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Final Summary
National Peanut Board Report for 2010

Terry Wheeler and Mark Burow, Texas AgriLife Research

Title: Use of Greenhouse Leaf Assays to Predict Peanut Lines with Sclerotinia Blight Resistance.

Methods and Materials: The fungus *Sclerotinia minor* was grown from sclerotia onto water agar and then transferred to potato-dextrose agar (PDA) plates to grow for two days. Peanut lines of Dr. Burow were grown in a growth chamber at 28C for 24-28 days. When they were big enough, the second fully expanded leaf (containing 4 leaflets) from the top of the plant was removed, place in a glass dish and inoculated with a PDA plug of *S. minor*. The plates were placed in a moisture chamber at 25 C for 2 days and then the percentage of leaf showing disease was measured with an image analysis system. The leaflets length and width were also measured. Each replication contained 145 entries, and each replicate was setup on a different day. Typically two replications were set up per week. A total of 10 replications were conducted, but the first two were discarded. It became apparent with the first run, that the isolate (E1750) had lost pathogenicity. After the second replication, subsequent runs were made with inoculum from older sclerotia, but the amount of disease never achieved a satisfactory level. The amount of disease had more to do with the leaflet lengths and widths, than with resistance in the genotypes. As a result, no recommendations could be made for Dr. Burow to plant in his Sclerotinia nursery for 2010.

During the 2010 growing season, several new isolates of *S. minor* were collected. They will be tested for aggressiveness in the fall of 2010.

Table 1. Genotypes tested in 2010 for disease resistance to *Sclerotinia minor* using a leaf assay technique.

Genotype	2009Field Test	Disease
Tx049528-014	F5 Runner(Langley x TOL01)	4.9
Tx049531-012	F5 Runner(Langley x TOL01)	8.3
TXL080255-03	Runner High O/L Plant Rows #1	9.1
TXL080254-03	Runner High O/L Plant Rows #1	9.2
TXL080245-06	Runner High O/L Plant Rows #1	9.6
TXL080246-01	Runner High O/L Plant Rows #1	9.8
TamrunOL01	F5 Runner(Langley x TOL01)	10.2
TXL080247-02	Runner High O/L Plant Rows #1	10.2
TXL080247-03	Runner High O/L Plant Rows #1	10.2
TXL080223-10	Runner High O/L Plant Rows #1	10.5
TXL080255-02	Runner High O/L Plant Rows #1	11
TXL080234-02	Runner High O/L Plant Rows #1	11.1
TXL080211-07	Runner High O/L Plant Rows #1	11.2
Tx049528-011	F5 Runner(Langley x TOL01)	11.6
TXL080235-08	Runner High O/L Plant Rows #1	11.9
TXL080211-10	Runner High O/L Plant Rows #1	12.4
TXL080206-01	Runner High O/L Plant Rows #1	12.7
FR458	Runner High O/L Plant Rows #1	12.8
TXL080235-10	Runner High O/L Plant Rows #1	13.1
TXL080215-01	Runner High O/L Plant Rows #1	13.3
Tx049531-003	F5 Runner(Langley x TOL01)	13.5
Tx049528-031	F5 Runner(Langley x TOL01)	13.7
Tx049531-041	F5 Runner(Langley x TOL01)	14.2
TXL080205-02	Runner High O/L Plant Rows #1	14.2
TXL080251-03	Runner High O/L Plant Rows #1	14.2
TXL080202-08	Runner High O/L Plant Rows #1	14.4
TXL080242-02	Runner High O/L Plant Rows #1	14.5
Tx049537-004	F5 Runner(Langley x TOL01)	14.7
TXL080236-02	Runner High O/L Plant Rows #1	14.7
TxL080201-04	Runner High O/L Plant Rows #1	14.8
TXL080208-05	Runner High O/L Plant Rows #1	14.9
TXL080236-05	Runner High O/L Plant Rows #1	14.9
TXL080215-06	Runner High O/L Plant Rows #1	15.1
Tx049528-016	F5 Runner(Langley x TOL01)	15.2
TXL080227-10	Runner High O/L Plant Rows #1	15.2
TXL080245-03	Runner High O/L Plant Rows #1	15.2
TXL080255-05	Runner High O/L Plant Rows #1	15.2
TXL080217-06	Runner High O/L Plant Rows #1	15.3
TXL080250-06	Runner High O/L Plant Rows #1	15.3
TXL080256-02	Runner High O/L Plant Rows #1	15.3

