

POTATO (*Solanum tuberosum*)
Early blight; *Alternaria solani*
Late blight; *Phytophthora infestans*
Pink rot; *Phytophthora erythroseptica*

R. V. James, W. R. Stevenson and R. E. Rand
Department of Plant Pathology
University of Wisconsin-Madison
1630 Linden Dr., Madison, WI 53706

Evaluation of potato tuber resistance to early blight, late blight and pink rot, 2006.

Eighty-four cultivars and breeding selections were evaluated for foliar reaction to early blight in a field trial conducted at the Hancock Agricultural Research Station in 2006 (Plant Disease Management Reports (online) Report No. 1:V049. DOI:10.1094/PDMR01, The American Phytopathological Society, St. Paul, MN). Tubers harvested from this trial (stored at ~13° C and 90% RH) were inoculated to test for reaction to: *Phytophthora infestans* US-8 genotype, isolate ME93-2a (Pi); *Phytophthora erythroseptica*, ND isolate PR-02 (Pe); or *Alternaria solani*, WI isolate 100 (As). Three replicates, each consisting of five tubers, were inoculated with each pathogen for each test line. On 2 Nov 06 tubers were inoculated with As, 6.5×10^4 spores/ml, prepared from cultures grown on clarified V8 agar for 12 days at 20° C. Pi inoculum was prepared from cultures grown on rye A agar 11 days at 22° C, and tubers were inoculated 19 Dec 06 with 1.2×10^5 sporangia/ml. Tubers were inoculated 11 Jan 07 with Pe, 3.5×10^4 zoospores/ml. Pe was grown three days in V8 broth in darkness at 20-22° C, then under continuous light for 48 hr. Zoospore production was induced by incubating cultures at 8° C for 1 hr and then holding them at room temperature for 1.5 hr. For each inoculation, four shallow wounds (2 mm diam, 2 mm deep, spaced 2 cm apart along a line) were made on each tuber and a 10 µl drop of inoculum was placed on each wound. After inoculation with Pi or Pe, tubers were incubated 68-70 hr at 22° C and 100% RH. Tubers to be evaluated for pink rot were stored at 22° C and evaluated on 17 Jan 07. Tubers inoculated with Pi were stored at 13° C and 90% RH until evaluated 8 Jan 07. Tubers to be tested for early blight were placed in a growth chamber at 13° C and 90% RH immediately after inoculation until evaluated 21-30 Mar 07. Temperature and relative humidity were typical of storage conditions used for processing potatoes. For each pathogen, severity of symptoms and incidence of infection (the number of inoculation sites with symptoms) were recorded for each tuber. For late blight, up to one half of each tuber (with the line connecting the inoculation points at the center) was peeled and the percentage of this area with late blight symptoms was estimated. For early blight, the length and width of each lesion were recorded. For early and late blight, each tuber was cut in half, along the line connecting the inoculation points, and the depth of symptoms was recorded. For late blight, one depth reading per tuber was taken (the point of deepest symptom development) but the depth of each lesion was measured for early blight. For pink rot, each tuber was cut in half through the inoculation points and cut tubers were incubated at room temperature for 1 hr to allow expression of symptoms. The percentage of cross sectional area with pink rot symptoms was estimated.

Significant differences were observed between entries in tuber reaction to *Phytophthora infestans* (US-8) and *P. erythroseptica*, but not *Alternaria solani*. Incidence of infection for Pi was high for most of the lines tested, but six lines A00412-3LB, A00466-1LBC, CO95051-7W, COTX94218-1R, FL3, and VC1009-1W/Y had less than 88% incidence compared with 100% for Dark Red Norland and Russet Burbank. Eleven entries had 20% or less of the surface area exhibiting symptoms of Pi infection compared with 60 and 80% for Dark Red Norland and Russet Burbank, respectively. There were also six entries inoculated with Pi where we observed 2.0 cm³ or less tuber volume exhibiting decay symptoms compared with a volume of 17 and 36 cm³ symptomatic tissue for Dark Red Norland and Russet Burbank, respectively. The incidence of Pe infection was generally very high, but there were 15 lines where the incidence was less than 75%. These lines were in sharp contrast with Pe incidence on Dark Red Norland (87%) and Russet Burbank (100%). The incidence of infection by *A. solani* was generally high, but in spite of some entries having very low *A. solani* lesion areas and lesion volumes, significant differences were not observed between plot entries due to high variability in the *A. solani* inoculation data. Overall, these results indicate that progress continues to be made in breeding potatoes with tuber resistance to several economically important pathogens.

Cultivar or breeding selection	Source ¹	Maturity ²	2006 field data				Tuber inoculation data										
			Relative AUDPC Early blight ³	Yield ⁴		<i>P. infestans</i> (US-8 genotype)					<i>P. e.</i> (wound infection)					<i>A. solani</i>	
				Total cwt/A	% US#1 size	Inci- dence of infec- tion (%)	% Sur- face area in- fected	Max. lesion depth (cm)	Area affected (cm ²) ⁵	Volume affected (cm ³) ⁶	Inci- dence of infec- tion (%)	% of cross section area affected ⁷	Surface area af- fected (cm ²) ⁸	Inci- dence of infec- tion (%)	Lesion area (cm ²)	Lesion volume (cm ³) ⁹	
A00324-1	ID	EM	0.401	644.7	82.6	100	57	1.3	30	29	100	44	27	83	0.9	0.32	
A00382-3LB	ID	M	0.442	410.4	78.4	98	17	1.3	7	6	87	30	15	72	0.2	0.02	
A00412-3LB	ID	ML	0.365	481.1	78.6	87	79	1.9	40	49	100	53	32	72	0.2	0.03	
A00466-1LBC	ID	ML	0.397	569.7	81.6	83	14	0.9	5	5	100	51	21	65	0.3	0.07	
A00472-20LB	ID	ML	0.348	473.4	70.5	95	8	0.9	3	2	87	14	7	66	0.2	0.04	
A01259-51 LBY	ID	ML	0.388	464.6	63.5	100	80	1.5	28	27	87	37	20	73	1.5	0.64	
A01283-36LB	ID	ML	0.479	399.8	68.0	97	21	1.2	9	7	93	40	19	93	0.5	0.07	
A01375-57LB	ID	M	0.336	374.1	76.7	100	22	1.2	10	8	100	46	25	87	0.4	0.06	
A01590-76LB	ID	M	0.311	777.3	76.5	90	10	1.7	4	5	67	14	7	82	0.6	0.15	
A93157-6LS	NCV		0.326	541.1	78.9	100	75	1.4	36	35	93	37	20	80	0.4	0.14	
A96814-65LB	ID	L	0.400	491.7	68.3	95	16	0.9	6	4	73	20	10	78	0.3	0.05	
A97066-42LB	ID	ML	0.330	385.0	67.5	90	20	0.9	7	4	27	4	2	97	3.1	1.81	
AF 2172-56 RWWh	ME		0.335	656.3	88.1	100	44	0.9	24	16	100	43	24	82	1.5	1.45	
AF 2211-9 RWWh	ME		0.474	521.8	75.1	100	67	2.1	24	35	93	29	12	67	0.7	0.23	
AF 2215-1 RWWh	ME		0.456	506.3	85.7	98	62	1.0	23	16	93	39	14	62	0.3	0.06	
AF 2291-10 RWWh	ME		0.400	471.4	87.4	93	80	1.3	27	26	93	44	18	87	0.7	0.15	
AF 2322-2 RWWh	ME		0.589	471.4	78.6	100	57	0.9	19	11	89	32	19	90	1.0	0.82	
AF 2376-5 RWWh	ME		0.330	584.0	85.1	100	74	1.4	30	28	93	33	15	90	0.9	0.69	
AF 2412-2 Lrus	ME		0.472	390.1	62.1	100	69	0.9	22	14	87	25	12	92	2.8	2.00	
AF 2916-1 RWWh	ME		0.519	538.2	77.5	100	47	0.9	17	11	93	44	24	88	1.0	0.58	
AOTX95265-2ARU	TAMU	ML	0.605	453.0	77.6	100	83	1.0	31	21	100	34	18	82	1.1	0.34	
AOTX95265-3RU	TAMU	ML	0.540	460.8	67.3	100	92	1.3	37	33	93	32	19	98	1.9	0.58	
AOTX95265-4RU	TAMU	ML	0.541	626.3	78.7	100	80	1.3	42	36	100	39	23	90	3.7	1.65	
AOTX95295-3RU	TAMU	ME	0.559	476.3	72.2	100	88	1.3	31	28	100	49	29	93	2.0	0.63	
AOTX98137-1RU	TAMU	E	0.597	576.0	69.0	100	83	1.1	37	26	100	43	20	85	1.8	0.62	
ATTX95490-2W	TAMU	L	0.527	1043.5	63.5	100	44	0.8	16	9	93	39	18	58	0.5	0.17	
ATTX961014-1R/Y	TAMU	L	0.627	381.4	69.8	100	67	1.2	21	17	100	59	23	78	1.4	0.99	
ATTX98453-6R	TAMU	ME	0.594	350.4	67.5	100	69	1.4	22	20	93	49	17	73	1.4	0.54	
ATX9117-1RU	TAMU	ML	0.436	404.6	85.0	100	69	1.3	31	26	93	31	17	73	0.3	0.07	
ATX9202-3RU	TAMU	ML	0.526	539.2	80.5	98	61	1.4	23	22	87	26	14	87	0.7	0.21	
ATX97147-4RU	TAMU	ML	0.376	481.1	66.7	97	84	1.3	39	39	100	39	22	75	2.1	0.73	
CO94035-15RU	CSU	M	0.281	599.2	88.9	100	89	2.3	56	89	100	44	29	85	1.3	0.41	

