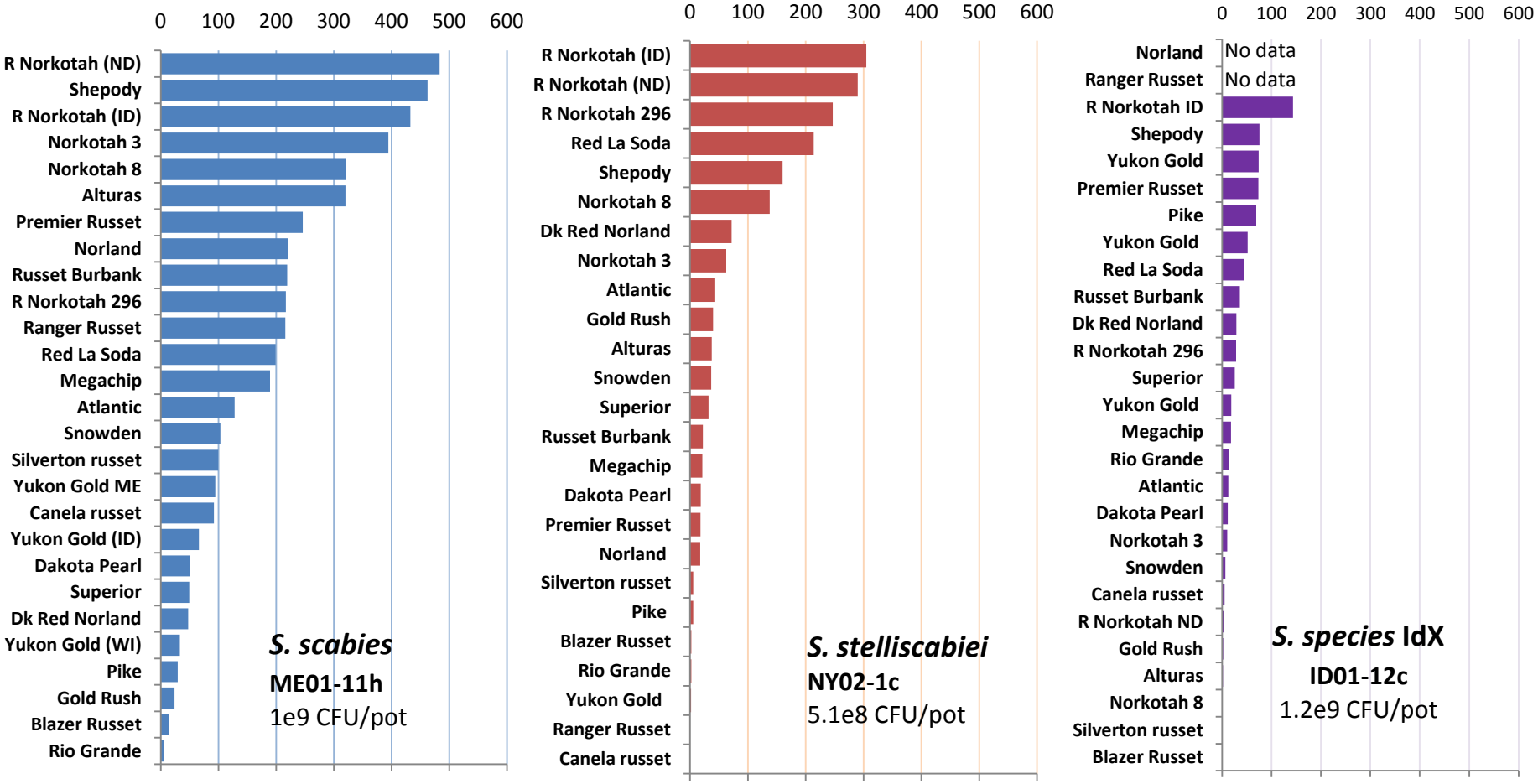
Relative Ranking of Common Scab Severity in 24 Widely-planted Cultivars and Ranking of Common Scab Severity in 118 Potato Lines

→ **Increasing disease score**



Cultivars are listed along the left side of graphs, ranked by disease severity, with most susceptible at the top and most resistant at the bottom. **Disease score** is a combination of type of lesion (surface, pits or raised lesions) and amount of surface area affected. Amount of pathogen applied was similar for all 3 *Streptomyces* strains, and is shown under isolate name on graphs. The *Streptomyces* isolates used are *S. scabies* ME01-11h, the most aggressive of the strains, isolated in northern Maine but found in many locations, particularly in the Northeast and Mid-West; *S. stelliscabiei* NY02-1c, which is intermediate in aggressiveness and is found in numerous locations primarily in the Northeast and Mid-West; and *S. species* IdX, the least aggressive of the strains, characteristic of Idaho but found in many locations. Some cultivars change in ranking in response to different *Streptomyces* strains (e.g. Alturas, Pike).

Experimental details of screening top 24 potato cultivars for common scab response in greenhouse assays in 2011.

