

Table 20. 2013 Race 4 Fusarium wilt race 4 screening evaluation of RBTN entries in the Kearney research center greenhouse<sup>1</sup> near Parlier, CA., conducted by Univ. of California and USDA/ARS (Hutmacher et al). Evaluations conducted 7 weeks post-emergence on plants following root-dip inoculation with race 4 fusarium at the 2-3 leaf stage. Averages and standard deviations ( $\sigma$ ) are shown.

Cultivar	Number of Plants Evaluated	Foliar Disease Severity Index <sup>†</sup>		Vascular Root Staining <sup>‡</sup>		Number of Main Stem Nodes		Plant Height	
	#	0-5	$\sigma$	0-5	$\sigma$		$\sigma$	cm	$\sigma$
0504-4	15	2.67	1.21	2.33	1.03	5.3	1.2	19.2	6.9
0502-37	15	1.83	1.17	2.17	1.47	6.3	0.8	35.2	12.4
0517-54	15	1.17	0.89	1.67	1.03	6.5	0.6	45.5	6.7
0506-47	15	2.33	1.37	2.50	0.55	4.8	1.7	23.5	5.8
PD 05064	15	1.83	0.98	2.50	1.22	5.8	1.2	38.3	8.5
PD 06078	15	2.00	1.55	2.33	0.82	5.3	1.5	29.7	11.5
PD05069	15	2.67	0.82	3.17	0.75	5.3	0.8	20.0	7.8
PD07092	15	1.83	1.33	2.50	1.05	6.8	1.6	36.2	12.3
GA 2009100	15	0.83	0.75	2.50	0.55	7.2	0.4	36.8	3.8
GA 2010098	15	1.33	1.51	2.33	1.03	6.2	0.8	29.7	7.3
GA 2009037	15	0.33	0.52	2.00	1.26	6.2	0.4	23.7	3.9
GA 2008016	15	2.33	1.37	2.83	0.98	6.8	1.5	26.8	10.0
MD 10-6	15	1.83	0.75	2.67	0.52	5.7	1.0	25.0	7.5
MD 10-5	15	2.33	0.82	2.50	0.55	5.3	1.4	20.2	4.7
MD 25-26ne	15	1.50	1.38	2.50	1.05	5.7	1.2	22.0	10.2
MD-DC	15	1.75	1.71	2.50	1.29	5.8	1.3	30.8	3.6
LA 09309116	15	1.50	0.55	2.67	1.03	5.5	0.6	23.7	3.7
LA 10307140	15	3.00	1.26	3.67	0.52	4.5	1.1	24.5	5.3
LA 10307108	15	3.33	0.82	3.17	0.75	4.5	1.1	24.0	5.4
LA 10307021	15	3.50	1.39	3.33	1.21	5.2	0.8	22.5	4.1
OA-33	15	2.33	1.51	3.33	0.82	6.0	0.0	23.7	3.0
PX 06520-42-2-1	15	2.33	1.03	2.83	0.75	5.8	0.4	24.8	5.5
PX 06520-42-2-3	15	4.50	1.05	3.83	0.41	4.8	1.0	21.5	6.3
AU 10090	15	2.67	2.66	2.83	1.33	5.3	0.8	26.5	3.0
AU 51038	15	1.50	1.22	2.67	1.03	4.8	0.8	17.8	5.9
AU 68036	15	3.50	0.84	3.50	0.55	4.5	1.1	23.5	3.9
AU 55052	15	3.00	1.79	3.33	1.51	5.3	1.2	24.3	5.0
NM 1301	15	0.83	0.75	1.83	0.75	5.0	1.1	23.5	11.7
NM 1302	15	1.17	0.98	2.33	0.52	6.5	0.8	22.7	4.3
Acala 1517-08	15	2.33	1.37	3.67	0.52	5.7	1.4	22.3	4.5
NM 1303	15	2.17	1.47	3.00	1.79	5.7	1.5	21.3	2.5
<b>DP 393 ck</b>	15	2.50	1.64	2.83	0.98	5.2	1.3	18.7	4.7
<b>FM 958 ck</b>	15	1.67	1.03	2.33	0.82	6.8	1.0	30.3	2.4
<b>SG 105 ck</b>	15	2.75	1.50	2.75	1.50	5.0	0.8	22.3	5.9
<b>Daytona RF*</b>	15	3.83	0.41	4.00	0.63	3.8	1.0	12.8	4.4
<b>Phytogen 725RF*</b>	15	2.00	1.67	2.83	1.17	5.2	1.0	18.2	8.2
<b>Phy-802RF**</b>	15	0.17	0.41	0.83	0.75	6.8	1.0	28.8	6.1
<b>Phy-811RF**</b>	15	0.00	0.00	0.50	0.55	6.7	1.4	33.7	12.0

\*Daytona RF and Phytogen 725RF - Moderately-Susceptible to Fusarium Race-4 (Acala Checks)

\*\*Phy-802RF & Phy-811RF - Resistant to Fusarium Race-4 (Pima Checks)

<sup>1</sup>Kearney Research Center greenhouse Fusarium wilt (FOV) race 4 evaluation planted August 21-22 and evaluated October 12-15 (approximately 7-8 weeks post emergence).

<sup>†</sup>Foliar disease severity index scale: 0 = no symptoms; 1 = epinasty and slight dwarfing; 2 = 1 to 30% of leaves chlorotic; 3 = 31 to 80% of leaves chlorotic and severe stunting; 4 = 81 to 100% of leaves chlorotic; and 5 = plant death.

<sup>‡</sup>Vascular Root Staining: 0 = no vascular root staining evident, 1 = light vascular root staining evident as spotty areas, 2 = more continuous than 1, but light colored staining covering an area between one quarter and one half of the stem cross-section, 3 = moderate brown/black staining evident in a band encircling most of the stem cross section, 4 = brown/black staining evident across most vascular tissue in stem cross section, and 5 = plant severely damaged or plant death with staining evident throughout a cross-section of root tissue (Ulloa et al. 2006, 2009a).