

WATERMELON (*Citrullus lanatus* ‘Crimson Sweet’)
 Gummy stem blight; *Didymella bryoniae*
 Cercospora leaf spot; *Cercospora citrullina*
 Downy mildew; *Pseudoperonospora cubensis*

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Evaluation of fungicides for management of foliar diseases on watermelon, 2015.

The experiment was conducted at the University of Maryland’s Lower Eastern Shore Research and Education Center, Salisbury, as a randomized complete block design with six fungicide treatments and four replications. Plots consisted of one raised bed, 40 ft long, on 7-ft centers using 1.25-mil plastic and one line of 8-in. emitter spaced drip tape. The beds were shaped and covered with plastic in a one pass operation on 22 May. Four-week-old seedlings were removed from the greenhouse to begin hardening off on 21 May. They were transplanted into the field 36 in. apart with a 20-20-20 (N-P-K) (2.5 lb/150 gal water) starter solution on 29 May. Soil moisture was maintained by drip and overhead sprinkler irrigation as needed. Fungicide applications began 24 Jun, when the vines met in the row, and were applied weekly until 13 Aug. Fungicides were applied with a tractor-mounted sprayer that delivered 45 gal/A at 43 psi through six D4-45 hollow-cone nozzles mounted in a directed pattern. The percent severity of Cercospora leaf spot, gummy stem blight and downy mildew were evaluated on 31 Jul. Defoliation due to all diseases, including downy mildew, was evaluated as the percent necrotic tissue on a whole plot basis on 17 Aug, when individual symptoms could not be distinguished. All mature and marketable fruit from each plot were harvested, counted, and weighed on 3 Aug. A final harvest was made on 10 Aug by removing all remaining marketable and nonmarketable fruit, which were counted and weighed. Percent brix was evaluated for three random fruit per plot on each harvest date.

Cercospora leaf spot, gummy stem blight, and downy mildew occurred in all plots during the season. All fungicide schedules reduced Cercospora leaf spot, gummy stem blight and downy mildew severity as compared to the non-treated plots on 31 Jul when disease severity was low. By 17 Aug, gummy stem blight and downy mildew had progressed and caused severe necrosis in the non-treated plots. Plots sprayed with either Aprovia Top at the high rate and Inspire Super, or with Luna Experience had the least foliar necrosis, which was significantly lower than when Aprovia Top at the low rate was used or the non-treated plots. There were no statistically significant differences in % brix (data not shown) or yield among treatments. No phytotoxicity was observed.

Treatment and rate/A	Application dates ^z	Cercospora leaf spot (%) 31 Jul	Gummy stem blight (%) 31 Jul	Downy mildew severity (%) 31 Jul	Foliar necrosis (%) 17 Aug	Yield lb/plot
Bravo Weather Stik 6SC 24 fl oz; Aprovia Top EC 8.5fl oz	1,2,3,6,8 4,5,7	1.2 b ^y	2.2 b	0.00 c	18.3 b	185 a
Bravo Weather Stik 6SC 32 fl oz; Aprovia Top EC 10.5fl oz	1,2,3,6,8 4,5,7	0.9 bc	1.3 b	0.25 bc	14.3 bc	213 a
Bravo Weather Stik 6SC 32 fl oz; Aprovia Top EC 10.5 fl oz Inspire Super 2.82SC 20 fl oz	1,2,3,6 4,7 5,8	1.0 bc	1.7 b	0.00 c	13.3 c	226 a
Bravo Weather Stik 6SC 32 fl oz; Aprovia Top EC 10.5 fl oz; Inspire Super 2.82SC 20fl oz	1,2,3,6 5,8 4,7	0.2 c	1.5 b	0.03 bc	13.8 c	211 a
Bravo Weather Stik 6SC 32fl oz; Luna Experience SC 17fl oz	1,2,3,6,8 4,5,7	0.7 bc	1.6 b	0.46 b	11.3 c	214 a
Non-treated		4.3 a	7.2 a	3.64 a	81.3 a	220 a
<i>P</i> value ^x		0.0008	0.0002	0.0001	0.0001	0.4217

^z Application dates were 1=24 Jun, 2=1 Jul, 3=8 Jul, 4=15 Jul, 5=23 Jul, 6=29 Jul, 7=5 Aug, and 8=13 Aug.

^y Mean values in each column followed by the same letter do not significantly differ according to Fisher’s protected LSD ($P = 0.05$).

^x P values ≤ 0.05 indicate significant differences are likely to exist among treatments.