Tx049540-006	F5 Runner(Langley x TOL01)	15.5
TXL080221-03	Runner High O/L Plant Rows #1	15.6
Tx049531-016	F5 Runner(Langley x TOL01)	15.7
TXL080201-10	Runner High O/L Plant Rows #1	15.7
TXL080220-05	Runner High O/L Plant Rows #1	15.7
TXL080227-17	Runner High O/L Plant Rows #1	15.7
TXL080245-08	Runner High O/L Plant Rows #1	15.7
Tx049543-045	F5 Runner(Langley x TOL01)	15.8
TXL080224-04	Runner High O/L Plant Rows #1	15.8
TXL080250-02	Runner High O/L Plant Rows #1	15.8
Tx049531-005	F5 Runner(Langley x TOL01)	15.9
TXL080252-02	Runner High O/L Plant Rows #1	15.9
TXL080224-02	Runner High O/L Plant Rows #1	16
TXL080217-09	Runner High O/L Plant Rows #1	16.1
TXL080228-03	Runner High O/L Plant Rows #1	16.1
TXL080204-01	Runner High O/L Plant Rows #1	16.3
TXL080247-05	Runner High O/L Plant Rows #1	16.3
Tx049543-016	F5 Runner(Langley x TOL01)	16.6
Tx049540-003	F5 Runner(Langley x TOL01)	16.7
Tx049543-015	F5 Runner(Langley x TOL01)	16.7
TXL080255-04	Runner High O/L Plant Rows #1	16.7
TXL080246-05	Runner High O/L Plant Rows #1	16.8
TXL080251-06	Runner High O/L Plant Rows #1	17
Tx049543-018	F5 Runner(Langley x TOL01)	17.4
Tx049543-021	F5 Runner(Langley x TOL01)	17.4
TXL080245-10	Runner High O/L Plant Rows #1	17.4
TXL080251-04	Runner High O/L Plant Rows #1	17.5
TXL080206-10	Runner High O/L Plant Rows #1	17.7
TXL080201-08	Runner High O/L Plant Rows #1	17.8
TXL080224-05	Runner High O/L Plant Rows #1	17.9
Tx049543-022	F5 Runner(Langley x TOL01)	18
TXL080211-05	Runner High O/L Plant Rows #1	18
Tx049528-028	F5 Runner(Langley x TOL01)	18.1
Tx049528-043	F5 Runner(Langley x TOL01)	18.1
Tx049540-012	F5 Runner(Langley x TOL01)	18.1
Tx049543-038	F5 Runner(Langley x TOL01)	18.1
TXL080251-01	Runner High O/L Plant Rows #1	18.1
TXL080227-11	Runner High O/L Plant Rows #1	18.2
TXL080250-01	Runner High O/L Plant Rows #1	18.2
TXL080217-04	Runner High O/L Plant Rows #1	18.3
TXL080241-05	Runner High O/L Plant Rows #1	18.3
TXL080252-03	Runner High O/L Plant Rows #1	18.3
Tx049540-023	F5 Runner(Langley x TOL01)	18.6
TXL080228-04	Runner High O/L Plant Rows #1	18.6
TXL080249-03	Runner High O/L Plant Rows #1	18.6

