

EVALUATION OF FUNGICIDES AND SPRAY PROGRAMS FOR CONTROL OF POWDERY MILDEW IN SUMMER SQUASH IN GEORGIA II, 2004.

David B. Langston, Jr.
University of Georgia
Cooperative Extension Service
Dept. Plant Pathology
P. O. Box 1209
Tifton, GA 31793

Introduction

Powdery mildew (caused by the fungus *Sphaerotheca fuliginea*) affects squash grown in Georgia each year. This fungus thrives during dry, hot, low humidity conditions and generally attacks squash once fruit begin to form. Squash that are under heat and drought stress during the harvest period will not be as productive if powdery mildew goes unchecked. More fungicide options are available to growers for control of powdery mildew than ever before. This study examines many new and potential fungicides for efficacy against powdery mildew of squash.

Materials and Methods

Summer squash (*Cucurbita pepo* 'Daisy') were transplanted on 22 April in black plastic mulch covered beds at the RDC Expo Area Farm, a unit of the Coastal Plain Experiment Station in Tifton, GA. Mulched beds had a 32-in. top and were planted on 6-ft centers. Plants were planted in one row per bed and were spaced 2 ft apart within the row, resulting in 8 plants per plot. Plots were 15 ft long, were separated on each end by 3 ft of bare plastic, and were arranged in a randomized complete block design with 4 replications. Fertility, insects and weeds were managed according to standard University of Georgia Extension Service recommendations. Fungicide treatments were applied with a CO₂-pressurized backpack sprayer calibrated to deliver 40 gal/A at 75-80 psi through TX-18 hollow cone nozzles. Weather during the experiment was 5.7 in below the 78-yr average for rainfall.

Results

Powdery mildew was first observed on 10 Jun and increased to moderately high levels by 30 Jun. All treatments significantly reduced disease on 16 Jun compared to the non-treated check. All treatments significantly reduced disease compared to the non-treated check on 16 Jun except Ecoguard. Both rates of V-10118, Quintec, and the 4.5 oz/A rate of Nova significantly outperformed other fungicides and spray schedules. Foliar phytotoxicity in the form of severe chlorosis and leaf rugosity were observed in plots treated with Quintec.

Table 1. Evaluation of fungicides on powdery mildew of summer squash.

Treatments, rates, and (spray times) ^z	Powdery mildew ^y 16 Jun
V-10118, 3.1 fl oz/A (1-5)	1.3 e ^x
V-10118, 6.2 fl oz/A (1-5)	1.0 e
Quintec, 4.0 fl oz/A (2, 4)	1.0 e
Quintec, 8.0 fl oz/A (1-5).....	1.0 e
Nova 40W, 4.5 oz/A (1-5)	1.3 e
Milsana, 0.5% v/v + Tween, 0.02% v/v (1-5).....	6.3 b
QRD 143, 1.0% v/v + QRD 602, 0.3% v/v (1-5)	5.3 bc
Ecoguard, 16.0 fl oz/A (1-5).....	7.8 a
Nova 40W, 4.5 oz/A (1,3,5) Milsana, 0.5% v/v + Tween, 0.02% v/v (2,4).....	3.3 d
Nova 40W, 4.5 oz/A (1,3,5) QRD 143, 1.0% v/v + QRD 602, 0.3% v/v v (2,4)	3.8 d
Nova 40W, 4.5 oz/A (1,3,5) Ecoguard, 16.0 fl oz/A (2,4)	4.0 cd
Non-treated	8.1 a

^zSpray dates were: 1=14 May; 2=21 May; 3=27 May; 4=4 Jun; 5=10 Jun.

^yPowdery mildew was rated on a 1-10 scale where 1=1-10% leaf area affected by powdery mildew and 10=100% leaf area

affected by powdery mildew on both upper and lower leaf surfaces.

^xMeans followed by the same letter(s) are not significantly different according to Fisher's protected LSD test at $P \leq 0.05$.