Cultivar or breeding selection	Source ¹	Maturity ²	2006 field data				Tuber inoculation data										
			Relative AUDPC Early blight ³	Yield ⁴		<i>P. infestans</i> (US-8 genotype)					<i>P. e.</i> (wound infection)					<i>A. solani</i>	
				Total cwt/A	% US#1 size	Inci- dence of infect- ion (%)	% Sur- face area in- fected	Max. lesion depth (cm)	Area affected (cm ²) ⁵	Volume affected (cm ³) ⁶	Inci- dence of infect- ion (%)	% of cross section area affected ⁷	Surface area af- fected (cm ²) ⁸	Inci- dence of infect- ion (%)	Lesion area (cm ²)	Lesion volume (cm ³) ⁹	
CO95051-7W	CSU		0.405	456.9	85.9	83	10	0.7	4	2	87	23	12	83	0.5	0.09	
CO95086-8RU	CSU		0.521	514.0	88.2	100	77	1.1	32	23	100	41	23	87	0.8	0.23	
CO95172-3RU	CSU		0.281	620.5	75.0	100	35	0.9	16	10	67	19	11	93	2.1	0.81	
Colorado Rose	CSU		0.475	704.7	71.6	92	44	1.2	19	19	93	31	14	73	0.9	0.63	
COTX00104-7R	TAMU	M	0.453	632.1	73.9	100	47	1.1	21	17	93	41	18	85	0.6	0.13	
COTX94218-1R	TAMU	L	0.282	754.1	76.7	87	47	0.7	15	8	87	37	13	92	1.9	1.08	
Dark Red Norland	Com	E	0.645	546.2	68.4	100	60	1.2	22	17	87	34	12	87	1.9	1.20	
Defender	ID	L	0.444	554.7	63.0	90	24	1.1	9	8	53	13	7	73	0.8	0.24	
FL1	F-L	M	0.494	560.5	90.9	100	53	1.2	21	18	100	38	17	80	0.3	0.05	
FL10	F-L	EM	0.452	671.1	72.5	100	82	1.3	32	28	100	48	21	85	1.8	1.16	
FL11	F-L	EM	0.489	576.0	89.1	100	42	1.2	13	11	93	43	18	85	0.9	0.34	
FL12	F-L	M	0.392	678.1	90.2	98	57	0.8	19	11	87	35	16	85	0.5	0.12	
FL13	F-L	L	0.308	683.4	81.6	88	59	1.3	25	26	100	33	18	92	1.5	0.72	
FL14	F-L	L	0.402	562.4	67.5	95	27	0.4	7	2	87	34	12	73	0.6	0.35	
FL15	F-L	L	0.464	669.9	80.5	95	28	1.3	10	11	100	40	22	78	0.5	0.12	
FL16	F-L	M	0.420	747.3	90.8	93	73	1.6	24	28	87	38	16	88	1.3	0.32	
FL17	F-L	M	0.443	642.8	86.6	100	88	1.6	37	41	100	53	23	85	1.8	0.84	
FL18	F-L	L	0.504	540.1	67.0	100	47	0.9	18	10	100	38	20	93	1.0	0.35	
FL19	F-L	L	0.276	631.1	90.7	100	65	1.1	25	18	100	37	18	87	0.7	0.26	
FL2	F-L		0.259	454.0	53.7	95	10	0.8	4	2	73	23	9	75	0.5	0.16	
FL20	F-L	L	0.297	701.6	88.7	98	22	1.7	10	12	53	14	7	95	1.8	1.27	
FL21	F-L		0.400	602.1	82.2	100	67	0.9	26	18	73	25	11	88	0.5	0.08	
FL22	F-L	M	0.265	604.5	77.6	100	64	0.9	27	16	80	15	8	87	1.4	0.66	
FL23	F-L	ML	0.344	646.6	85.7	100	52	1.4	25	24	87	18	10	92	0.8	0.26	
FL24	F-L	L	0.255	819.9	93.2	100	64	1.9	28	33	93	34	15	95	1.3	0.36	
FL25	F-L	L	0.357	464.6	78.1	100	49	1.2	19	17	93	37	14	93	1.0	0.72	
FL3	F-L	ML	0.438	578.9	81.1	75	3	0.5	1	0	80	26	12	72	0.9	0.34	
FL4	F-L	ML	0.500	557.6	86.2	100	40	1.0	17	12	100	53	26	75	0.6	0.23	
FL5	F-L		0.470	541.1	80.1	93	80	1.5	41	44	100	40	22	77	0.8	0.26	
FL6	F-L	L	0.519	447.2	73.5	95	17	0.6	5	2	100	48	17	85	0.6	0.28	
FL7	F-L	L	0.357	579.8	82.6	100	61	1.1	24	19	87	35	15	88	1.5	0.49	
FL8	F-L	L	0.445	493.7	79.3	100	82	1.0	33	23	53	18	8	100	1.7	0.58	

