colleototrichum dematium* (Pers.) Grove was first reported in 1918 (Sutton, 1980). However, the synonym *Sphaeria dematium* Pers. was reported in 1801 (Sutton, 1980). Since then it has been observed extensively in temperate re-

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