

**Evaluation of fungicides for management of powdery mildew on squash, 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 thirteen fungicide treatments and four replications. Plots consisted of one raised bed, 30 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. Seeds were sown in the field 36 in. apart with a 20-20-20 (N-P-K) (2.5 lb/150 gal water) starter solution on 8 Jun. Soil moisture was maintained by drip and overhead sprinkler irrigation as needed. Fungicide applications began 14 Jul and were applied weekly until 4 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. Percent powdery mildew severity in each plot was assessed on 31 Jul and 13 Aug. The percent sporulation was estimated on the lower and upper surface of three random leaves positioned in the middle of the canopy. All mature and marketable fruit from each plot were harvested, counted, and weighed on 13, 15, 17, 20, 23, 29, 31 Jul and 3 Aug. A final harvest was made on 6 Aug by removing all remaining marketable and nonmarketable fruit, which were counted and weighed.

On 31 Jul all programs reduced powdery mildew severity on the upper leaf surface, and there were no differences among programs. However, on the lower leaf surface, Torino, Quintec, Aprovia Top and Luna Experience at 16 fl oz/A alternated with Procure; Torino alternated with Proline; and Luna Experience alone resulted in the greatest reduction of powdery mildew. Fontelis alternated with Torino, Aprovia Top alternated with Bravo, and a program where Torino and Procure were applied with the first spray delayed until 22 Jul all significantly reduced powdery mildew on the lower leaf surface as compared to the non-treated plots, but did not perform as well on 31 Jul as the top tier treatments. OSO alternated with Procure reduced powdery mildew as compared to the control, but OSO alone did not. On 13 Aug, Luna Experience alternated with Procure and Quintec applied twice followed by Procure resulted in the lowest numerical severity on both the upper and lower leaf surface, and Aprovia Top alternated with Bravo Weatherstik performed well on the upper leaf surface. In programs using Procure and/or Torino: Proline alternated with Torino, and Aprovia Top alternated with Procure and Luna Experience alone were intermediate. There were no statistically significant differences in yield. Quintec, which is not registered on summer squash, resulted in phytotoxicity (data not shown).

Treatment and rate/A	Application dates <sup>z</sup>	Powdery Mildew (%)				Yield lb/plot
		31 Jul		13 Aug		
		Upper Leaves	Lower Leaves	Upper Leaves	Lower Leaves	
OSO SC 6.5 fl oz	1-4	5.33 b	17.53 a	65.38 ab	82.61 ab	30.40 a
OSO SC 6.5 fl oz; Procure SC 8 fl oz	1,3 2,4	1.04 b	7.74 b	22.86 cd	44.03 cde	39.64 a
Aprovia Top EC 10.5 fl oz; Bravo Weatherstik SC 3pt	1,3 2.4	1.63 b	3.02 c	3.85 ef	57.25 bcd	35.21 a
Luna Experience SC 6 fl oz	1-4	0.17 b	0.60 de	16.49 c-f	28.84 de	33.89 a
Fontelis SC 1pt; Torino SC 3.4 oz	1,3 2.4	1.04 b	1.81 cd	40.24 bc	66.45 bc	32.20 a
Luna Experience SC 16 fl oz; Procure SC 8 fl oz	1,3 2,4	0.08 b	0.19 e	2.97 f	4.95 f	29.21 a
Aprovia Top EC 10.5 oz; Procure SC 8 fl oz	1,3 2,4	0.04 b	0.71 de	13.58 def	18.23 ef	29.51 a
Proline SC 5.7 oz; Torino SC 3.4 fl oz	1,3 2,4	0.00 b	0.12 e	22.85 cd	28.99 de	33.25 a
Quintec SC 6 fl oz; Procure SC 8 fl oz	1,2 3,4	0.00 b	0.07 e	3.30 ef	2.60 f	38.58 a
Procure SC 8 fl oz; Torino SC 3.4 fl oz	1,2 3,4	0.08 b	0.22 e	18.29 cde	27.52 de	34.20 a
Procure SC 8 fl oz; Torino SC 3.4 fl oz	1,3 2,4	0.08 b	0.11 e	14.79 def	18.13 ef	37.90 a
Torino SC 3.4 fl oz: Procure SC 8 fl oz	2 3,4	1.38 b	2.70 c	10.91 def	17.47 ef	29.94 a
Non-treated		23.50 a	31.57 a	82.13 a	96.06 a	33.99 a
<i>P</i> value <sup>x</sup>		0.0001	0.0001	0.0001	0.0001	0.7603

<sup>z</sup> Application dates were 1=14 Jul; 2=22 Jul; 3=28 Jul; 4=4 Aug.

<sup>y</sup> Mean values in each column followed by the same letter do not significantly differ according to Fisher's protected LSD (*P* = 0.05).

<sup>x</sup> *P* values ≤ 0.05 indicate significant differences are likely to exist among treatments.