Cultivar or breeding selection	Source ¹	Maturity ²	2006 field data				Tuber inoculation data										
			Relative AUDPC Early blight ³	Yield ⁴		<i>P. infestans</i> (US-8 genotype)					<i>P. e.</i> (wound infection)					<i>A. solani</i>	
				Total cwt/A	% US#1	Inci- dence of infection (%)	% Sur- face area in- fected	Max. lesion depth (cm)	Area affected (cm ²) ⁵	Volume affected (cm ³) ⁶	Inci- dence of infection (%)	% of cross section area affected ⁷	Surface area affected (cm ²) ⁸	Inci- dence of infection (%)	Lesion area (cm ²)	Lesion volume (cm ³) ⁹	
FL9	F-L	L	0.375	695.0	82.3	100	75	1.2	28	23	100	38	16	75	0.3	0.02	
IND 1072	ID	L	0.254	621.5	73.5	95	13	1.1	6	6	93	21	11	88	0.4	0.03	
J103	USDA		0.106	553.7	63.5	100	61	1.2	19	14	93	40	15	87	0.7	0.19	
MSA 8254 2B Rus	NCV		0.364	515.0	79.9	100	83	1.4	40	35	100	43	25	93	1.9	0.76	
MSL 794B Rus	NCV		0.411	509.2	71.3	100	64	1.7	39	43	67	25	14	93	4.1	2.85	
MWTX2609-2RU	TAMU	L	0.419	657.3	67.2	100	74	1.0	30	20	93	31	14	69	0.6	0.27	
MWTX2609-4RU	TAMU	L	0.367	710.5	59.2	100	59	1.4	28	25	100	43	22	75	0.3	0.07	
MX6766014	ID	L	0.307	314.6	38.5	100	36	1.2	8	7	100	52	17	68	0.8	0.37	
NDA5507-3Y	ID	EM	0.494	748.3	84.4	100	41	1.4	19	18	100	40	19	78	1.6	0.58	
Rio Grande Russet	CSU		0.363	656.3	77.0	100	65	1.1	34	24	73	32	17	76	0.9	0.41	
Russet Burbank	Com	L	0.522	589.0	55.1	100	82	1.5	35	36	100	49	22	92	0.9	0.22	
T450	USDA		0.245	441.4	76.3	97	48	1.6	15	18	100	40	20	95	1.4	0.61	
TX1475-3W	TAMU	ML	0.541	491.7	55.0	97	68	0.9	23	16	100	54	22	83	1.0	0.24	
TXA549-1RU	TAMU	L	0.429	764.7	77.4	100	64	1.3	30	25	100	52	30	77	0.3	0.04	
VC0967-2R/Y	CSU	EM	0.486	822.6	81.8	93	43	1.2	17	14	93	38	14	87	0.4	0.08	
VC1002-3W/Y	CSU	M	0.417	606.0	88.2	100	82	1.6	27	28	73	19	9	78	0.3	0.03	
VC1009-1W/Y	CSU		0.349	848.0	81.5	78	36	1.1	12	11	60	23	9	83	0.8	0.18	
W1360-5LB Rus	NCV		0.431	350.4	50.9	100	25	1.2	10	8	53	16	6	87	0.3	0.09	
W3162-3LB Rus	NCV		0.393	480.6	75.2	93	36	1.3	18	20	73	21	12	87	0.5	0.17	
W4184-3 Rus	NCV		0.595	428.8	90.0	98	81	1.5	36	37	93	30	20	88	1.8	1.07	
Pr > F ¹⁰			< 0.01	< 0.01	< 0.01	0.04	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.50	0.80	
LSD			0.082	163.0	10.0	12	17	0.6	10	14	26	16	8	NS	NS	NS	

1. Sources of material used in this trial
 Com Commercial grower
 CSU Colorado State University - David Holm
 F-L Frito-Lay, Bob Moerkkerke
 ID USDA/ARS Aberdeen, ID - Rich Novy
 ME University of Maine, Z. Ganga
 NCV North Central Variety Trial, C Kostichka.; A= USDA/ARS Aberdeen, ID - Rich Novy; MS = Michigan State Univ., Plant and Soil Science Dept - David Douches; W= UW-Madison, Dept. of Horticulture Potato Breeding Program - J. Palta, B. Bowen
 TAMU Texas A & M University - Creighton Miller
 USDA USDA/UW Plant Pathology, D. Halterman

2. Maturity group: E = Early; EM = Early-Medium; L = Late; L-VL = Late to Very Late; M = Medium; ML = Medium to Late; NK = Not known; VL = Very Late

3. Relative area under the disease progress curve. Data for each date were plotted on a graph and the area under the line was calculated for each treatment providing a measure of the relative severity of disease throughout the season. A disease rating of 100% for the entire season would produce a value of 1.0. All relative AUDPC values are expressed as a

proportion of this value. Either decreased disease severity or later disease development contribute to lower relative areas under the disease progress curve. Plant Disease Management Reports (online.) Report No. 1:V049. DOI:10.1094/PDMR01. The American Phytopathological Society, St. Paul, MN.

4. Yield from 5 ft of row, converted to cwt/A. Yield was graded by hand by passing tubers over a 1.88-in. grading chain to separate undersize (<a 1.88 in. diam), from tubers \geq a 1.88 in. These larger tubers were classed as US#1 size or culls (rotted, green or severely misshapen).
5. An estimate of the surface area of each tuber affected by late blight calculated from tuber dimensions and % of tuber surface with late blight symptoms.
6. Estimated as one half the volume of an ellipsoid. The volume of an ellipsoid = $4/3 \times \text{area} \times \text{depth}$. Area and maximum lesion depth were used for the calculation (one volume calculation was done for each tuber).
7. Potatoes were cut in half through the line of inoculation. This is the % of the surface of the cross section with symptoms of pink rot.
8. External dimensions were recorded for each tuber. For each tuber, the estimated % of area affected by pink rot was multiplied by the cross-sectional area of the tuber, to give an estimated area affected (in cm^2).
9. The early blight tuber test was not done for all the lines in the field trial. Estimated as one half the volume of an ellipsoid. The volume of an ellipsoid = $4/3 \times \text{area} \times \text{depth}$. Area and maximum lesion depth were used for the calculation (volume was calculated for each lesion).
10. Analysis of variance was performed on data, and Fisher's protected least significant difference (LSD) was calculated ($\alpha=0.05$). NS = not significant at $P = 0.05$.

Data sorted by different criteria (footnote numbers are the same as those for the table above)

Sorted by AUDPC (ascending) - 20 lowest

Cultivar or breeding selection	Source ¹	Maturity ²	2006 field data			Tuber inoculation data										
			Relative AUDPC Early blight ³	Yield ⁴		P. infestans (US-8 genotype)					P. e. (wound infection)			A. solani		
				Total cwt/A	% US#1 size	Inci- dence of infec- tion (%)	% Sur- face area in- fected	Max. lesion depth (cm)	Area affected (cm^2) ⁵	Volume affected (cm^3) ⁶	Inci- dence of infec- tion (%)	% of cross section area affected ⁷	Surface area af- fected (cm^2) ⁸	Inci- dence of infec- tion (%)	Lesion area (cm^2)	Lesion volume (cm^3) ⁹
J103	USDA		0.106	553.7	63.5	100	61	1.2	19	14	93	40	15	87	0.7	0.19
T450	USDA		0.245	441.4	76.3	97	48	1.6	15	18	100	40	20	95	1.4	0.61
IND 1072	ID	L	0.254	621.5	73.5	95	13	1.1	6	6	93	21	11	88	0.4	0.03
FL24	F-L	L	0.255	819.9	93.2	100	64	1.9	28	33	93	34	15	95	1.3	0.36
FL2	F-L		0.259	454.0	53.7	95	10	0.8	4	2	73	23	9	75	0.5	0.16
FL22	F-L	M	0.265	604.5	77.6	100	64	0.9	27	16	80	15	8	87	1.4	0.66
FL19	F-L	L	0.276	631.1	90.7	100	65	1.1	25	18	100	37	18	87	0.7	0.26
CO94035-15RU	CSU	M	0.281	599.2	88.9	100	89	2.3	56	89	100	44	29	85	1.3	0.41
CO95172-3RU	CSU		0.281	620.5	75.0	100	35	0.9	16	10	67	19	11	93	2.1	0.81
COTX94218-1R	TAMU	L	0.282	754.1	76.7	87	47	0.7	15	8	87	37	13	92	1.9	1.08
FL20	F-L	L	0.297	701.6	88.7	98	22	1.7	10	12	53	14	7	95	1.8	1.27
MX6766014	ID	L	0.307	314.6	38.5	100	36	1.2	8	7	100	52	17	68	0.8	0.37
FL13	F-L	L	0.308	683.4	81.6	88	59	1.3	25	26	100	33	18	92	1.5	0.72
A01590-76LB	ID	M	0.311	777.3	76.5	90	10	1.7	4	5	67	14	7	82	0.6	0.15
A93157-6LS	NCV		0.326	541.1	78.9	100	75	1.4	36	35	93	37	20	80	0.4	0.14
A97066-42LB	ID	ML	0.330	385.0	67.5	90	20	0.9	7	4	27	4	2	97	3.1	1.81
AF 2376-5 RW ^h	ME		0.330	584.0	85.1	100	74	1.4	30	28	93	33	15	90	0.9	0.69
AF 2172-56 RW ^h	ME		0.335	656.3	88.1	100	44	0.9	24	16	100	43	24	82	1.5	1.45
A01375-57LB	ID	M	0.336	374.1	76.7	100	22	1.2	10	8	100	46	25	87	0.4	0.06
FL23	F-L	ML	0.344	646.6	85.7	100	52	1.4	25	24	87	18	10	92	0.8	0.26