Pathogenic *Streptomyces* isolate	Inoculum density/ pot	Mean quick score (0-6 scale)	Mean tubers scored/ rep	mean Les Type (LT) all reps	mean surface area (SA) all reps	Mean severity score LT*SA all reps	mean incidence all reps
ME01-11h	$1e^{9}$	3.16	8.7	3.9	37.3	176.3	90.3
NY02-1c	$5.1e^{8}$	1.86	7.4	2.2	21.1	71.7	79.5
ID01-12c	$1.1e^{9}$	1.64	7.5	2.2	10.2	30.4	73.1

Relative Ranking of Common Scab Severity in Potato Lines at High Disease Pressure in Greenhouse Assays

Explanation for tables:

- **TESTED POTATO LINES**: 118 potato lines were screened for common scab resistance in partially replicated greenhouse tests. There are 4 separate tables for: **Table 1** Wild diploid species and non-commercial tetraploids; **Table 2**, Red and purple commercial cultivars; **Table 3**, Russet cultivars, and **Table 4**, White and yellow-skinned smooth cultivars.
- **Experimental details for PATHOGEN inoculum** (4 columns at the left) are shown. Three pathogenic isolates of *Streptomyces scabies* were used in different experiments, ME01-11h, ME01-12h, ME01-20h. These isolates differ in aggressiveness, and different potato cultivars varied in their response to the 3 individual isolates.
- Disease pressure was very high, as indicated by proportion of tubers showing symptoms **(mean incidence** column, in yellow)
- Different pathogen inoculum densities were used in different experiments; this affects disease pressure. Inoculum density used in tests are given in column labeled *S. scabies* inoculum density, CFU/pot.
- **RESULTS** (middle columns) are presented in four ways:
    - Mean lesion type scores (pink column):
        - **Lesion type scores**
        - 1 superficial discrete
        - 2 superficial coalescent
        - 3 raised discrete
        - 4 raised coalescent
        - 5 pitted discrete
        - 6 pitted coalescent
    - Mean SA affected (%) as a percentage of **surface area** affected (pink column)
    - Mean **severity score** (lesion type x SA). Severity scores incorporate both lesion type and surface area (SA) affected. This column is in **bold-face**.
    - Mean **incidence** (% of tubers in reps with any common scab symptoms)
- **CONCLUDING COMMENTS**
    - Few cultivars show high resistance (mean severity scores 0 – 20) - they are colored **bright green**.
    - Several cultivars appear to respond differentially to different isolates, with higher resistance to one *S. scabies* strain (**purple**). Many russets are more sensitive to strain ME01-11h.
    - Many cultivars show inoculum density dependence (e.g. Ella, Cosima, Megachip)
    - Very few red/purple or yellow/white cultivars show high resistance.
- Further information useful in gauging the variability in common scab susceptibility phenotypes is presented in the columns to the right, labeled **Details for variability in severity**.

Table 1 Wild diploid species and non-commercial tetraploids

Experimental details for PATHOGEN inoculum				TESTED POTATO LINES		RESULTS				Details for variability in severity				
# reps	# tubers rated	*S scabies* strain	*S scabies* inoculum density CFU/pot	ploidy	LINE	Mean lesion type score	Mean SA affected (%)	**Mean severity score (type x SA)**	**Mean incidence** (% tubers with symptoms)	Q1	min	med	max	Q3
2	20	ME01-11h	1.0E+10	2N	*S chacoense* PI 209411 (BRU 57)	3.11	27	**117.2**	**75.0**	1.5	0.0	110.0	250.0	170.0
1	5	ME01-20h	6.00E+10			1.80	9	**19.0**	**100.0**	5.0	5.0	20.0	45.0	20.0
1	9	ME01-11h	1.20E+09	2N	*S berthaultii* PI 265858 (EBS 1846)	1.44	7	**13.8**	**77.8**	5.0	0.0	10.0	30.0	20.0
2	8	ME01-11h	1.0E+10	2N		2.18	21	**85.7**	**75.0**	0.9	0.0	52.5	250.0	175.0
1	3	ME01-11h	1.20E+09	2N	*S berthaultii* PI 473331 (HHCH 4531C)	1.67	7	**13.3**	**100.0**	5.0	5.0	5.0	30.0	17.5
1	11	ME01-11h	1.0E+10			4.18	47	**232.5**	**90.9**	200.0	0.0	300.0	350.0	312.5
1	5	ME01-11h	1.20E+09	2N	*S. bulbocastanum* PI 275199 (HAW 1596)	1.40	12	**14.0**	**100.0**	10.0	10.0	10.0	25.0	15.0
1	1	ME01-11h	1.0E+10	2N	*S. bulbocastanum* J101K6 (Helgeson 1998)	5.00	8	**40.0**	**100.0**	40.0	40.0	40.0	40.0	40.0
3	6	ME01-12h	1.0E+10			0.53	3	**3.9**	**50.0**	0.0	0.0	1.0	15.0	6.1
2	19	ME01-11h	1.0E+10	2N	*S bulbocastanum* PI243510	2.45	11	**45.9**	**78.9**	2.0	0.0	20.0	250.0	75.0
2	2	ME01-12h	8.65E+08			2.50	1	**2.5**	**50.0**	1.3	0.0	2.5	5.0	3.8
2	2	ME01-12h	8.65E+09			2.50	1	**2.5**	**50.0**	1.3	0.0	2.5	5.0	3.8
1	1	ME01-11h	1.20E+09	2N	*S microdontum* PI 595510 (HAM 175)	3.00	10	**30.0**	**100.0**	30.0	30.0	30.0	30.0	30.0
1	1	ME01-11h	1.20E+09	2N	*S. stenotomum* PI607472	0.00	0	**0.0**	**0.0**	0.0	0.0	0.0	0.0	0.0
1	2	ME01-11h	1.20E+09	4N	*S tuberosum* subsp. *andigenum* PI 281186 (WAC 584)	0.00	0	**0.0**	**0.0**	0.0	0.0	0.0	0.0	0.0
1	1	ME01-11h	1.0E+10	4N	*S tuberosum* subsp. *andigenum* PI160373	5.00	40	**200.0**	**100.0**	200.0	200.0	200.0	200.0	200.0
1	5	ME01-12h	8.65E+08			0.40	1	**1.2**	**20.0**	0.0	0.0	0.0	6.0	0.0
1	3	ME01-11h	1.20E+09	4N	*S tuberosum* PI587067 (Tollocan)	3.00	15	**45.0**	**100.0**	30.0	30.0	30.0	75.0	52.5

