

CONTROL OF BACTERIAL LEAF SPOT ON TURNIP GREENS ('ALLTOP') - BIXBY, 2001¹
J. Damicone and M. Trent

Treatment & rate/A (timing) ²	Bacterial leaf spot (%) ³		Cercospora leaf spot (%)	
	incidence ⁴	severity ⁵	incidence ⁴	severity ⁵
Kocide 2000 1.5 lb (1,2)	52	21	6	1
Kocide 2.4F 2.6 pt (1,2)	50	22	7	2
Aliette 80WG 3 lb (1,2)	49	21	5	1
Actigard 50WG 0.75 oz (1,2)	49	16	2	2
Serenade WP 2 lb (1,2)	44	16	7	1
check	58	28	4	1
LSD _{0.05}	NS ⁶	6	NS	NS

¹ The herbicide Treflan 4E at 0.5 pt/A and the insecticide Diazinon 4E at 2 qt/A were broadcast and incorporated into the soil prior to seeding on 31 Aug. Plots were top-dressed with 63-0-0 lb/A N-P-K on 11 Sep. Plots were mowed on 1 Oct and treatments were applied to the regrowth for a second cutting. Plots consisted of 4-row beds, 25 ft long, with rows spaced 15 inches apart. A 3 ft section of the middle two rows of each plot was inoculated with *Pseudomonas syringae* pv. *maculicola* by spraying plants to runoff with a bacterial suspension (10⁷ cells/ml) on 2 Oct. Plots received 0.5 to 0.75 inches of overhead irrigation on 1 Sep, 3 Sep, 7 Sep, 11 Sep, and 4 Oct.

² Sprays were broadcast through flat-fan nozzles (8002vk) spaced 18 inches apart using a wheelbarrow sprayer calibrated to deliver 31 gal/A at 40 psi. Spray numbers 1 and 2 correspond to the spray dates 1=3 Oct, 2=17 Oct.

³ Caused by *Pseudomonas syringae* pv. *maculicola*.

⁴ Percentage of leaves with symptoms taken on 1 Nov.

⁵ Percentage of leaf area with symptoms taken on 1 Nov.

⁶ Treatment effect not significant at P=0.05.

CONTROL OF CERCOSPORA LEAF SPOT ON TURNIP GREENS ('ALLTOP')
BIXBY, 2001¹
J. Damicone and M. Trent

Treatment & rate/A (timing) ²	Bacterial leaf spot (%) ³		Cercospora leaf spot (%)	
	incidence ⁴	severity ⁵	incidence ⁴	severity ⁵
Benlate 50W 0.5 lb (1,2)	47	22	1	0.2
Quadris 2.08F 9.2 fl oz (1,2)	50	23	1	0.1
Cabrio 20WG 0.75 lb (1,2)	48	23	1	0.1
Actigard 50WG 0.75 oz (1)				
Quadris 2.08F 9.2 fl oz (2)	50	18	13	3.1
Quadris 2.08F 9.2 fl oz (2)	44	23	15	4.3
check	38	15	39	11.4
LSD _{0.05}	NS ⁶	NS	12	4.2

¹ The herbicide Treflan 4E at 0.5 pt/A and the insecticide Diazinon 4E at 2 qt/A were broadcast and incorporated into the soil prior to seeding on 31 Aug. Plots were top-dressed with 63-0-0 lb/A N-P-K on 11 Sep. Plots were mowed on 1 Oct and treatments were applied to the regrowth for a second cutting. Plots consisted of 4-row beds, 25 ft long, with rows spaced 15 inches apart. Plots received 0.5 to 0.75 inches of overhead irrigation on 1 Sep, 3 Sep, 7 Sep, 11 Sep, and 4 Oct.

² Sprays were broadcast through flat-fan nozzles (8002vk) spaced 18 inches apart using a wheelbarrow sprayer calibrated to deliver 31 gal/A at 40 psi. Spray numbers 1 and 2 correspond to the spray dates 1=3 Oct, 2=17 Oct.