Sorted by yield (descending) - 20 highest

Cultivar or breeding selection	Source ¹	Maturity ²	2006 field data				Tuber inoculation data										
			Relative AUDPC Early blight ³	Yield ⁴	% US#1 size	<i>P. infestans</i> (US-8 genotype)					<i>P. e.</i> (wound infection)					<i>A. solani</i>	
						Inci- dence of infec- tion (%)	% Sur- face area in- fected	Max. lesion depth (cm)	Area affected (cm ²) ⁵	Volume affected (cm ³) ⁶	Inci- dence of infec- tion (%)	% of cross section area affected ⁷	Surface area af- fected (cm ²) ⁸	Inci- dence of infec- tion (%)	Lesion area (cm ²)	Lesion volume (cm ³) ⁹	
ATTX95490-2W	TAMU	L	0.527	1043.5	63.5	100	44	0.8	16	9	93	39	18	58	0.5	0.17	
VC1009-1W/Y	CSU		0.349	848.0	81.5	78	36	1.1	12	11	60	23	9	83	0.8	0.18	
VC0967-2R/Y	CSU	EM	0.486	822.6	81.8	93	43	1.2	17	14	93	38	14	87	0.4	0.08	
FL24	F-L	L	0.255	819.9	93.2	100	64	1.9	28	33	93	34	15	95	1.3	0.36	
A01590-76LB	ID	M	0.311	777.3	76.5	90	10	1.7	4	5	67	14	7	82	0.6	0.15	
TXA549-IRU	TAMU	L	0.429	764.7	77.4	100	64	1.3	30	25	100	52	30	77	0.3	0.04	
COTX94218-IR	TAMU	L	0.282	754.1	76.7	87	47	0.7	15	8	87	37	13	92	1.9	1.08	
NDA5507-3Y	ID	EM	0.494	748.3	84.4	100	41	1.4	19	18	100	40	19	78	1.6	0.58	
FL16	F-L	M	0.420	747.3	90.8	93	73	1.6	24	28	87	38	16	88	1.3	0.32	
MWTX2609-4RU	TAMU	L	0.367	710.5	59.2	100	59	1.4	28	25	100	43	22	75	0.3	0.07	
Colorado Rose	CSU		0.475	704.7	71.6	92	44	1.2	19	19	93	31	14	73	0.9	0.63	
FL20	F-L	L	0.297	701.6	88.7	98	22	1.7	10	12	53	14	7	95	1.8	1.27	
FL9	F-L	L	0.375	695.0	82.3	100	75	1.2	28	23	100	38	16	75	0.3	0.02	
FL13	F-L	L	0.308	683.4	81.6	88	59	1.3	25	26	100	33	18	92	1.5	0.72	
FL12	F-L	M	0.392	678.1	90.2	98	57	0.8	19	11	87	35	16	85	0.5	0.12	
FL10	F-L	EM	0.452	671.1	72.5	100	82	1.3	32	28	100	48	21	85	1.8	1.16	
FL15	F-L	L	0.464	669.9	80.5	95	28	1.3	10	11	100	40	22	78	0.5	0.12	
MWTX2609-2RU	TAMU	L	0.419	657.3	67.2	100	74	1.0	30	20	93	31	14	69	0.6	0.27	
AF 2172-56 RWh	ME		0.335	656.3	88.1	100	44	0.9	24	16	100	43	24	82	1.5	1.45	
Rio Grande Russet	CSU		0.363	656.3	77.0	100	65	1.1	34	24	73	32	17	76	0.9	0.41	

Sorted by Pi incidence of infection (ascending) - 20 lowest

Cultivar or breeding selection	Source ¹	Maturity ²	2006 field data				Tuber inoculation data										
			Relative AUDPC Early blight ³	Yield ⁴	% US#1 size	<i>P. infestans</i> (US-8 genotype)					<i>P. e.</i> (wound infection)					<i>A. solani</i>	
						Inci- dence of infec- tion (%)	% Sur- face area in- fected	Max. lesion depth (cm)	Area affected (cm ²) ⁵	Volume affected (cm ³) ⁶	Inci- dence of infec- tion (%)	% of cross section area affected ⁷	Surface area af- fected (cm ²) ⁸	Inci- dence of infec- tion (%)	Lesion area (cm ²)	Lesion volume (cm ³) ⁹	
FL3	F-L	ML	0.438	578.9	81.1	75	3	0.5	1	0	80	26	12	72	0.9	0.34	
VC1009-1W/Y	CSU		0.349	848.0	81.5	78	36	1.1	12	11	60	23	9	83	0.8	0.18	
A00466-1LBC	ID	ML	0.397	569.7	81.6	83	14	0.9	5	5	100	51	21	65	0.3	0.07	
CO95051-7W	CSU		0.405	456.9	85.9	83	10	0.7	4	2	87	23	12	83	0.5	0.09	
COTX94218-1R	TAMU	L	0.282	754.1	76.7	87	47	0.7	15	8	87	37	13	92	1.9	1.08	
A00412-3LB	ID	ML	0.365	481.1	78.6	87	79	1.9	40	49	100	53	32	72	0.2	0.03	
FL13	F-L	L	0.308	683.4	81.6	88	59	1.3	25	26	100	33	18	92	1.5	0.72	
Defender	ID	L	0.444	554.7	63.0	90	24	1.1	9	8	53	13	7	73	0.8	0.24	
A97066-42LB	ID	ML	0.330	385.0	67.5	90	20	0.9	7	4	27	4	2	97	3.1	1.81	

