

Evaluation of Thyme Guard against Powdery mildew on Cucumber. 2017

A trial was conducted in Phelps NY to evaluate Thyme Guard for efficacy against powdery mildew on cucumbers in the greenhouse.

Cucumber seeds "Straight Eight" were planted in to 6 inch pots in Phelps, NY on July 10 2017. Several seeds per pot were planted, and only one plant per pot was maintained. Eight individual pots were used for this study, thus there were eight individual replicates. When plants were approx. 8 inches tall, applications of products were begun; plants consisted mostly of 3 to 4 leaves. When the trial was initiated, a bamboo stake was placed within the pot, and the plants were tied to the stake as the plants grew. Applications of the treatments were made using a CO2 backpack sprayer that was calibrated to deliver what would have been the equivalent of approximately 50 Gallons per acre. The sprayer operated at 42PSI and had 2 hollow cone nozzles (TeeJet TXVK 18). Applications were made to assure that upper and lower leaf surfaces were covered with solutions. Applications were made on the following dates:

Aug 1, 8, & 15, 2017

Plants were generally watered once per day. The greenhouse was generally maintained at 68 to 85 F.

Powdery mildew occurred naturally in the greenhouse during 2017, and on Aug 22 and 28, the severity of powdery mildew lesions was recorded. One estimate was made for each plant for the severity of powdery mildew. The data were collected on the same relative leaves per plant. When powdery mildew was rated, the youngest 3 leaves per plant were omitted. In addition, there was visible phytotoxicity on the foliage treated with the 2 Quart rate of Thyme Guard. The percent leaf area with atypical lesions (=phytotoxicity) was recorded on Aug 22 & 28. The atypical lesions, consisted of irregularly shaped lesions that ranged from 0.5 to 1.5 cm in diameter. Lesions were noted anywhere on the leaf surface, but occasionally, they were noted near the margins of the foliage. No other fungicides or insecticides were applied to the plants in this trial.

Data in the following table represents the late blight data from this trial

Trt No.	Treatment Name	Rate Unit	Powdery mildew % leaf area with powdery mildew lesions (SEVERITY)	Powdery mildew % leaf area with powdery mildew lesions (SEVERITY)	PHYTO % Leaf area with atypical symptoms.	PHYTO % Leaf area with atypical symptoms
			Aug 22, 2017	Aug 28, 2017	Aug. 22, 2017	Aug 28, 2017
1	Check		12.63 a	18.75 a	0.00 b	0.00 b
2	Thyme Guard	1 pt/a	1.50 b	2.50 bc	0.00 b	0.00 b
3	Thyme Guard	2 qt/a	0.13 b	0.25 c	10.38 a	13.25 a
4	Serenade opti	20 oz wt/a	2.88 b	4.25 b	0.00 b	0.00 b
LSD P=.10			2.389	2.770	2.217	3.720
Standard Deviation			2.777	3.219	2.577	4.324

Means followed by same letter or symbol do not significantly differ (P=.10, Student-Newman-Keuls)

The data collected in this trial showed moderate levels of cucumber powdery mildew. In this trial, the Thyme Guard treatments provided significant control of powdery, compared to the non-treated control at both the 1 pint and 2 quart rate. Numerically the Thyme Guard provided increased control of powdery mildew compared to the Serenade optima. Thyme Guard at 1 pint and Serenade Optima (20 oz) were safe on treated plants within the greenhouse. However Thyme Guard at 2 quart rate, provided unacceptable injury to the cucumber foliage. I would consider the 1 pint rate of Thyme Guard as a product for managing powdery mildew in commercial greenhouses.

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