³ Caused by *Pseudomonas syringae* pv. *maculicola*.

⁴ Percentage of leaves with symptoms taken on 1 Nov.

⁵ Percentage of leaf area with symptoms taken on 1 Nov.

⁶ Treatment effect not significant at P=0.05.

PUMPKIN POWDERY MILDEW CONTROL ('CONNECTICUT FIELD') - STILLWATER, 2001¹
J. Damicone and M. Trent

Treatment and rate/A (timing) ²	Powdery mildew (%) ³		
	Incidence	Defoliation	Yield (cwt/A) ⁴
Microthiol 80DF 5 lb (1-6)	0.5	0	429.6
Cabrio 20WG 0.75 lb (1-6)	1.2	0	294.6
Cabrio 20WG 1 lb (1-6)	0.4	0	243.5
Quadris 2.08F 12.3 fl oz (1-6)	0.0	0	549.9
Flint 50WG 1.5 oz (1-6)	0.8	0	465.7
Nova 40W 4 oz (1-6)	0.4	0	284.2
Cuprofix 20WG 6 lb (1-6)	7.5	0	276.1
Rocket 50W 6 oz (1-6)	0.0	0	234.1
Serenade WP 2 lb (1-6)	45.0	7.5	330.9
Flint 50WG 1.5 oz (1,3,5) Nova 40W 4 oz (2,4,6)	0.2	0	341.9
Flint 50WG 2 oz (2,4,6)	1.0	0	313.2
Microthiol 80DF 5 lb (2,4,6)	5.8	0	377.8
check	31.6	4.6	196.8
LSD _{0.05}	8.3	2.2	184.8

¹ Fertilizer (67-46-46 lb/A N-P-K) was incorporated prior to direct seeding on 5 July. An experimental herbicide was broadcast after planting for weed control. Plots were top-dressed with 50-0-0 lb/A N-P-K on 18 Aug. Plots consisted of single, 21-ft-long rows spaced 12 ft apart. Squash bug was controlled with Ambush 2E at 12.8 fl oz/A on 10 Aug, 22 Aug, 29 Aug, 7 Sep, 14 Sep, 21 Sep, and 28 Sep. Plots received 1 inch water by sprinkler irrigation on 8 Aug and 28 Aug.

² Fungicide treatments were broadcast using 8003vk flat-fan nozzles in 30 gal/A at 40 psi. Spray numbers (1-6) correspond to the spray dates of 1=22 Aug, 2=29 Aug, 3=7 Sep, 4=14 Sep, 5=21 Sep, 6=28 Sep.

³ Incidence = percentage of plot foliage with powdery mildew symptoms, Defoliation = percentage of leaves killed by powdery mildew.

⁴ Yield was taken on 23 Oct. Yields were highly variable and differences observed were not due to powdery mildew or any other obvious disease.

WATERMELON ANTHRACNOSE CONTROL ('ROYAL SWEET') - PERKINS, 2001 ¹
J. Damicone and M. Trent

Treatment and rate/acre (timing) ²	Anthracnose (%) ³			Defol. (%) ⁴	Yield (cwt/A) ⁵	
	9 Aug	17 Aug	31 Aug	31 Aug	healthy	diseased
Bravo 82.5DF 1.4 lb (1-6)	0.2	0.1	10.6	3.7	249.8	17.2
Quadris 2.1F 12.3 fl oz (1-6)	3.0	4.9	17.9	8.5	218.5	14.7
Flint 50WG 2 oz (1-6)	1.2	3.2	12.5	4.1	176.5	0.0
Cabrio 20WG 12 oz (1-6)	0.2	0.2	10.4	2.8	248.3	5.1
Cabrio 20WG 16 oz (1-6)	0.1	1.2	8.3	1.6	221.9	13.0
Topsin M 70W 8 oz + Penncozeb 75DF 2 lb (1-6)	0.1	0.4	0.1	0	234.0	7.0
Dithane 75DF 2 lb (1-6)	0.3	0	4.0	0.8	173.9	5.4
Cabrio 20WG 12 oz (1,3,5) Dithane 75DF 2 lb (2,4,6)	0.1	0.8	1.8	0.6	223.4	0
Dithane 75DF 2 lb + Zoxium 80W 4 oz (1-6)	0.2	0.6	1.9	0.4	207.6	55.8
check	11.2	32.9	59.1	46.7	131.6	48.2
LSD _{0.05}	2.2	5.3	7.9	4.9	NS ⁶	32.0