Cultivar or breeding selection	Source ¹	Maturity ²	2006 field data				Tuber inoculation data									
			Relative AUDPC Early blight ³	Yield ⁴		<i>P. infestans</i> (US-8 genotype)				<i>P. e.</i> (wound infection)				<i>A. solani</i>		
				Total cwt/A	% US#1 size	Inci- dence of infec- tion (%)	% Sur- face area in- area in- fected	Max. lesion depth (cm)	Area affected (cm ²) ⁵	Volume affected (cm ³) ⁶	Inci- dence of infec- tion (%)	% of section area affected ⁷	Surface area af- fected (cm ²) ⁸	Inci- dence of infec- tion (%)	Lesion area (cm ²)	Lesion volume (cm ³) ⁹
A01590-76LB	ID	M	0.311	777.3	76.5	90	10	1.7	4	5	67	14	7	82	0.6	0.15
Colorado Rose	CSU		0.475	704.7	71.6	92	44	1.2	19	19	93	31	14	73	0.9	0.63
W3162-3LB Rus	NCV		0.393	480.6	75.2	93	36	1.3	18	20	73	21	12	87	0.5	0.17
FL5	F-L		0.470	541.1	80.1	93	80	1.5	41	44	100	40	22	77	0.8	0.26
VC0967-2R/Y	CSU	EM	0.486	822.6	81.8	93	43	1.2	17	14	93	38	14	87	0.4	0.08
AF 2291-10 RWh	ME		0.400	471.4	87.4	93	80	1.3	27	26	93	44	18	87	0.7	0.15
FL16	F-L	M	0.420	747.3	90.8	93	73	1.6	24	28	87	38	16	88	1.3	0.32
FL2	F-L		0.259	454.0	53.7	95	10	0.8	4	2	73	23	9	75	0.5	0.16
FL14	F-L	L	0.402	562.4	67.5	95	27	0.4	7	2	87	34	12	73	0.6	0.35
A96814-65LB	ID	L	0.400	491.7	68.3	95	16	0.9	6	4	73	20	10	78	0.3	0.05
A00472-20LB	ID	ML	0.348	473.4	70.5	95	8	0.9	3	2	87	14	7	66	0.2	0.04

Sorted by Pi % surface area infected (ascending) - 20 lowest

Cultivar or breeding selection	Source ¹	Maturity ²	2006 field data				Tuber inoculation data									
			Relative AUDPC Early blight ³	Yield ⁴		<i>P. infestans</i> (US-8 genotype)				<i>P. e.</i> (wound infection)				<i>A. solani</i>		
				Total cwt/A	% US#1 size	Inci- dence of infec- tion (%)	% Sur- face area in- area in- fected	Max. lesion depth (cm)	Area affected (cm ²) ⁵	Volume affected (cm ³) ⁶	Inci- dence of infec- tion (%)	% of section area affected ⁷	Surface area af- fected (cm ²) ⁸	Inci- dence of infec- tion (%)	Lesion area (cm ²)	Lesion volume (cm ³) ⁹
FL3	F-L	ML	0.438	578.9	81.1	75	3	0.5	1	0	80	26	12	72	0.9	0.34
A00472-20LB	ID	ML	0.348	473.4	70.5	95	8	0.9	3	2	87	14	7	66	0.2	0.04
A01590-76LB	ID	M	0.311	777.3	76.5	90	10	1.7	4	5	67	14	7	82	0.6	0.15
CO95051-7W	CSU		0.405	456.9	85.9	83	10	0.7	4	2	87	23	12	83	0.5	0.09
FL2	F-L		0.259	454.0	53.7	95	10	0.8	4	2	73	23	9	75	0.5	0.16
IND 1072	ID	L	0.254	621.5	73.5	95	13	1.1	6	6	93	21	11	88	0.4	0.03
A00466-1LBC	ID	ML	0.397	569.7	81.6	83	14	0.9	5	5	100	51	21	65	0.3	0.07
A96814-65LB	ID	L	0.400	491.7	68.3	95	16	0.9	6	4	73	20	10	78	0.3	0.05
A00382-3LB	ID	M	0.442	410.4	78.4	98	17	1.3	7	6	87	30	15	72	0.2	0.02
FL6	F-L	L	0.519	447.2	73.5	95	17	0.6	5	2	100	48	17	85	0.6	0.28
A97066-42LB	ID	ML	0.330	385.0	67.5	90	20	0.9	7	4	27	4	2	97	3.1	1.81
A01283-36LB	ID	ML	0.479	399.8	68.0	97	21	1.2	9	7	93	40	19	93	0.5	0.07
A01375-57LB	ID	M	0.336	374.1	76.7	100	22	1.2	10	8	100	46	25	87	0.4	0.06
FL20	F-L	L	0.297	701.6	88.7	98	22	1.7	10	12	53	14	7	95	1.8	1.27
Defender	ID	L	0.444	554.7	63.0	90	24	1.1	9	8	53	13	7	73	0.8	0.24
W1360-5LB Rus	NCV		0.431	350.4	50.9	100	25	1.2	10	8	53	16	6	87	0.3	0.09
FL14	F-L	L	0.402	562.4	67.5	95	27	0.4	7	2	87	34	12	73	0.6	0.35
FL15	F-L	L	0.464	669.9	80.5	95	28	1.3	10	11	100	40	22	78	0.5	0.12
CO95172-3RU	CSU		0.281	620.5	75.0	100	35	0.9	16	10	67	19	11	93	2.1	0.81
MX6766014	ID	L	0.307	314.6	38.5	100	36	1.2	8	7	100	52	17	68	0.8	0.37

Sorted by Pi mean area affected (ascending) - 20 lowest

Cultivar or breeding selection	Source ¹	Maturity ²	2006 field data				Tuber inoculation data									
			Relative AUDPC Early blight ³	Yield ⁴		<i>P. infestans</i> (US-8 genotype)			<i>P. e.</i> (wound infection)			<i>A. solani</i>				
				Total cwt/A	% US#1 size	Inci-dence of infec-tion (%)	% Sur-face area in-fected	Max. lesion depth (cm)	Area affected (cm ²) ⁵	Volume affected (cm ³) ⁶	Inci-dence of infec-tion (%)	% of cross section area affected ⁷	Surface area af-fected (cm ²) ⁸	Inci-dence of infec-tion (%)	Lesion area (cm ²)	Lesion volume (cm ³) ⁹
FL3	F-L	ML	0.438	578.9	81.1	75	3	0.5	1	0	80	26	12	72	0.9	0.34
A00472-20LB	ID	ML	0.348	473.4	70.5	95	8	0.9	3	2	87	14	7	66	0.2	0.04
A01590-76LB	ID	M	0.311	777.3	76.5	90	10	1.7	4	5	67	14	7	82	0.6	0.15
CO95051-7W	CSU		0.405	456.9	85.9	83	10	0.7	4	2	87	23	12	83	0.5	0.09
FL2	F-L		0.259	454.0	53.7	95	10	0.8	4	2	73	23	9	75	0.5	0.16
A00466-1LBC	ID	ML	0.397	569.7	81.6	83	14	0.9	5	5	100	51	21	65	0.3	0.07
FL6	F-L	L	0.519	447.2	73.5	95	17	0.6	5	2	100	48	17	85	0.6	0.28
A96814-65LB	ID	L	0.400	491.7	68.3	95	16	0.9	6	4	73	20	10	78	0.3	0.05
IND 1072	ID	L	0.254	621.5	73.5	95	13	1.1	6	6	93	21	11	88	0.4	0.03
A00382-3LB	ID	M	0.442	410.4	78.4	98	17	1.3	7	6	87	30	15	72	0.2	0.02
A97066-42LB	ID	ML	0.330	385.0	67.5	90	20	0.9	7	4	27	4	2	97	3.1	1.81
FL14	F-L	L	0.402	562.4	67.5	95	27	0.4	7	2	87	34	12	73	0.6	0.35
MX6766014	ID	L	0.307	314.6	38.5	100	36	1.2	8	7	100	52	17	68	0.8	0.37
A01283-36LB	ID	ML	0.479	399.8	68.0	97	21	1.2	9	7	93	40	19	73	0.5	0.07
Defender	ID	L	0.444	554.7	63.0	90	24	1.1	9	8	53	13	7	93	0.8	0.24
A01375-57LB	ID	M	0.336	374.1	76.7	100	22	1.2	10	8	100	46	25	87	0.4	0.06
FL15	F-L	L	0.464	669.9	80.5	95	28	1.3	10	11	100	40	22	78	0.5	0.12
FL20	F-L	L	0.297	701.6	88.7	98	22	1.7	10	12	53	14	7	95	1.8	1.27
W1360-5LB Rus	NCV		0.431	350.4	50.9	100	25	1.2	10	8	53	16	6	87	0.3	0.09
VC1009-1W/Y	CSU		0.349	848.0	81.5	78	36	1.1	12	11	60	23	9	83	0.8	0.18