Tx049537-009	F5 Runner(Langley x TOL01)	18.8
TXL080244-04	Runner High O/L Plant Rows #1	18.8
TXL080227-20	Runner High O/L Plant Rows #1	19
Tx049537-049	F5 Runner(Langley x TOL01)	19.1
TXL080207-08	Runner High O/L Plant Rows #1	19.1
Tx049534-027	F5 Runner(Langley x TOL01)	19.3
Tx049528-017	F5 Runner(Langley x TOL01)	19.4
TXL080243-01	Runner High O/L Plant Rows #1	19.4
TXL080240-03	Runner High O/L Plant Rows #1	19.6
Tx049528-019	F5 Runner(Langley x TOL01)	20
TXL080205-12	Runner High O/L Plant Rows #1	20
TXL080249-08	Runner High O/L Plant Rows #1	20.1
TXL080250-04	Runner High O/L Plant Rows #1	20.1
Tx049537-045	F5 Runner(Langley x TOL01)	20.2
Tx049540-026	F5 Runner(Langley x TOL01)	20.2
TXL080249-07	Runner High O/L Plant Rows #1	20.2
Tamspan90	Runner High O/L Plant Rows #1	20.3
TXL080224-07	Runner High O/L Plant Rows #1	20.3
TXL080227-16	Runner High O/L Plant Rows #1	20.6
TXL080245-01	Runner High O/L Plant Rows #1	20.7
TXL080239-02	Runner High O/L Plant Rows #1	21
TXL080222-01	Runner High O/L Plant Rows #1	21.3
Tx049528-036	F5 Runner(Langley x TOL01)	21.5
TXL080244-03	Runner High O/L Plant Rows #1	21.7
05Lub268	Runner High O/L Plant Rows #1	21.8
TXL080227-13	Runner High O/L Plant Rows #1	22
TXL080214-07	Runner High O/L Plant Rows #1	22.1
Tx049528-035	F5 Runner(Langley x TOL01)	22.2
TXL080224-03	Runner High O/L Plant Rows #1	22.2
Langley	F5 Runner(Langley x TOL01)	22.6
Tx049528-032	F5 Runner(Langley x TOL01)	22.6
Tx049537-046	F5 Runner(Langley x TOL01)	22.7
TXL080207-11	Runner High O/L Plant Rows #1	22.8
TXL080243-06	Runner High O/L Plant Rows #1	23.1
TXL080242-01	Runner High O/L Plant Rows #1	23.2
TXL080242-04	Runner High O/L Plant Rows #1	23.2
TXL080239-06	Runner High O/L Plant Rows #1	23.8
TXL080242-03	Runner High O/L Plant Rows #1	23.8
TXL080245-07	Runner High O/L Plant Rows #1	23.9
Tx049531-039	F5 Runner(Langley x TOL01)	24.4
TXL080224-08	Runner High O/L Plant Rows #1	24.4
Tx049528-024	F5 Runner(Langley x TOL01)	24.8
Tx049537-050	F5 Runner(Langley x TOL01)	24.8
TXL080216-04	Runner High O/L Plant Rows #1	24.8
TamrunOL07	Runner High O/L Plant Rows #1	25.3

Tx049537-039	F5 Runner(Langley x TOL01)	25.3
Tx049543-012	F5 Runner(Langley x TOL01)	25.5
Tx049540-040	F5 Runner(Langley x TOL01)	25.8
Tamspan90	F5 Runner(Langley x TOL01)	26.6
TXL080208-02	Runner High O/L Plant Rows #1	26.6
TXL080223-13	Runner High O/L Plant Rows #1	26.7
Tx049528-033	F5 Runner(Langley x TOL01)	26.8
Tx049540-004	F5 Runner(Langley x TOL01)	27.2
TXL080243-07	Runner High O/L Plant Rows #1	28.9
TXL080205-09	Runner High O/L Plant Rows #1	29.1
TXL080222-02	Runner High O/L Plant Rows #1	29.9
TXL080201-09	Runner High O/L Plant Rows #1	30.3
TXL080240-01	Runner High O/L Plant Rows #1	30.7
TXL080256-04	Runner High O/L Plant Rows #1	31
TXL080212-02	Runner High O/L Plant Rows #1	33.5