

MTM06-4 Control of Phytophthora Blight with Biopesticides Applied Thorough the Dr Conventionally Through Foliar Applications, IR-4 Demonstration/Advanced Project

Margaret Tuttle McGrath and Jane F. Davey, LIHREC, Cornell University

Foliar treatments were applied with a tractor-mounted boom sprayer operated at 120 psi and 85 g/in. apart). Drip applications were applied through two strips of Aquatraxx™ drip tape with a 12-inc gal/min. The injection period for each drip application was 45 minutes.

Fungicide Application Dates: Foliar applications = 7/26, 8/9, 8/23, 9/7, 9/21 Drip applications = 8/2 'Munchkin' pumpkin (mini fruit type) transplanted 6/29 and 7/1. Seedlings for ProPhyte and Fospi Inoculation dates: 8/18, 9/5, 9/21

Treatment (drip and foliar applications)	% Healthy Fruit		% Phytophthora Infected Fruit	
	10/11/2006		10/11/2006*	
ProPhyt (4 pts/A) through drip every 14 days + alternating foliar program of Maestro 80DF (6 lb/A), Mandipropamid (0.35 lb/A), Ranman (2.75 fl oz/A) and Cuprofix Disperss (2.5 lb/A) every 7 days	98.5	c***	0.0	a
Alternation amongst Forum (6.2 fl oz/A) + Cuprofix (2.5 lb/A), Gavel (1.75 lb/A), and Tanos (10 oz/A) + Cuprofix (2.5 lb/A) for conventional pesticide standard every 7 days	97.2	c	0.7	ab
ProPhyt (4 pts/A) through drip every 14 days + Maestro (6 lb/A) foliar applications every 7 days	94.2	bc	2.2	ab
ProPhyt (4 pts/A) through drip every 14 days + Mandipropamid (0.35 lb/A) foliar applications every 7 days	87.8	abc	2.8	ab
Yield Shield (6 oz/A) through drip every 14 days + Yield Shield (6 oz/A) foliar applications every 14 days (alternate weeks)	88.8	abc	3.6	abc
ProPhyt (4 pts/A) through drip every 14 days + ProPhyt (4 pts/A) foliar applications every 14 days (alternate weeks)	86.2	abc	4.2	abc
Kodiak (6 fl oz/A) through drip every 14 days + Kodiak (6 fl oz/A) foliar applications every 14 days (alternate weeks)	82.1	abc	3.7	abc
Fosphite (4 pts/A) through drip every 14 days + Fosphite (4 pts/A) foliar applications every 14 days (alternate weeks)	80.4	abc	6.1	bc
Promax (4 pt) through drip every 14 days + Proud 3 (4 pt) foliar applications every 14 days (alternate weeks)	71.8	a	11.6	c
Actinovate (6 oz/A) through drip every 14 days + Actinovate (6 oz/A) foliar applications every 14 days (alternate weeks)	73.4	a	13.3	c
Control (untreated)	78.0	ab	5.7	bc
Trt <i>P</i> -value	0.0638		0.0413	
Rep <i>P</i> -value	0.6092		0.8117	

*Data were transformed from percentages by a sqrt transformation, analysis of variance was performed and percentages presented in table.

**Data were transformed from percentages by a LOG transformation, analysis of variance was performed and percentages presented in table.

***Means followed by the same letter are not statistically different from each other (Fisher's Protected LSD, F

ip Irrigation System and

pa (D5-25 hollow cone nozzles spaced 17
h emitter spacing and a flow rate of 0.45

2, 8/15, 9/1, 9/13

hite treatments were drench-treated first.

% Phytophthora + Probably Infected Fruit		% Unhealthy Fruit	
10/11/2006*		10/11/2006**	
0.0	a	1.5	a
0.7	ab	2.8	ab
2.7	abc	5.8	abc
6.1	abcd	12.2	bcd
7.1	cd	11.2	bcd
5.5	abcd	13.8	bcd
10.9	cd	17.9	cd
7.3	bcd	19.6	cd
16.1	d	28.2	cd
16.4	d	26.6	d
12.4	cd	22.0	cd
0.0088		0.0142	
0.9045		0.6416	

means were detransformed back to the

d means were detransformed back to the

p=0.05).

