

Carrot (*Daucus carota* 'Fontana')
Alternaria leaf blight (*Alternaria dauci*)
Cercospora leaf blight (*Cercospora carotae*)
White mold (*Sclerotinia sclerotiorum*)

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Evaluation of fungicide treatments and application schedule on foliar blight of carrot, 2011.

A carrot field trial was conducted on a muck soil field previously planted to onion in Endeavor, WI to evaluate control of *Alternaria* leaf blight, *Cercospora* leaf spot, and white mold. Seeds of cultivar Fontana were planted on 5 Jun 2011 (~250,000 seed/acre) using a standard commercial planter. The experimental design consisted of 4 replicates arranged in a randomized complete block design. Each treatment plot consisted of 5-ft-wide beds with four 18-ft-long rows spaced 15 in apart with 8-ft unsprayed buffer alleys between plots in the same row. Fertilizer, herbicide, and fertility applications were made according to standard production practices for the region. Naturally occurring inocula of all three pathogens were present from nearby agricultural production fields. Experimental plots were sprayed with fungicidal treatments using a CO₂ backpack sprayer equipped with four Tee Jet 8002VS nozzles spaced 19-in. apart and calibrated to deliver 35 gal/A at a boom pressure of 40 psi. All treatments were applied at a rate with a calculated equivalence to 20 gal/A. Disease evaluations took place on 13, 28 Jul; 10, 24 Aug; and 28 Sep and involved assessing the overall leaf blight symptoms (%) on four plant canopies in the center row of each experimental plot. Foliar disease severity was combined for all diseases present at each rating. On 28 Sep, two 5-ft sections were hand-harvested from each plot and weighed to determine marketable yield. Precipitation for the production season was 6.82 inches. Supplemental irrigation was not needed.

Foliar symptoms did not progress beyond trace levels until the third rating date (28 Jul). Moderate disease pressure was observed on the untreated control by the final rating date (28 Sep), which had approximately 28% foliar disease and an RAUDPC value of 0.193. All of the fungicide treatments significantly limited disease compared to the untreated control at harvest. Treatment 4 had the lowest disease rating of 6% at harvest, which was statistically better than treatments 6 and 7. Treatments 2-5 significantly suppressed disease progression (RAUDPC) compared to treatments 6, 7, and the untreated control. There were no differences observed in total yield by treatment. There were no phytotoxic symptoms observed throughout the duration of the trial.

Table 1. Effect of foliar-applied fungicides on disease symptoms, yield, and seasonal disease progression.

Treatments (Applied at 14-day intervals)	Rate/A	Application schedule ^z	% Disease Severity (Alternaria blight, Cercospora blight, and white mold combined)					Total Yield (t/A) ^y	Relative AUDPC ^x
			13 Jul	28 Jul	10 Aug	24 Aug	28 Sep		
1 Untreated	--		0.0	0.0	4.0	13.0	28.0c ^w	22.3	0.193c
2 Bravo Weather Stik 6 SC	2.0 pt	1, 2, 3, 4, 5	0.0	0.0	0.0	4.0	9.0ab	25.3	0.121a
3 Quadris Top 2.71 SC alt. Bravo Weather Stik 6 SC	10.0 fl oz 2.0 pt	1, 2, 4, 5 3	0.0	0.0	0.0	4.0	9.0ab	26.9	0.122a
4 Inspire XT 4.17 EC alt. Bravo Weather Stik 6 SC	7.0 fl oz 2.0 pt	1, 2, 4, 5 3	0.0	0.0	0.0	6.0	6.0a	23.2	0.122a
5 A16976 alt. Bravo Weather Stik 6 SC	1.5 pt 2.0 pt	1, 2, 4, 5 3	0.0	0.0	0.0	6.0	9.0ab	26.5	0.127a
6 Omega 4 SC alt. Bravo Weather Stik 6 SC	1.0 pt 2.0 pt	1, 2, 4, 5 3	0.0	0.0	0.0	11.0	13.0b	22.2	0.149b
7 Omega 4 SC alt. Bravo Weather Stik 720 SC	1.5 pt 2.0 pt	1, 2, 4, 5 3	0.0	0.0	0.0	11.0	14.0b	22.5	0.151b

^z Fungicides were applied on the following dates: 1=13 Jul; 2=28 Jul; 3=10 Aug; 4=24 Aug; 5=7 Sep.

^y Two 5-ft-long sections of row were hand harvested in each plot and yield was converted to tons/A.

^x Relative area under the disease progress curve (RAUDPC). Disease severity for each rating date was plotted on a graph and the area under the resulting curve was calculated in order to provide a measure of the relative disease pressure over the duration of the season. A final severity rating of 100% would produce a value of 1.0. All expressed values are a proportion to this maximum.

^w Column means with a letter in common or with no letter are not significantly different (Fisher's LSD, $P=0.05$).