Sorted by Pi est. volume affected (ascending) - 20 lowest

Cultivar or breeding selection	Source ¹	Maturity ²	2006 field data				Tuber inoculation data									
			Relative AUDPC Early blight ³	Yield ⁴		<i>P. infestans</i> (US-8 genotype)			<i>P. e.</i> (wound infection)			<i>A. solani</i>				
				Total cwt/A	% US#1 size	Inci-dence of infec-tion (%)	% Sur-face area in-fected	Max. lesion depth (cm)	Area affected (cm ²) ⁵	Volume affected (cm ³) ⁶	Inci-dence of infec-tion (%)	% of cross section area affected ⁷	Surface area af-fected (cm ²) ⁸	Inci-dence of infec-tion (%)	Lesion area (cm ²)	Lesion volume (cm ³) ⁹
FL3	F-L	ML	0.438	578.9	81.1	75	3	0.5	1	0	80	26	12	72	0.9	0.34
A00472-20LB	ID	ML	0.348	473.4	70.5	95	8	0.9	3	2	87	14	7	66	0.2	0.04
CO95051-7W	CSU		0.405	456.9	85.9	83	10	0.7	4	2	87	23	12	83	0.5	0.09
FL14	F-L	L	0.402	562.4	67.5	95	27	0.4	7	2	87	34	12	73	0.6	0.35
FL2	F-L	L	0.259	454.0	53.7	95	10	0.8	4	2	73	23	9	75	0.5	0.16
FL6	F-L	L	0.519	447.2	73.5	95	17	0.6	5	2	100	48	17	85	0.6	0.28
A96814-65LB	ID	L	0.400	491.7	68.3	95	16	0.9	6	4	73	20	10	78	0.3	0.05
A97066-42LB	ID	ML	0.330	385.0	67.5	90	20	0.9	7	4	27	4	2	97	3.1	1.81

Cultivar or breeding selection	Source ¹	2006 field data				Tuber inoculation data										
		Maturity ²	Relative AUDPC Early blight ³	Yield ⁴		<i>P. infestans</i> (US-8 genotype)				<i>P. e.</i> (wound infection)						
				Total cwt/A	% US#1 size	Inci-dence of infection (%)	% Sur-face area in-fected	Max. lesion depth (cm)	Area affected (cm ²) ⁵	Volume affected (cm ³) ⁶	Inci-dence of infection (%)	% of section area affected ⁷	Surface area af-fected (cm ²) ⁸	Inci-dence of infec-tion (%)	Lesion area (cm ²)	Lesion volume (cm ³) ⁹
A00466-1LBC	ID	ML	0.397	569.7	81.6	83	14	0.9	5	5	100	51	21	65	0.3	0.07
A01590-76LB	ID	M	0.311	777.3	76.5	90	10	1.7	4	5	67	14	7	82	0.6	0.15
A00382-3LB	ID	M	0.442	410.4	78.4	98	17	1.3	7	6	87	30	15	72	0.2	0.02
IND 1072	ID	L	0.254	621.5	73.5	95	13	1.1	6	6	93	21	11	88	0.4	0.03
A01283-36LB	ID	ML	0.479	399.8	68.0	97	21	1.2	9	7	93	40	19	93	0.5	0.07
MX6766014	ID	L	0.307	314.6	38.5	100	36	1.2	8	7	100	52	17	68	0.8	0.37
A01375-57LB	ID	M	0.336	374.1	76.7	100	22	1.2	10	8	100	46	25	87	0.4	0.06
COTX94218-1R	TAMU	L	0.282	754.1	76.7	87	47	0.7	15	8	87	37	13	92	1.9	1.08
Defender	ID	L	0.444	554.7	63.0	90	24	1.1	9	8	53	13	7	73	0.8	0.24
W1360-5LB Rus	NCV	L	0.431	350.4	50.9	100	25	1.2	10	8	53	16	6	87	0.3	0.09
ATTX95490-2W	TAMU	L	0.527	1043.5	63.5	100	44	0.8	16	9	93	39	18	58	0.5	0.17
CO95172-3RU	CSU	L	0.281	620.5	75.0	100	35	0.9	16	10	67	19	11	93	2.1	0.81

Sorted by *Pe* incidence of infection (ascending) - 20 lowest

Cultivar or breeding selection	Source ¹	2006 field data				Tuber inoculation data										
		Maturity ²	Relative AUDPC Early blight ³	Yield ⁴		<i>P. infestans</i> (US-8 genotype)				<i>P. e.</i> (wound infection)						
				Total cwt/A	% US#1 size	Inci-dence of infection (%)	% Sur-face area in-fected	Max. lesion depth (cm)	Area affected (cm ²) ⁵	Volume affected (cm ³) ⁶	Inci-dence of infection (%)	% of section area affected ⁷	Surface area af-fected (cm ²) ⁸	Inci-dence of infec-tion (%)	Lesion area (cm ²)	Lesion volume (cm ³) ⁹
A97066-42LB	ID	ML	0.330	385.0	67.5	90	20	0.9	7	4	27	4	2	97	3.1	1.81
Defender	ID	L	0.444	554.7	63.0	90	24	1.1	9	8	53	13	7	73	0.8	0.24
FL20	F-L	L	0.297	701.6	88.7	98	22	1.7	10	12	53	14	7	95	1.8	1.27
FL8	F-L	L	0.445	493.7	79.3	100	82	1.0	33	23	53	18	8	100	1.7	0.58
W1360-5LB Rus	NCV	L	0.431	350.4	50.9	100	25	1.2	10	8	53	16	6	87	0.3	0.09
VC1009-1W/Y	CSU	L	0.349	848.0	81.5	78	36	1.1	12	11	60	23	9	83	0.8	0.18
A01590-76LB	ID	M	0.311	777.3	76.5	90	10	1.7	4	5	67	14	7	82	0.6	0.15
CO95172-3RU	CSU	L	0.281	620.5	75.0	100	35	0.9	16	10	67	19	11	93	2.1	0.81
MSL 794B Rus	NCV	L	0.411	509.2	71.3	100	64	1.7	39	43	67	25	14	93	4.1	2.85
A96814-65LB	ID	L	0.400	491.7	68.3	95	16	0.9	6	4	73	20	10	78	0.3	0.05
FL2	F-L	L	0.259	454.0	53.7	95	10	0.8	4	2	73	23	9	75	0.5	0.16
FL21	F-L	L	0.400	602.1	82.2	100	67	0.9	26	18	73	25	11	88	0.5	0.08
Rio Grande Russet	CSU	L	0.363	656.3	77.0	100	65	1.1	34	24	73	32	17	76	0.9	0.41
VC1002-3W/Y	CSU	M	0.417	606.0	88.2	100	82	1.6	27	28	73	19	9	78	0.3	0.03
W3162-3LB Rus	NCV	L	0.393	480.6	75.2	93	36	1.3	18	20	73	21	12	87	0.5	0.17
FL22	F-L	L	0.265	604.5	77.6	100	64	0.9	27	16	80	15	8	87	1.4	0.66
FL3	F-L	L	0.438	578.9	81.1	75	3	0.5	1	0	80	26	12	72	0.9	0.34
A00382-3LB	ID	M	0.442	410.4	78.4	98	17	1.3	7	6	87	30	15	72	0.2	0.02
A00472-20LB	ID	ML	0.348	473.4	70.5	95	8	0.9	3	2	87	14	7	66	0.2	0.04
A01259-51 LB	ID	ML	0.388	464.6	63.5	100	80	1.5	28	27	87	37	20	73	1.5	0.64