Table 2 **Red and Purple Cultivars**

Experimental details for				TESTED LINES		RESULTS				Details for variability in severity				
reps	# tubers rated	*S scabies* strain	*S scabies* inoculum density CFU/pot	ploidy	LINE	Mean lesion type score	Mean SA affected (%)	**Mean severity score** (type x SA)	**Mean incidence** (% tubers with symptoms)	Q1	min	med	max	Q3
2	28	ME01-11h	1.0E+10	4N	Arran Victory	3.68	40	**161.7**	**92.9**	57.5	0.0	110.0	451.3	257.5
2	11	ME01-12h	4.5E+09			2.45	13	**56.2**	**63.6**	0.0	0.0	19.0	250.0	92.5
3	4	ME01-12h	1.0E+10			3.88	45	**181.7**	**100.0**	135.6	77.5	202.5	280.0	257.5
1	4	ME01-20h	6.00E+10			0.50	1	**1.0**	**25.0**	0.0	0.0	0.0	4.0	1.0
3	11	ME01-12h	1.0E+10	4N	Blue Mac	4.40	43	**230.2**	**90.9**	150.0	0.0	200.0	540.0	327.5
1	5	ME01-20h	6.00E+10			3.20	31	**155.4**	**80.0**	2.0	0.0	25.0	500.0	250.0
1	5	ME01-20h	6.00E+10		Congo	2.80	25	**40.0**	**100.0**	40.0	20.0	40.0	50.0	50.0
3	12	ME01-12h	1.0E+10			4.87	73	**400.5**	**100.0**	293.1	20.0	545.0	600.0	600.0
2	22	ME01-11h	1.0E+10	4N	Dark Red Norland	3.81	36	**165.7**	**90.9**	75.0	0.0	190.0	350.0	237.5
3	5	ME01-12h	1.0E+10			2.71	38	**112.3**	**100.0**	60.0	10.0	75.0	180.0	168.8
2	24	ME01-11h	1.0E+10	4N	Desiree	4.30	36	**163.3**	**100.0**	93.8	1.0	150.0	500.0	250.0
3	3	ME01-12h	1.0E+10			5.14	65	**535.0**	**100.0**	502.5	495.0	510.0	600.0	555.0
1	7	ME01-20h	6.00E+10			4.71	57	**274.6**	**100.0**	98.8	50.0	300.0	500.0	437.5
2	27	ME01-11h	1.0E+10	4N	Durango Red	3.39	24	**118.3**	**70.4**	0.0	0.0	75.0	500.0	205.0
2	3	ME01-12h	1.0E+10			1.88	6	**22.5**	**100.0**	12.5	10.0	15.0	50.0	32.5
1	5	ME01-20h	6.00E+10	4N	Huckleberry	3.00	4	**11.4**	**100.0**	6.0	6.0	15.0	15.0	15.0
2	22	ME01-11h	1.0E+10	4N	Norland	4.11	44	**180.9**	**100.0**	167.5	15.0	250.0	250.0	250.0
3	6	ME01-12h	1.0E+10			3.60	39	**151.4**	**100.0**	90.0	90.0	99.3	330.0	177.1
2	7	ME01-12h	1.0E+10	4N	Nosebag	1.83	14	**37.1**	**71.4**	10.0	0.0	40.0	93.0	62.0
1	3	ME01-20h	6.00E+10			3.67	19	**92.3**	**100.0**	63.5	2.0	125.0	150.0	137.5
2	15	ME01-11h	1.0E+10	4N	Pioneer	3.82	8	**21.8**	**80.0**	20.0	0.0	57.0	375.0	131.3
2	5	ME01-12h	1.0E+10			3.54	27	**146.5**	**60.0**	0.0	0.0	95.0	412.5	110.0
2	23	ME01-11h	1.0E+10	4N	Red Kote	3.92	37	**151.6**	**91.3**	42.0	0.0	125.0	475.0	231.3
2	4	ME01-12h	1.0E+09			3.50	28	**108.5**	**100.0**	36.0	9.0	72.5	280.0	145.0
3	12	ME01-12h	1.0E+10			4.33	51	**231.2**	**100.0**	87.5	50.0	204.0	600.0	300.0
1	1	ME01-12h	1.0E+10	4N	Robijn	0.00	0	**0.0**	**0.0**	0.0	0.0	0.0	0.0	0.0
1	4	ME01-20h	6.00E+10			1.63	13	**29.4**	**75.0**	3.8	0.0	8.8	100.0	34.4
2	17	ME01-11h	1.0E+10	4N	Sangre	2.68	16	**64.1**	**76.5**	2.0	0.0	46.5	320.0	50.0
2	4	ME01-12h	1.0E+10			1.68	10	**36.8**	**50.0**	0.0	0.0	13.5	120.0	50.3
3	13	ME01-12h	1.0E+10	4N	Troll	3.80	67	**258.3**	**100.0**	160.0	45.0	240.0	400.0	340.0
3	32	ME01-12h	1.3E+10			3.57	43	**192.5**	**96.9**	69.4	0.0	120.0	600.0	242.5
2	12	ME01-11h	1.0E+10	4N	Viking	3.42	36	**170.9**	**83.3**	62.3	0.0	249.4	375.0	325.0
3	9	ME01-12h	1.0E+10			4.39	48	**241.1**	**100.0**	135.0	30.0	240.0	600.0	360.0

