

### Evaluation of fungicide programs for control of early blight of celery, 2019.

The trial was established in a grower-cooperator's field in Wayland, MI in muck soil previously planted to celery. Celery 'CR-1' transplants were planted into the field on 21 Jul with approximately 44,000 plants per acre. Spacing was 20 in. between rows and 8 in. between plants within a row. Fertilization, weed, and insect control were managed to commercial production standards by the grower-cooperator. A completely randomized block design with four replicates was established. Each treatment replicate consisted of two rows that were 20-ft long with a 2-ft buffer zone between treatments within a row. Six treatments were applied with a CO<sub>2</sub> backpack sprayer and a broadcast boom equipped with three XR8003 flat-fan nozzles calibrated at 50 psi and delivering 50 gal/A on 16 and 26 Aug; 6, 16 and 27 Sep; and 8 Oct. Plants were harvested on 18 Oct and trimmed following market specifications. Following harvest, the total number of plants and plants with petiole lesions were counted for each treatment. The severity of disease on stems and leaves was evaluated based on a visual estimation using a rating scale of 0 to 10 where 0=healthy and 10=100% diseased. Data were analyzed using an analysis of variance (ANOVA), with mean separation performed using Fisher's protected least significant difference (LSD) using the statistical software SAS v9.4.

On 18 Oct, 54.3% of the untreated control plants exhibited petiole lesions caused by *Cercospora apii* with a disease severity of 5.3 (0=healthy, 10=100%). Lesions were also evident on the leaves with a rating of 4.8. All fungicide programs significantly reduced the incidence of plants with diseased petioles and the severity of disease on the petioles and leaves compared to the untreated control. The treatments did not result in a significantly greater yield compared to the untreated control. Plants treated with Flint Extra SC alternated with Bravo WeatherStik SC produced a significantly greater yield than Merivon SC alternated with Bravo WeatherStik SC.

Treatment <sup>z</sup> and rate/A, application schedule, applied at 7-10-day intervals	Plants with petiole lesions (%)	Petiole disease severity (0-10) <sup>y</sup>	Leaf disease severity (0-10) <sup>y</sup>	Total yield (lb)
Untreated control	54.5 b <sup>x</sup>	5.3 b	4.8 b	20.5 ab
Bravo WS SC 24 fl oz + Induce SL 6.4 fl oz, apps A,B,D,E				
Miravis Prime SC 13.4 fl oz + Induce SL 6.4 fl oz, apps C,F	16.2 a	1.0 a	1.0 a	21.9 ab
Quadris SC 15.5 fl oz + Induce SL 6.4 fl oz, apps A,C,E				
-alt- Bravo WS SC 24 fl oz + Induce SL 6.4 fl oz, apps B,D,F	18.3 a	1.0 a	0.8 a	21.2 ab
Merivon SC 11 fl oz + Induce SL 6.4 fl oz, apps A,C,E				
-alt- Bravo WS SC 24 fl oz + Induce SL 6.4 fl oz, apps B,D,F	20.7 a	0.8 a	0.5 a	17.9 a
Bravo WS SC 24 fl oz + Induce SL 6.4 fl oz, apps A-F	18.1 a	1.0 a	0.8 a	20.9 ab
Flint Extra SC 2.7 fl oz + Induce SL 6.4 fl oz, apps A,C,E				
-alt- Bravo WS SC 24 fl oz + Induce SL 6.4 fl oz, apps B,D,F	17.1 a	1.3 a	1.0 a	22.8 b
Luna Sensation SC 5 oz + Induce SL 6.4 fl oz, apps A,C,E				
-alt- Bravo WS SC 24 fl oz + Induce SL 6.4 fl oz, apps B,D,F	13.3 a	0.8 a	1.0 a	21.7 ab
P-value	0.0025	<0.0001	<0.0001	0.3089

<sup>z</sup>apps = applications. Application dates: A=16 Aug, B=26 Aug C=6 Sep, D=16 Sep, E=27 Sep, F=8 Oct. Bravo WS = Bravo WeatherStik SC. -alt- = alternate.

<sup>y</sup>Based on a visual estimation of the severity of disease on infected tissue, on a scale of 0 to 10, where 0=healthy and 10=100% diseased.

<sup>x</sup>Column means with a letter in common are not significantly different (LSD t-Test; P=0.05).