Sorted by *Pe* % area affected (ascending) - 20 lowest

Cultivar or breeding selection	Source ¹	Maturity ²	2006 field data		Tuber inoculation data											
			Relative AUDPC Early blight ³	Yield ⁴	<i>P. infestans</i> (US-8 genotype)					<i>P. e.</i> (wound infection)					<i>A. solani</i>	
					Total cwt/A	% US#1 size	Inci- dence of infec- tion (%)	% Sur- face area in- fected	Max. lesion depth (cm)	Area affected (cm ²) ⁵	Volume affected (cm ³) ⁶	Inci- dence of infec- tion (%)	% of cross section area affected ⁷	Surface area af- fected (cm ²) ⁸	Inci- dence of infec- tion (%)	Lesion area (cm ²)
Defender	ID	L	0.444	554.7	63.0	90	24	1.1	9	8	53	13	7	73	0.8	0.24
A00472-20LB	ID	ML	0.348	473.4	70.5	95	8	0.9	3	2	87	14	7	66	0.2	0.04
A01590-76LB	ID	M	0.311	777.3	76.5	90	10	1.7	4	5	67	14	7	82	0.6	0.15
FL20	F-L	L	0.297	701.6	88.7	98	22	1.7	10	12	53	14	7	95	1.8	1.27
FL22	F-L	M	0.265	604.5	77.6	100	64	0.9	27	16	80	15	8	87	1.4	0.66
W1360-5LB Rus	NCV		0.431	350.4	50.9	100	25	1.2	10	8	53	16	6	87	0.3	0.09
FL23	F-L	ML	0.344	646.6	85.7	100	52	1.4	25	24	87	18	10	92	0.8	0.26
FL8	F-L	L	0.445	493.7	79.3	100	82	1.0	33	23	53	18	8	100	1.7	0.58
CO95172-3RU	CSU		0.281	620.5	75.0	100	35	0.9	16	10	67	19	11	93	2.1	0.81
VC1002-3W/Y	CSU	M	0.417	606.0	88.2	100	82	1.6	27	28	73	19	9	78	0.3	0.03
A96814-65LB	ID	L	0.400	491.7	68.3	95	16	0.9	6	4	73	20	10	78	0.3	0.05
IND 1072	ID	L	0.254	621.5	73.5	95	13	1.1	6	6	93	21	11	88	0.4	0.03
W3162-3LB Rus	NCV		0.393	480.6	75.2	93	36	1.3	18	20	73	21	12	87	0.5	0.17
CO95051-7W	CSU		0.405	456.9	85.9	83	10	0.7	4	2	87	23	12	83	0.5	0.09
FL2	F-L		0.259	454.0	53.7	95	10	0.8	4	2	73	23	9	75	0.5	0.16
VC1009-1W/Y	CSU		0.349	848.0	81.5	78	36	1.1	12	11	60	23	9	83	0.8	0.18
AF 2412-2 Lrus	ME		0.472	390.1	62.1	100	69	0.9	22	14	87	25	12	92	2.8	2.00
FL21	F-L		0.400	602.1	82.2	100	67	0.9	26	18	73	25	11	88	0.5	0.08
MSL 794B Rus	NCV		0.411	509.2	71.3	100	64	1.7	39	43	67	25	14	93	4.1	2.85
ATX9202-3RU	TAMU	ML	0.526	539.2	80.5	98	61	1.4	23	22	87	26	14	87	0.7	0.21

Sorted by As incidence of infection (ascending) lowest 20

Cultivar or breeding selection	Source ¹	Maturity ²	2006 field data			Tuber inoculation data											
			Relative AUDPC Early blight ³	Yield ⁴	% US#1 size	<i>P. infestans</i> (US-8 genotype)					<i>P. z.</i> (wound infection)					<i>A. solani</i>	
						Inci- dence of infect- ion (%)	% Sur- face area in- fect- ed	Max. lesion depth (cm)	Area affected (cm ²) ⁵	Volume affected (cm ³) ⁶	Inci- dence of infect- ion (%)	% of cross section area affected ⁷	Surface area af- fected (cm ²) ⁸	Inci- dence of infect- ion (%)	Lesion area (cm ²)	Lesion volume (cm ³) ⁹	
ATX95490-2W	TAMU	L	0.527	1043.5	63.5	100	44	0.8	16	9	93	39	18	58	0.5	0.17	
AF 2215-1 RW	ME		0.456	506.3	85.7	98	62	1.0	23	16	93	39	14	62	0.3	0.06	
A00466-1LBC	ID	ML	0.397	569.7	81.6	83	14	0.9	5	5	100	51	21	65	0.3	0.07	
A00472-20LB	ID	ML	0.348	473.4	70.5	95	8	0.9	3	2	87	14	7	66	0.2	0.04	
AF 2211-9 RW	ME		0.474	521.8	75.1	100	67	2.1	24	35	93	29	12	67	0.7	0.23	
MX6766014	ID	L	0.307	314.6	38.5	100	36	1.2	8	7	100	52	17	68	0.8	0.37	
MW1X2609-2RU	TAMU	L	0.419	657.3	67.2	100	74	1.0	30	20	93	31	14	69	0.6	0.27	
A00382-3LB	ID	M	0.442	410.4	78.4	98	17	1.3	7	6	87	30	15	72	0.2	0.02	
A00412-3LB	ID	ML	0.365	481.1	78.6	87	79	1.9	40	49	100	53	32	72	0.2	0.03	
FL3	F-L	ML	0.438	578.9	81.1	75	3	0.5	1	0	80	26	12	72	0.9	0.34	
A01259-51 LB	ID	ML	0.388	464.6	63.5	100	80	1.5	28	27	87	37	20	73	1.5	0.64	
ATX98453-6R	TAMU	ME	0.594	350.4	67.5	100	69	1.4	22	20	93	49	17	73	1.4	0.54	
ATX9117-1RU	TAMU	ML	0.436	404.6	85.0	100	69	1.3	31	26	93	31	17	73	0.3	0.07	
Colorado Rose	GSU		0.475	704.7	71.6	92	44	1.2	19	19	93	31	14	73	0.9	0.63	
Defender	ID	L	0.444	554.7	63.0	90	24	1.1	9	8	53	13	7	73	0.8	0.24	
FL14	F-L	L	0.402	562.4	67.5	95	27	0.4	7	2	87	34	12	73	0.6	0.35	
ATX97147-4RU	TAMU	ML	0.376	481.1	66.7	97	84	1.3	39	39	100	39	22	75	2.1	0.73	
FL2	F-L		0.259	454.0	53.7	95	10	0.8	4	2	73	23	9	75	0.5	0.16	
FL4	F-L	ML	0.500	557.6	86.2	100	40	1.0	17	12	100	53	26	75	0.6	0.23	
FL9	F-L	L	0.375	695.0	82.3	100	75	1.2	28	23	100	38	16	75	0.3	0.02	