Table 3 Russet cultivars

Experimental details for PATHOGEN				TESTED LINES		RESULTS				Details for variability in severity				
reps	# tubers rated	*S scabies* strain	*S scabies* inoculum density CFU/pot	ploidy	LINE	Mean lesion type score	Mean SA affected (%)	**Mean severity score** (type x SA)	**Mean incidence** (% tubers with symptoms)	Q1	min	med	max	Q3
2	11	ME01-12h	8.65E+08	4N	A95109-1	0.00	0	**0.0**	**0.0**	0.0	0.0	0.0	0.0	0.0
2	5	ME01-12h	8.65E+09			0.00	0	**0.0**	**0.0**	0.0	0.0	0.0	0.0	0.0
3	13	ME01-12h	1.0E+10			0.04	4	**1.0**	**15.4**	0.0	0.0	0.0	10.0	0.0
3	11	ME01-12h	8.65E+08	4N	AF2936-2	1.85	7	**4.7**	**71.7**	0.0	0.0	1.8	32.0	6.0
2	9	ME01-12h	8.65E+09			4.44	43	**242.9**	**91.7**	80.0	0.0	120.0	600.0	300.0
2	7	ME01-12h	1.0E+10			4.10	77	**311.5**	**100.0**	305.0	120.0	380.0	600.0	425.0
2	5	ME01-12h	8.65E+08	4N	AF3000-1	0.50	3	**2.8**	**50.0**	0.0	0.0	0.0	8.0	3.0
3	12	ME01-12h	8.65E+09			1.06	4	**13.3**	**60.0**	0.0	0.0	3.8	60.0	20.0
3	6	ME01-12h	1.0E+10			1.92	6	**17.6**	**83.3**	7.0	0.0	12.5	75.0	48.8
2	6	ME01-12h	8.65E+08	4N	AOA95159-1	0.17	0	**0.3**	**16.7**	0.0	0.0	0.0	2.0	0.0
2	6	ME01-12h	8.65E+09			1.75	6	**21.0**	**50.0**	0.0	0.0	0.0	60.0	18.0
3	11	ME01-12h	1.0E+10			0.27	59	**17.1**	**81.8**	2.3	0.0	20.0	40.0	25.0
1	5	ME01-12h	8.65E+08	4N	AWN865142	1.90	22	**81.7**	**80.0**	1.5	0.0	7.0	240.0	160.0
2	7	ME01-12h	8.65E+09			1.75	17	**65.4**	**65.0**	1.5	0.0	6.0	320.0	160.0
2	2	ME01-12h	1.0E+10			2.00	75	**150.0**	**100.0**	125.0	100.0	150.0	200.0	175.0
2	17	ME01-11h	1.0E+10	4N	Bannock russet	4.11	34	**151.0**	**100.0**	50.0	15.0	210.0	400.0	285.0
3	2	ME01-12h	1.0E+10			0.00	0	**0.0**	**0.0**	0.0	0.0	0.0	0.0	0.0
2	4	ME01-11h	1.0E+10	4N	Freedom russet	0.54	9	**4.7**	**100.0**	1.8	1.3	6.0	12.5	10.6
3	4	ME01-12h	1.0E+10			0.00	0	**0.0**	**0.0**	0.0	0.0	0.0	0.0	0.0
2	23	ME01-11h	1.0E+10	4N	Goldrush	1.55	28	**46.1**	**82.6**	2.3	0.0	25.0	200.0	49.0
1	1	ME01-12h	1.0E+09			0.25	80	**20.0**	**100.0**	20.0	20.0	20.0	20.0	20.0
2	7	ME01-12h	4.5E+09			1.52	9	**16.6**	**100.0**	5.6	3.6	7.6	50.4	25.6
3	5	ME01-12h	1.0E+10			0.00	0	**0.0**	**0.0**	0.0	0.0	0.0	0.0	0.0
1	7	ME01-12h	4.5E+10			1.43	6	**10.4**	**85.7**	11.7	0.0	7.2	36.0	11.2
2	8	ME01-11h	1.0E+10	4N	Krantz	0.18	24	**6.8**	**37.5**	0.0	0.0	0.0	20.0	11.3
2	7	ME01-12h	1.0E+08			0.05	1	**0.5**	**14.3**	0.0	0.0	0.0	5.0	0.0
3	12	ME01-12h	1.0E+09			0.14	5	**4.6**	**25.0**	0.0	0.0	0.0	50.0	0.6
2	3	ME01-12h	4.5E+09			0.31	4	**2.8**	**66.7**	0.6	0.0	1.3	10.0	5.6
3	4	ME01-12h	1.0E+10			0.00	0	**0.0**	**0.0**	0.0	0.0	0.0	0.0	0.0
1	10	ME01-20h	6.00E+10			0.65	26	**13.3**	**80.0**	2.0	0.0	14.5	25.0	25.0
2	6	ME01-11h	1.0E+10	4N	Legend	1.33	74	**157.8**	**83.3**	53.8	0.0	196.0	400.0	273.0
3	2	ME01-12h	1.0E+10			0.00	0	**0.0**	**0.0**	0.0	0.0	0.0	0.0	0.0
2	15	ME01-11h	1.0E+10	4N	Lemhi Russet	2.87	39	**121.1**	**93.3**	20.0	0.0	100.0	500.0	155.0
2	2	ME01-12h	1.0E+10			0.00	0	**0.0**	**0.0**	0.0	0.0	0.0	0.0	0.0
2	17	ME01-11h	1.0E+10	4N	Millenium Russ	1.24	29	**21.0**	**76.5**	12.5	0.0	12.5	56.0	12.5
3	8	ME01-12h	1.0E+10			0.00	0	**0.0**	**0.0**	0.0	0.0	0.0	0.0	0.0
2	8	ME01-11h	1.0E+10	4N	Norgold russet	1.94	9	**21.3**	**50.0**	0.0	0.0	10.0	75.0	31.3
