

Efficacy of HeadsUp on Bacterial Spot in Tomato, Fall 2002

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In this experiment, we investigated the effect of Kocide DF, Manzate 75DF, Actigard, Thymol and Heads Up on bacterial spot severity. During Fall, bacterial spot and target spot had a very severe impact. The effects of bacterial spot (caused by *Xanthomonas campestris* pv. *vesicatoria*) and target spot (caused by *Corynespora cassiicola*) were assessed from September to October.

These experiments were conducted at a research farm in Quincy, FL (University of Florida, NFREC) to evaluate the efficacy of several compounds for control of bacterial spot on susceptible tomato cultivar BHN-555.

Materials and Methods

Treatments were replicated four times with 20 plants per plot (single row) (50 X 180 cm plant spacing in randomized complete block design (RCBD)). Natural inoculum was the source of infections. Five-week-old seedlings were transplanted July 29 on to raised beds previously fumigated with methyl bromide (67%) + chloropcrin (33%) and covered with white polyethylene (mulch), drip-irrigated, and staked (fertilizer applied 195-60-195 lb/A N-P₂O₅-K₂O). Spray volume started at 26 gpa and was increased to a maximum of 65 gpa. Sprays began on August 1 and ended on October 10. Timing of product application is noted in Table 1. Disease severity was assessed three times for bacterial spot and target spot. Fruit were harvested on October 16 and October 28, 2002 from 12 plants per plot.

Results

Bacterial spot and target spot severity is shown in Table 1. Total yield data is shown in Table 2.

Table 1. Efficacy of the products on bacterial spot and target spot.

Treatments	% Disease Severity ^z Fall 2002		
	September 18	October 2	October 14
UTC ^y	2.6 ab	13.4 a	69.9 a
Kocide DF + Manzate 75DF ^x	1.4 b	4.4 b	42.1 defg
Actigard ^w	1.7 ab	7.3 b	61.7 abc
Heads Up ^u 1	2.3 ab	8.7 ab	60.9 abc
Heads Up ^u 2	2.0 ab	8.1 ab	64.0 abc
Heads Up ^u 3	4.0 a	9.9 ab	53.9 abcde
Heads Up ^u 4	2.0 ab	7.3 b	59.3 abc
Thymol ^r	2.9 ab	8.1 ab	58.9 abc
Thymol ^r + Actigard ^w	1.7 ab	6.7 b	52.3 bcdef

^z Means with the same letter are not significantly different (P=0.05) by Duncan's multiple range test (SAS). Percent disease severity includes combined effect of bacterial spot and target spot, especially on October 14.

^y UTC= Untreated control

^x Kocide DF (4.8 g/L) + Manzate 75DF (4.8 g/L) applied weekly, foliar application

^w Actigard (60 mg/L) applied every 14 days, foliar application

^u 94815 HeadsUp = (1 g/L deionized water); Heads Up1 applied one time, as root dip just before transplanting; Heads Up2 applied one time, as foliar application 5 days before transplanting; Heads Up3 applied two times, once as foliar application 5 days before transplanting, then as root dip just before transplanting; Heads Up4 applied one time, as foliar application 3 days after transplanting

^rThymol (0.25 g Thymol + 0.5 ml 70% Ethanol + 0.1 ml detergent / 1 L) applied weekly, foliar application

Table 2. Total yield of tomato harvested on October 16 and October 28.

Treatments	Yield ^z (lb/plant)				Percent Marketable
	Medium	Large	Extra Large	Total	
UTC ^y	0.54 ab	1.28 abc	3.27 abc	5.10 abc	67.7
Kocide DF + Manzate 75DF ^x	0.50 ab	1.45 a	3.26 abc	5.22 abc	66.1
Actigard ^w	0.73 a	1.41 ab	2.83 bc	4.97 abc	60.6
Heads Up ^u 1	0.43 ab	0.98 bc	2.35 c	3.77 c	54.9
Heads Up ^u 2	0.40 b	1.04 abc	3.26 abc	4.71 bc	60.6
Heads Up ^u 3	0.51 ab	1.10 abc	3.94 ab	5.56 ab	68.0
Heads Up ^u 4	0.56 ab	0.97 bc	2.87 bc	4.41 bc	57.6
Thymol ^t	0.61 ab	1.27 abc	3.30 abc	5.18 abc	60.4
Thymol ^t + Actigard ^w	0.61 ab	1.24 abc	3.23 abc	5.09 abc	65.0

^z Means with the same letter are not significantly different (P=0.05) by Duncan's multiple range test (SAS).

^y UTC= Untreated control.

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