- ¹ Fertilizer (68-48-48 lb/A N-P-K) and the herbicide Prefar 4E at 5 qt/A were preplant incorporated prior to direct seeding on 8 June. An experimental herbicide was broadcast after planting for broadleaf weed control. Plots were top-dressed with 50-0-0 lb/A N-P-K on 12 Jul and consisted of single, 21-ft-long rows spaced 15 ft apart. Plots were inoculated with the anthracnose fungus on 12 July and 28 July. Plots received 0.5 inch water by sprinkler irrigation on 12 Jul and 13 Jul, and 1 inch water on 23 July and 27 Aug.
- ² Fungicide treatments were broadcast using 8003vk flat-fan nozzles in 30 gal/A at 40 psi. Spray numbers (1-6) correspond to the spray dates of 1=11 Jul, 2=18 Jul, 3=25 Jul, 4=1 Aug, 5=8 Aug, 6=16 Aug.
- ³ Percentage of plot foliage with anthracnose symptoms.
- ⁴ Percentage of plot defoliated (dead leaves).
- ⁵ Marketable melons weighing 14 or more lbs taken on 17 Aug and 30 Aug. Healthy = no anthracnose lesions on melons, diseased = anthracnose lesions on melons.
- ⁶ NS = treatment effect not significant.

WATERMELON FUNGICIDE APPLICATION TIMING TRIAL, Bixby, 2001
J. Shrefler, B. Bostian, J. Duthie

Fungicides	Application Timing***	Aug 28 Foliage Evaluation**		
		Dead Leaves	Green leaves with lesions	Defoliation
1None	----	18.0 a	42.8 a	34 a
2Bravo	Weekly	9.0 b	28.0 bc	26 b
3Bravo	Every two weeks	8.2 b	28.4 bc	15 cd
4Bravo	Every three weeks	7.0 b	30.4 b	20 bc
5Quadris / Kocide*	Weekly	4.2 b	16.8 c	9 d
6Quadris / Kocide	Every two weeks	8.0 b	24.0 bc	22 bc
7Quadris / Kocide	Every three weeks	4.2 b	24.4 bc	11 d

* Quadris and Kocide were alternated. Quadris was used for the initial application.

** Evaluation of Dead Leaves and Defoliation were based on visual observation. Evaluation of green leaves with lesions was based on a count of 50 leaves. Means within a column followed by the same letter were not found to be different based on Duncan's Multiple Range Test.

*** For all treatments receiving fungicide, initial application was made on July 18.

Watermelon (c.v. Jubilee) was planted June 12. Fungicide applications made July 18, 25 and August 1, 8, and 16. At the first application some small fruits (to 3 inches long) were present. Fungicide rates were: Bravo Ultra - 2 pints/acre, Quadris 2.08F - 15.4 ounces/acre and Kocide 101 - 2 lbs./acre. Applications were made in 50 gpa. Flat fan nozzles at 32 psi tank pressure were used.

The main diseases present were anthracnose and cercospora.