2	2	ME01-12h	1.0E+10			0.00	0	**0.0**	**0.0**	0.0	0.0	0.0	0.0	0.0
2	4	ME01-11h	2.70E+09	4N	Pike	1.00	13	**25.0**	**25.0**	0.0	0.0	0.0	50.0	12.5
2	26	ME01-11h	1.0E+10			4.17	44	**214.0**	**96.2**	100.0	0.0	240.0	500.0	300.0
3	7	ME01-12h	1.0E+08			0.78	12	**11.2**	**85.7**	1.5	0.0	2.5	25.0	10.0
3	16	ME01-12h	1.0E+08			0.69	11	**15.3**	**62.5**	0.0	0.0	6.5	120.0	13.1
2	8	ME01-12h	8.65E+08			0.93	5	**7.3**	**83.3**	0.9	0.0	2.5	50.0	5.0
3	5	ME01-12h	1.0E+09			0.81	4	**6.4**	**60.0**	0.0	0.0	2.0	17.5	3.0
3	12	ME01-12h	1.0E+09			0.60	4	**4.0**	**58.3**	0.0	0.0	2.3	15.0	5.0
2	4	ME01-12h	4.5E+09			1.33	5	**10.7**	**100.0**	3.0	1.0	3.6	54.0	16.2
2	3	ME01-12h	8.65E+09			0.75	31	**28.1**	**100.0**	6.3	2.5	10.0	50.0	30.0
3	11	ME01-12h	1.0E+10			0.81	11	**12.1**	**90.9**	3.5	0.0	5.0	25.0	19.4
3	17	ME01-12h	1.0E+10			0.81	20	**13.2**	**94.1**	5.0	0.0	12.5	30.0	20.0
1	3	ME01-12h	4.5E+10			2.33	15	**38.5**	**100.0**	30.8	7.6	54.0	54.0	54.0
2	6	ME01-11h	2.70E+09	4N	Premier Russet	2.25	5	**16.1**	**75.0**	0.8	0.0	6.0	75.0	24.8
2	4	ME01-12h	8.65E+08			0.88	2	**2.4**	**75.0**	0.4	0.0	2.3	5.0	4.3
2	6	ME01-12h	8.65E+09			0.50	1	**2.5**	**25.0**	0.0	0.0	0.0	10.0	0.0
2	20	ME01-11h	1.0E+10	4N	Record	2.64	27	**121.6**	**65.0**	0.0	0.0	150.0	300.0	250.0
3	6	ME01-12h	1.0E+10			5.13	88	**455.8**	**100.0**	348.8	240.0	407.5	600.0	470.0
2	8	ME01-11h	2.70E+09	4N	Rio Grande	0.00	0	**0.0**	**0.0**	0.0	0.0	0.0	0.0	0.0
2	11	ME01-12h	8.65E+08			0.45	2	**1.6**	**30.0**	0.0	0.0	0.0	9.0	1.0
2	10	ME01-12h	8.65E+09			0.15	1	**0.6**	**30.0**	0.0	0.0	0.0	2.5	0.4
3	10	ME01-12h	1.0E+08	4N	Russett Burbank	1.01	53	**64.2**	**90.0**	8.8	0.0	25.0	150.0	37.5
3	8	ME01-12h	1.0E+09			1.36	20	**41.2**	**87.5**	4.5	0.0	12.5	150.0	37.5
1	2	ME01-12h	1.0E+09			0.50	63	**31.3**	**100.0**	28.1	25.0	31.3	37.5	34.4
2	2	ME01-12h	4.5E+09			4.00	56	**225.0**	**100.0**	187.5	150.0	225.0	300.0	262.5
1	4	ME01-12h	1.0E+10			3.10	25	**57.5**	**100.0**	21.3	10.0	35.0	150.0	71.3
3	13	ME01-12h	1.0E+10			1.00	41	**37.7**	**100.0**	20.0	5.0	25.0	150.0	50.0
3	8	ME01-12h	1.0E+10			1.54	44	**76.6**	**100.0**	14.4	10.0	42.5	200.0	117.0
1	1	ME01-12h	4.5E+10			2.70	8	**20.5**	**100.0**	20.5	20.5	20.5	20.5	20.5
2	13	ME01-11h	1.0E+10	4N	Silverton Russet	3.91	38	**119.2**	**100.0**	50.0	10.0	200.0	475.0	300.0
3	9	ME01-12h	1.0E+10			0.00	0	**0.0**	**0.0**	0.0	0.0	0.0	0.0	0.0
2	7	ME01-11h	1.0E+10	4N	Summit Russet	1.72	8	**13.5**	**42.9**	0.0	0.0	5.0	77.5	17.2
3	4	ME01-12h	1.0E+10			0.00	0	**0.0**	**0.0**	0.0	0.0	0.0	0.0	0.0
3	3	ME01-12h	1.0E+10	4N	Temp	1.08	11	**11.8**	**100.0**	5.3	2.5	8.0	25.0	16.5
3	21	ME01-12h	1.3E+10			1.56	16	**36.2**	**85.7**	4.0	0.0	10.0	250.0	30.0
2	6	ME01-11h	1.0E+10	4N	W1005 rus	1.54	18	**64.8**	**50.0**	0.0	0.0	4.4	240.0	107.2
3	2	ME01-12h	1.0E+10			0.28	3	**6.3**	**100.0**	4.4	2.5	6.3	10.0	8.1
2	14	ME01-11h	1.0E+10	4N	W2128-8	3.74	36	**151.6**	**71.4**	3.8	0.0	125.0	500.0	250.0
3	6	ME01-12h	1.0E+10			0.42	4	**2.6**	**66.7**	0.1	0.0	2.8	5.0	5.0
2	19	ME01-11h	1.0E+10	4N	Wischip	3.43	32	**115.8**	**94.7**	27.5	0.0	120.0	400.0	162.5
3	6	ME01-12h	1.0E+10			2.67	4	**14.7**	**100.0**	2.8	1.0	10.0	50.0	15.0