Sorted by As lesion area (ascending) lowest 20

Cultivar or breeding selection	Source ¹	Maturity ²	2006 field data			Tuber inoculation data											
			Relative AUDPC Early blight ³	Yield ⁴	% US#1 size	<i>P. infestans</i> (US-8 genotype)					<i>P. z.</i> (wound infection)					<i>A. solani</i>	
						Inci- dence of infect- ion (%)	% Sur- face area in- fect- ed	Max. lesion depth (cm)	Area affected (cm ²) ⁵	Volume affected (cm ³) ⁶	Inci- dence of infect- ion (%)	% of cross section area affected ⁷	Surface area af- fected (cm ²) ⁸	Inci- dence of infect- ion (%)	Lesion area (cm ²)	Lesion volume (cm ³) ⁹	
A00382-3LB	ID	M	0.442	410.4	78.4	98	17	1.3	7	6	87	30	15	72	0.2	0.02	
A00412-3LB	ID	ML	0.365	481.1	78.6	87	79	1.9	40	49	100	53	32	72	0.2	0.03	
A00472-20LB	ID	ML	0.348	473.4	70.5	95	8	0.9	3	2	87	14	7	66	0.2	0.04	
A00466-1LBC	ID	ML	0.397	569.7	81.6	83	14	0.9	5	5	100	51	21	65	0.3	0.07	
A96814-65LB	ID	L	0.400	491.7	68.3	95	16	0.9	6	4	73	20	10	78	0.3	0.05	
AF 2215-1 RW	ME		0.456	506.3	85.7	98	62	1.0	23	16	93	39	14	62	0.3	0.06	
ATX9117-1RU	TAMU	ML	0.436	404.6	85.0	100	69	1.3	31	26	93	31	17	73	0.3	0.07	
FL1	F-L	M	0.494	560.5	90.9	100	53	1.2	21	18	100	38	17	80	0.3	0.05	
FL9	F-L	L	0.375	695.0	82.3	100	75	1.2	28	23	100	38	16	75	0.3	0.02	
MW1X2609-4RU	TAMU	L	0.367	710.5	59.2	100	59	1.4	28	25	100	43	22	75	0.3	0.07	

Cultivar or breeding selection	Source ¹	2006 field data				Tuber inoculation data										
		Maturity ²	Relative AUDPC Early blight ³	Yield ⁴		<i>P. infestans</i> (US-8 genotype)				<i>P. e.</i> (wound infection)				<i>A. solani</i>		
				Total cwt/A	% US#1 size	Inci- dence of infection (%)	% Sur- face area in- fected	Max. lesion depth (cm)	Area affected (cm ²) ⁵	Volume affected (cm ³) ⁶	Inci- dence of infection (%)	% of cross section area affected ⁷	Surface area affected (cm ²) ⁸	Inci- dence of infection (%)	Lesion area (cm ²)	Lesion volume (cm ³) ⁹
TXA549-1RU	TAMU	L	0.429	764.7	77.4	100	64	1.3	30	25	100	52	30	77	0.3	0.04
VC1002-3W/Y	CSU	M	0.417	606.0	88.2	100	82	1.6	27	28	73	19	9	78	0.3	0.03
W1360-5LB Rus	NCV		0.431	350.4	50.9	100	25	1.2	10	8	53	16	6	87	0.3	0.09
A01375-57LB	ID	M	0.336	374.1	76.7	100	22	1.2	10	8	100	46	25	87	0.4	0.06
A93157-6LS	NCV		0.326	541.1	78.9	100	75	1.4	36	35	93	37	20	80	0.4	0.14
IND 1072	ID	L	0.254	621.5	73.5	95	13	1.1	6	6	93	21	11	88	0.4	0.03
VC0967-2R/Y	CSU	EM	0.486	822.6	81.8	93	43	1.2	17	14	93	38	14	87	0.4	0.08
A01283-36LB	ID	ML	0.479	399.8	68.0	97	21	1.2	9	7	93	40	19	93	0.5	0.07
ATTX95490-2W	TAMU	L	0.527	1043.5	63.5	100	44	0.8	16	9	93	39	18	58	0.5	0.17
CO95051-7W	CSU		0.405	456.9	85.9	83	10	0.7	4	2	87	23	12	83	0.5	0.09

Sorted by As lesion volume (ascending) lowest 20

Cultivar or breeding selection	Source ¹	2006 field data				Tuber inoculation data										
		Maturity ²	Relative AUDPC Early blight ³	Yield ⁴		<i>P. infestans</i> (US-8 genotype)				<i>P. e.</i> (wound infection)				<i>A. solani</i>		
				Total cwt/A	% US#1 size	Inci- dence of infection (%)	% Sur- face area in- fected	Max. lesion depth (cm)	Area affected (cm ²) ⁵	Volume affected (cm ³) ⁶	Inci- dence of infection (%)	% of cross section area affected ⁷	Surface area affected (cm ²) ⁸	Inci- dence of infection (%)	Lesion area (cm ²)	Lesion volume (cm ³) ⁹
A00382-3LB	ID	M	0.442	410.4	78.4	98	17	1.3	7	6	87	30	15	72	0.2	0.02
FL9	F-L	L	0.375	695.0	82.3	100	75	1.2	28	23	100	38	16	75	0.3	0.02
A00412-3LB	ID	ML	0.365	481.1	78.6	87	79	1.9	40	49	100	53	32	72	0.2	0.03
IND 1072	ID	L	0.254	621.5	73.5	95	13	1.1	6	6	93	21	11	88	0.4	0.03
VC1002-3W/Y	CSU	M	0.417	606.0	88.2	100	82	1.6	27	28	73	19	9	78	0.3	0.03
A00472-20LB	ID	ML	0.348	473.4	70.5	95	8	0.9	3	2	87	14	7	66	0.2	0.04
TXA549-1RU	TAMU	L	0.429	764.7	77.4	100	64	1.3	30	25	100	52	30	77	0.3	0.04
A96814-65LB	ID	L	0.400	491.7	68.3	95	16	0.9	6	4	73	20	10	78	0.3	0.05
FL1	F-L	M	0.494	560.5	90.9	100	53	1.2	21	18	100	38	17	80	0.3	0.05
A01375-57LB	ID	M	0.336	374.1	76.7	100	22	1.2	10	8	100	46	25	87	0.4	0.06
AF 2215-1 RWWh	ME		0.456	506.3	85.7	98	62	1.0	23	16	93	39	14	62	0.3	0.06
A00466-1LBC	ID	ML	0.397	569.7	81.6	83	14	0.9	5	5	100	51	21	65	0.3	0.07
A01283-36LB	ID	ML	0.479	399.8	68.0	97	21	1.2	9	7	93	40	19	93	0.5	0.07
ATX9117-1RU	TAMU	ML	0.436	404.6	85.0	100	69	1.3	31	26	93	31	17	73	0.3	0.07
MWTX2609-4RU	TAMU	L	0.367	710.5	59.2	100	59	1.4	28	25	100	43	22	75	0.3	0.07
FL21	F-L		0.400	602.1	82.2	100	67	0.9	26	18	73	25	11	88	0.5	0.08
VC0967-2R/Y	CSU	EM	0.486	822.6	81.8	93	43	1.2	17	14	93	38	14	87	0.4	0.08
CO95051-7W	CSU		0.405	456.9	85.9	83	10	0.7	4	2	87	23	12	83	0.5	0.09
W1360-5LB Rus	NCV		0.431	350.4	50.9	100	25	1.2	10	8	53	16	6	87	0.3	0.09
FL12	F-L	M	0.392	678.1	90.2	98	57	0.8	19	11	87	35	16	85	0.5	0.12