SPINACH WHITE RUST CONTROL ('CYPRESS') - BIXBY, 2001 ¹
J. Damicone and M. Trent

Treatment and rate/A (timing) ²	White rust ³	
	Leaves w/ rust (%)	Leaf area w/ rust (%)
check	36.7	4.7
Quadris 2.08F 9.2 fl oz (1-5)	1.6	0.1
Zoxium 80W 5 oz (1-5)	5.8	0.3
Cabrio 20WG 1 lb (1-5)	0.0	0.0
Cabrio 20WG 0.75 lb (1-5)	0.0	0.0
Cabrio 20WG 0.5 lb (1-5)	1.7	0.1
Ranman 400F 2.1 fl oz (1-5)	11.7	0.6
Ranman 400F 2.75 fl oz (1-5)	14.1	1.8
Ranman 400F 2.75 fl oz (1,3,5)		
Cabrio 20WG 0.75 lb (2,4)	0.8	0.0
Zoxium 80W 5 oz (1,3,5)		
Quadris 2.08F 9.2 fl oz (2,4)	3.3	0.4
LSD _{0.05}	12.4	1.3

¹ Spinach was seeded and Dual 8E at 0.5 pt/A was broadcast to control weeds on 9 Mar. The spinach was top-dressed with granular fertilizer to provide 40 lb/A N on 4 Apr. Plots consisted of 4-row beds, 25 ft long, with rows spaced 15 in. apart. Treatments were randomized in four complete blocks. Plots were irrigated on 4 Apr and 8 May.

² Sprays were broadcast through flat-fan nozzles (8002vk) spaced 18 inches apart using a wheelbarrow sprayer calibrated to deliver 31 gal/A at 40 psi. Spray numbers 1 to 5 correspond to the spray dates 1=13 Apr, 2=20 Apr, 3=27 Apr, 4=4 May, and 5=11 May.

³ Disease incidence (percentage of leaves w/rust) and severity (percentage of leaf area w/rust) were assessed on 15 May.

SPINACH WHITE RUST CONTROL ('MELODY') - STILLWATER, 2001 ¹
J. Damicone and M. Trent

Treatment and rate/A (timing) ²	White rust ³	
	Leaves w/ rust (%)	Leaf area w/ rust (%)
check	29.2	5.67
Aliette 80WG 3 lb (1-5)	3.3	0.08
Actigard 50WG 0.75 oz (1-5)	2.5	0.09
Quadris 2.08F 6.1 fl oz (1,3,5)		
Aliette 80WG 3 lb (2,4)	0.8	0.04
Quadris 2.08F 6.1 fl oz +		
Actigard 50WG 0.5 oz (1-5)	0.8	0.02
Quadris 2.08F 6.1 fl oz +		
Actigard 50WG 0.5 oz (1,3,5)	12.5	0.99
Ridomil Gold Copper 70W 1.25 lb +		
Actigard 50WG 0.5 oz (1-5)	0.0	0.00
Quadris 2.08F 6.1 fl oz (1,3,5)		
Actigard 50WG 0.5 oz (2,4)	0.0	0.00
Ridomil Gold Copper 70W 1.25 lb +		
Actigard 50WG 0.5 oz (1,3,5)		
Quadris 2.08F 6.1 fl oz +		
Actigard 50WG 0.5 oz (2,4)	0.0	0.00
Quadris 2.08F 6.1 fl oz (1-5)	0.8	0.04
Cabrio 20WG 1 lb (1-5)	0.0	0.00
Zoxium 80W 4 oz (1-5)	0.0	0.00
Zoxium 80W 5 oz (1-5)	0.8	0.04
Zoxium 80W 6 oz (1-5)	0.0	0.00
Zoxium 80W 5 oz (1,3,5)		
Quadris 2.08F 6.1 fl oz (2,4)	0.0	0.00
LSD _{0.05}	13.2	NS ⁴

¹ Granular fertilizer was incorporated to provide 75 lb/A of N prior to seeding on 19 Mar. Dual 8E at 1.0 pt/A was broadcast to control weeds immediately after planting. Plots consisted of 4-row beds, 25 ft long, with rows spaced 15 in. apart. Plots were top-dressed with granular fertilizer to provide 50 lb/A of N on 10 Apr. Plots received 0.5 inches of sprinkler irrigation on 26 Apr and 15 May. Treatments were randomized in four complete blocks.