Table 4 White and yellow-skinned smooth cultivars

Experimental details for PATHOGEN				TESTED LINES		RESULTS				Details for variability in severity				
reps	# tubers rated	S scabies strain	S scabies inoculum density CFU/pot	ploidy	LINE	Mean lesion type score	Mean SA affected (%)	Mean severity score (type x SA)	Mean incidence (% tubers with symptoms)	Q1	min	med	max	Q3
2	14	ME01-11h	1.0E+10	4N	A 75188-3	3.94	31	148.7	92.9	60.9	0.0	109.4	451.3	246.9
1	8	ME01-12h	8.65E+09			1.44	59	87.5	100.0	36.3	15.0	90.0	180.0	125.0
3	3	ME01-12h	1.0E+10			0.67	33	23.3	66.7	15.0	0.0	30.0	40.0	35.0
2	12	ME01-12h	8.65E+08	4N	A97066-42LB	3.13	26	99.3	92.9	19.5	0.0	42.5	340.0	135.0
2	15	ME01-12h	8.65E+09			2.67	37	134.9	93.8	2.5	0.0	120.0	450.0	170.0
3	16	ME01-12h	1.0E+10			2.00	75	150.0	100.0	125.0	100.0	150.0	200.0	175.0
2	5	ME01-11h	1.0E+10	4N	Ackersegen	1.03	12	14.8	80.0	8.8	0.0	10.0	60.0	10.0
1	1	ME01-12h	1.0E+09			1.00	10	10.0	100.0	10.0	10.0	10.0	10.0	10.0
3	7	ME01-12h	1.0E+10			0.67	23	12.0	85.7	1.5	0.0	2.0	32.5	3.0
3	8	ME01-12h	1.0E+10	4N	Advira	1.48	17	33.0	87.5	7.8	0.0	20.5	108.0	32.6
3	18	ME01-12h	1.3E+10			2.07	11	28.9	100.0	5.8	2.0	26.6	100.0	34.4
3	5	ME01-12h	1.0E+10	4N	AF 2497-2	2.68	32	116.3	80.0	30.0	0.0	30.0	280.0	77.5
1	2	ME01-11h	1.0E+10	4N	Allegany	3.00	23	102.5	100.0	53.8	5.0	102.5	200.0	151.3
2	2	ME01-12h	1.0E+10			0.75	8	4.3	100.0	2.6	1.0	4.3	7.5	5.9
3	6	ME01-12h	1.0E+10	4N	Alpha	3.42	12	54.3	100.0	13.3	1.0	56.9	125.0	79.7
3	10	ME01-12h	1.3E+10			2.38	25	80.2	90.0	6.3	0.0	51.3	250.0	143.8
1	12	ME01-11h	1.20E+09	4N	Atlantic	3.63	75	299.0	100.0	76.9	50.0	325.0	500.0	500.0
2	15	ME01-11h	1.0E+10			3.53	30	134.1	80.0	15.0	0.0	80.0	350.0	275.0
3	4	ME01-12h	1.0E+10			2.97	22	25.8	100.0	25.0	25.0	25.0	30.0	26.3
3	9	ME01-12h	1.3E+10			3.81	20	86.8	100.0	25.0	6.3	75.0	225.0	125.0
2	5	ME01-12h	1.0E+09			2.13	26	67.7	100.0	6.0	2.5	25.0	275.0	30.0
2	15	ME01-12h	4.5E+09	4N	Banana	3.01	13	57.9	66.7	0.0	0.0	25.0	300.0	63.8
3	9	ME01-12h	1.0E+10			2.22	4	16.7	66.7	0.0	0.0	3.0	100.0	10.0
1	10	ME01-20h	6.00E+10			0.73	2	2.1	50.0	0.0	0.0	0.6	10.0	2.0
3	9	ME01-12h	1.0E+10	4N	Bzura	2.37	36	135.0	88.9	20.0	0.0	168.0	320.0	200.0
1	7	ME01-20h	6.00E+10			3.43	41	166.4	100.0	52.5	10.0	150.0	500.0	200.0
2	28	ME01-11h	1.0E+10	4N	Calwhite	4.47	47	212.7	93.5	140.6	0.0	205.0	400.0	300.0
2	3	ME01-12h	1.0E+09			1.50	30	75.0	100.0	52.5	5.0	100.0	120.0	110.0
3	5	ME01-12h	1.0E+10			3.47	58	217.7	100.0	150.0	20.0	216.0	360.0	280.0
2	12	ME01-11h	1.0E+10	4N	Cherokee	3.06	25	107.6	83.3	7.3	0.0	59.0	427.5	175.0