MTM06-4 Control of Phytophthora Blight with Biopesticides Applied Through the Drip Irrigation System and Conventionally Through Foliar Applications, IR-4 Demonstration/Advanced Project

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Foliar treatments were applied with a tractor-mounted boom sprayer operated at 120 psi and 85 gpa (D5-25 hollow cone nozzles spaced in. apart). Drip applications were applied through two strips of Aquatraxx™ drip tape with a 12-inch emitter spacing and a flow rate of 1 gal/min. The injection period for each drip application was 45 minutes.

Fungicide Application Dates: Foliar applications = 7/26, 8/9, 8/23, 9/7, 9/21 Drip applications = 8/2, 8/15, 9/1, 9/13

'Munchkin' pumpkin (mini fruit type) transplanted 6/29 and 7/1. Seedlings for ProPhyite and Fosphite treatments were drench-treated 1 Inoculation dates: 8/18, 9/5, 9/21

Treatment (drip and foliar applications)	% Healthy Fruit		% Phytophthora Infected Fruit		% Phytophthora + Probably Infected Fruit		% Unhealthy Fruit
	10/11/2006	10/11/2006*	10/11/2006*	10/11/2006*	10/11/2006*	10/11/2006*	
ProPhyt (4 pts/A) through drip every 14 days + alternating foliar program of Maestro 80DF (6 lb/A), Mandipropamid (0.35 lb/A), Ranman (2.75 fl oz/A) and Cuprofix Disperss (2.5 lb/A) every 7 days	98.5 c***	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	1.5
Alternation amongst Forum (6.2 fl oz/A) + Cuprofix (2.5 lb/A), Gavel (1.75 lb/A), and Tanos (10 oz/A) + Cuprofix (2.5 lb/A) for conventional pesticide standard every 7 days	97.2 c	0.7 ab	0.7 ab	0.7 ab	0.7 ab	0.7 ab	2.8
ProPhyt (4 pts/A) through drip every 14 days + Maestro (6 lb/A) foliar applications every 7 days	94.2 bc	2.2 ab	2.2 ab	2.2 ab	2.7 abc	2.7 abc	5.8
ProPhyt (4 pts/A) through drip every 14 days + Mandipropamid (0.35 lb/A) foliar applications every 7 days	87.8 abc	2.8 ab	2.8 ab	2.8 ab	6.1 abcd	6.1 abcd	12.2
Yield Shield (6 oz/A) through drip every 14 days + Yield Shield (6 oz/A) foliar applications every 14 days (alternate weeks)	88.8 abc	3.6 abc	3.6 abc	3.6 abc	7.1 cd	7.1 cd	11.2
ProPhyt (4 pts/A) through drip every 14 days + ProPhyt (4 pts/A) foliar applications every 14 days (alternate weeks)	86.2 abc	4.2 abc	4.2 abc	4.2 abc	5.5 abcd	5.5 abcd	13.8
Kodiak (6 fl oz/A) through drip every 14 days + Kodiak (6 fl oz/A) foliar applications every 14 days (alternate weeks)	82.1 abc	3.7 abc	3.7 abc	3.7 abc	10.9 cd	10.9 cd	17.9
Fosphite (4 pts/A) through drip every 14 days + Fosphite (4 pts/A) foliar applications every 14 days (alternate weeks)	80.4 abc	6.1 bc	6.1 bc	6.1 bc	7.3 bcd	7.3 bcd	19.6
Promax (4 pt) through drip every 14 days + Proud 3 (4 pt) foliar applications every 14 days (alternate weeks)	71.8 a	11.6 c	11.6 c	11.6 c	16.1 d	16.1 d	28.2

Actinovate (6 oz/A) through drip every 14 days + Actinovate (6 oz/A) foliar applications every 14 days (alternate weeks)	73.4 a	13.3 c	16.4 d	26.6
Control (untreated)	78.0 ab	5.7 bc	12.4 cd	22.0
Trit <i>P-value</i>	0.0638	0.0413	0.0088	0.01
Rep <i>P-value</i>	0.6092	0.8117	0.9045	0.64

*Data were transformed from percentages by a sqrt transformation, analysis of variance was performed and means were detransformed back to the percentages presented in table.

**Data were transformed from percentages by a LOG transformation, analysis of variance was performed and means were detransformed back to the percentages presented in table.

***Means followed by the same letter are not statistically different from each other (Fisher's Protected LSD, $P=0.05$).

d	
cd	
42	
.16	

e

ed 17
0.45

first.

healthy
lit
:006**
a
ab
abc
bcd
bcd
bcd
cd
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cd