² Sprays were broadcast through flat-fan nozzles (8002vk) spaced 18 inches apart using a wheelbarrow sprayer calibrated to deliver 31 gal/A at 40 psi. Spray numbers 1 to 5 correspond to the spray dates 1=7 Apr, 2=15 Apr, 3=22 Apr, 4=30 Apr, and 5=8 May.

³ Disease incidence (percentage of leaves w/rust) and severity (percentage of leaf area w/rust) were assessed on 24 May.

⁴ NS=treatment effect not significant at P=0.05.

TOMATO FOLIAR DISEASE CONTROL ('HEATMASTER') - BIXBY, 2001¹
J. Damicone and M. Trent

Treatment and rate/A (timing) ²	Disease incidence (%) ³		Mite injury (%) ⁴	Yield (cwt/A) ⁵
	28 Jun	3 Aug		
Bravo Ultrex 82.5DF 1.8 lb (1-9)	0.20	11.2	18.7	411.8
Kocide 2000 2 lb (1,3,5,7,9)				
Quadris 2.08F 6.2 fl oz (2,4,6,8)	0.10	10.2	23.7	425.7
Kocide 2000 2 lb (1-9)	0.20	8.7	31.2	423.3
Actigard 50WG 0.75 oz (1-3)				
Kocide 2000 2 lb (4-9)	0.40	7.8	30.0	394.2
Penncozeb 75DF 2.0 lb +				
Kocide 2000 2 lb (1-4)				
Bravo Ultrex 82.5DF 1.8 lb +				
Kocide 2000 2 lb (5-9)	0.00	6.0	25.0	433.9
Actigard 50WG 0.75 oz (1-3)				
Kocide 2000 2 lb (4,6,8)				
Quadris 2.08F 6.2 fl oz (5,7,9)	0.60	13.7	21.2	434.7
Kocide 2000 2 lb (1,3,5,7,9)				
Quadris 2.08F 6.2 fl oz (2,4,6,8)	0.00	15.4	22.5	369.2
Penncozeb 75DF 2.0 lb +				
Cuprofix 20WG 6 lb (1-4)				
Bravo Ultrex 82.5DF 1.8 lb +				
Cuprofix 20WG 6 lb (5-9)	0.00	8.7	16.2	439.6
Kocide 2000 2 lb (1,3,5,7,9)				
Flint 50WG 3 oz (2,4,6,8)	0.00	8.3	17.5	437.3
check	1.80	15.4	17.5	421.2
LSD _{0.05}	NS ⁶	NS	NS	NS

¹ Granular fertilizer (42-42-42 lb/A N-P-K), Treflan 4E at 0.5 pt/A, and Diazinon 4E at 2 qt/A were incorporated into the soil prior to transplanting on 19 Apr. Plots consisted of single rows on 6-ft centers that contained 6 plants spaced 2 ft apart. Plants were grown using stake and weave with drip irrigation as needed. Foliar insects were controlled with 10 weekly applications of Lannate 2.4L at 1.5 pt/A from 19 May to 21 July. Plots received 40 lb of additional N/A on 24 May.

² Sprays were directed through two or four flat-fan nozzles (8004evs) per row using a wheelbarrow sprayer calibrated to deliver 63 (2 nozzles) or 115 (4 nozzles) gal/A at 40 psi. Spray numbers 1 to 9 correspond to the spray dates 1=11 May, 2=22 May, 3=30 May, 4=6 June, 5=14 June, 6=22 June, 7=29 June, 8=9 Jul, 9=16 Jul.

³ Percentage of foliage with symptoms of foliar diseases (fungal and bacterial leaf spots).

⁴ Percentage of foliage with symptoms of mite injury.

⁵ Marketable yield taken from 14 harvests beginning 11 June.

⁶ Treatment effect not significant at P=0.05.