3	10	ME01-12h	1.0E+10			1.66	15	39.7	70.0	0.6	0.0	11.5	210.0	28.8
2	21	ME01-11h	2.70E+09	4N	Chippewa	4.13	36	181.6	86.1	40.0	0.0	200.0	480.0	300.0
2	22	ME01-11h	1.0E+10			2.96	18	75.4	86.4	8.1	0.0	40.0	300.0	125.0
3	25	ME01-12h	1.0E+08			3.32	29	121.6	100.0	20.0	2.0	80.0	350.0	200.0
3	22	ME01-12h	1.0E+08			2.35	7	22.7	52.4	0.0	0.0	5.0	175.0	24.0
2	17	ME01-12h	8.65E+08			3.21	13	73.2	73.5	0.0	0.0	10.0	450.0	40.0
3	28	ME01-12h	1.0E+09			4.16	47	227.7	85.7	48.1	0.0	231.3	600.0	375.0
2	12	ME01-12h	1.0E+09			4.80	40	195.7	100.0	75.0	15.0	162.5	375.0	228.8
2	19	ME01-12h	4.5E+09			5.23	70	373.8	100.0	300.0	90.0	375.0	600.0	450.0
2	44	ME01-12h	8.65E+09			3.68	31	159.0	100.0	33.8	1.0	120.0	480.0	240.0
3	10	ME01-12h	1.0E+10			4.40	48	279.6	100.0	182.5	75.0	387.5	600.0	457.5
3	37	ME01-12h	1.0E+10			4.82	68	334.6	100.0	175.0	30.0	400.0	500.0	500.0
3	22	ME01-12h	1.0E+10			4.39	49	217.6	100.0	150.0	20.0	190.0	500.0	247.5
3	37	ME01-12h	1.0E+10			4.82	68	334.6	100.0	175.0	30.0	400.0	500.0	500.0
3	33	ME01-12h	1.3E+10			4.30	50	257.1	100.0	150.0	2.5	240.0	600.0	375.0
1	7	ME01-12h	4.5E+10			4.86	48	237.4	100.0	375.0	72.0	187.5	375.0	375.0
2	13	ME01-12h	1.0E+10	4N	Coastal Chip	3.34	53	269.3	92.3	80.0	0.0	300.0	480.0	332.5
3	12	ME01-12h	1.3E+10			2.54	45	166.1	91.7	39.7	0.0	63.8	500.0	312.9
3	8	ME01-12h	1.0E+10	4N	Cobbler	3.36	31	141.7	87.5	17.3	0.0	122.5	450.0	196.9
2	7	ME01-12h	1.0E+10	4N	Corine	3.89	42	193.2	100.0	75.0	20.0	248.0	413.0	304.0
3	32	ME01-12h	1.3E+10			4.61	41	231.6	96.9	53.0	0.0	200.0	600.0	402.5
2	18	ME01-12h	8.65E+08	4N	Cosima	1.81	8	25.3	71.3	0.1	0.0	5.5	125.0	36.3
2	20	ME01-12h	8.65E+09			2.17	20	77.0	83.3	1.4	0.0	7.5	300.0	145.0
3	12	ME01-12h	1.0E+10			3.23	49	194.9	100.0	71.3	30.0	240.0	332.5	266.9
2	18	ME01-11h	1.0E+10	4N	Dakota Pearl	3.16	18	80.4	72.2	0.8	0.0	37.5	285.0	131.3
2	3	ME01-12h	1.0E+09			0.75	1	0.7	66.7	0.5	0.0	1.0	1.0	1.0
3	10	ME01-12h	1.0E+10			0.51	3	3.1	50.0	0.0	0.0	0.5	15.0	2.8
3	7	ME01-12h	1.0E+10	4N	Daku	3.57	41	192.7	100.0	157.5	45.0	200.0	350.0	210.8
1	2	ME01-20h	6.00E+10			3.00	18	52.5	100.0	41.3	30.0	52.5	75.0	63.8
3	3	ME01-12h	1.0E+10	4N	Eden	4.49	62	369.2	100.0	253.8	150.0	357.5	600.0	478.8
3	25	ME01-12h	1.3E+10			2.97	30	155.0	100.0	27.0	6.0	95.0	600.0	217.0
1	3	ME01-12h	1.0E+09	4N	Elba	1.67	17	83.3	33.3	0.0	0.0	0.0	250.0	125.0
2	5	ME01-12h	1.0E+10			2.68	21	90.8	100.0	54.0	17.5	100.0	187.5	150.0
1	14	ME01-12h	8.65E+08	4N	Ella	0.00	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	12	ME01-12h	8.65E+09			3.06	26	102.4	92.9	4.5	0.0	40.0	300.0	181.0
3	19	ME01-12h	1.0E+10			2.42	47	143.3	100.0	17.5	1.0	120.0	467.5	184.5
