

Field evaluation of pollenizers for resistance to Fusarium wilt of watermelon in Maryland, 2014.

The experiment was conducted at the University of Maryland's Lower Eastern Shore Research and Education Center, Salisbury. The field of Fort Mott "A" loamy sand soil had been planted to watermelon for many years and therefore was severely infested with *Fusarium oxysporum* f. sp. *niveum* (FON). Races 1 and 2 of FON had been detected in the field in previous years. The experiment was conducted as a randomized complete block design with four replications. Plots consisted of single row beds, 22 ft long, on 7-ft centers, and covered with 1.25-mil black plastic mulch under which a single drip irrigation tube was placed in the center. Plastic was laid on 8 May. Each plot had 11 plants. Plots were irrigated via drip tape as needed. Pollenizers were transplanted into the field on 9 Jun, 24 in. apart in the row with the application of 20-20-20 (N-P-K) as a starter fertilizer at 2.5 lb/150 gal water. Foliar diseases were managed with applications of Kocide (1.5 pt/A) + Manzate (2 lb/A) on 3 and 23 Jul. Fusarium wilt was evaluated as the number of plants in a plot that were wilted or dead due to FON on 20 Jun and 2 Jul. On 15 Jul and 21 Aug, percent wilt of total foliage was assessed because individual plants could not be distinguished. Rainfall was 0.95 in. during Jun, 3.45 in. during Jul, and 5.05 in. during Aug.

Despite the high inoculum pressure from FON, Fusarium wilt remained low in the early season. However by 2 Jul, wilt on both 'Polimax' and 'Mickeylee' had begun to increase. By 15 Jul, the percent wilt in 'Accomplice' plots was significantly higher than in all other plots. 'Stargazer' had an intermediate level of wilt. 'SP-4', 'SP-5' and 'SP-6' all had significantly less wilt on 21 Aug than other cultivars. In addition, on 21 Aug, 'SP-4', 'SP-5' and 'SP-6' were the only pollenizers that had less than 90% wilt.

Pollenizer	Seed Company	No. plants wilted or dead		% Wilt	
		20 Jun	2 Jul*	15 Jul	21 Aug
SP-4	Syngenta	0.0 a**	0.0 c	0.0 d	62.7 d
SP-5	Syngenta	0.0 a	0.1 bc	0.0 d	84.5 c
SP-6	Syngenta	0.0 a	0.0 c	0.0 d	84.8 c
Sidekick	Harris Moran	0.3 a	0.1 bc	0.7 cd	97.4 b
Polimax	Nunhems	0.3 a	2.5 a	1.3 cd	100.0 a
SF800	Abbott & Cobb	0.0 a	0.9 abc	1.5 c	100.0 a
Mickylee	--	0.0 a	2.0 a	1.6 c	100.0 a
Stargazer	Seminis	0.0 a	0.7 abc	6.4 b	100.0 a
Accomplice	Harris Moran	0.3 a	1.4 ab	43.6 a	100.0 a
<i>P</i> value		0.6946	0.0173	0.0001	0.0001

* The data for the number of plants wilted or dead on 2 Jul were square root transformed prior to analysis. Tables contain de-transformed values.

** Mean values in each column followed by the same letter are not significantly different at $P=0.05$ according to Fisher's LSD.