1	11	ME01-11h	1.20E+09	4N	Garnet	3.55	20	85.2	100.0	22.5	10.0	40.0	250.0	119.0
3	6	ME01-12h	1.0E+10			1.44	10	27.8	66.7	0.8	0.0	24.0	90.0	45.0
3	12	ME01-12h	1.0E+08	4N	Green Mountain	3.77	31	135.3	91.7	56.3	0.0	150.0	300.0	181.3
3	7	ME01-12h	1.0E+09			4.58	31	145.0	100.0	47.5	45.0	125.0	325.0	200.0
1	2	ME01-12h	4.5E+09			3.50	50	187.5	100.0	131.3	75.0	187.5	300.0	243.8
3	5	ME01-12h	1.0E+10			2.75	20	79.8	100.0	37.5	2.0	37.5	240.0	160.0
3	6	ME01-12h	1.0E+10			2.53	27	104.2	66.7	7.5	0.0	75.0	360.0	170.6
3	21	ME01-12h	1.0E+10			2.87	20	82.2	81.0	5.0	0.0	35.0	400.0	93.8
2	14	ME01-12h	1.3E+10			3.50	54	223.0	92.9	52.5	0.0	274.3	500.0	362.5
1	3	ME01-12h	4.5E+10			4.17	53	245.1	100.0	161.4	22.8	300.0	412.5	356.3
2	26	ME01-11h	1.0E+10	4N	Jacqueline Lee	4.47	52	249.8	100.0	112.5	3.0	175.0	500.0	493.8
2	7	ME01-12h	4.5E+09			3.89	34	161.5	100.0	28.5	3.6	86.4	375.0	375.0
3	8	ME01-12h	1.0E+10			3.61	26	166.5	87.5	71.3	0.0	157.5	420.0	193.1
1	5	ME01-12h	4.5E+10			4.20	29	133.7	100.0	38.0	15.2	90.0	375.0	150.4
1	13	ME01-11h	1.20E+09	4N	Katahdin	4.69	61	280.0	84.6	125.0	0.0	250.0	500.0	500.0
2	11	ME01-11h	1.0E+10			4.58	30	147.5	90.9	50.0	0.0	150.0	300.0	250.0
3	9	ME01-12h	1.0E+08			4.06	47	203.9	100.0	80.0	40.0	200.0	500.0	300.0
2	9	ME01-12h	1.0E+08			1.96	6	19.5	77.8	2.0	0.0	5.0	90.0	7.5
2	4	ME01-12h	1.0E+09			4.33	55	271.3	100.0	225.8	3.0	312.5	350.0	331.3
3	14	ME01-12h	1.0E+09			3.23	18	81.5	71.4	2.5	0.0	40.0	250.0	142.5
2	9	ME01-12h	4.5E+09			5.50	52	300.2	100.0	150.4	38.0	450.0	450.0	450.0
2	4	ME01-12h	1.0E+10			3.69	8	32.9	100.0	14.8	3.0	26.9	75.0	45.0
3	11	ME01-12h	1.0E+10			3.55	45	175.7	100.0	52.5	15.0	106.3	325.0	285.1
2	10	ME01-12h	1.0E+10			3.55	51	196.5	90.0	96.3	0.0	180.0	350.0	236.3
3	10	ME01-12h	1.3E+10			3.58	38	222.7	100.0	96.9	27.0	170.6	480.0	378.8
1	3	ME01-12h	4.5E+10			5.00	63	312.5	100.0	243.8	187.5	300.0	450.0	375.0
1	9	ME01-11h	1.20E+09	4N	Kennebec	3.78	49	230.6	100.0	30.0	5.0	200.0	500.0	500.0
2	7	ME01-11h	1.0E+10			2.21	9	31.1	85.7	3.0	0.0	8.0	200.0	44.5
3	7	ME01-12h	1.0E+10			4.07	23	105.9	100.0	15.5	2.0	84.0	336.0	225.0
2	4	ME01-12h	1.3E+10			4.05	48	218.7	75.0	139.5	0.0	188.0	312.0	220.5
1	14	ME01-11h	1.0E+10	4N	Keuka Gold	3.86	69	284.9	100.0	105.0	30.0	337.5	500.0	375.0
3	7	ME01-12h	1.0E+10			0.79	15	7.1	100.0	2.3	2.0	5.0	25.0	9.4
1	2	ME01-20h	6.00E+10			3.00	15	45.0	100.0	30.0	15.0	45.0	75.0	60.0
2	27	ME01-11h	1.0E+10	4N	Kifli	4.02	36	160.7	92.6	112.5	0.0	175.0	332.5	208.5
3	8	ME01-12h	1.0E+10			2.04	6	22.9	75.0	2.3	0.0	10.5	75.0	50.6
1	14	ME01-20h	6.00E+10			2.34	9	32.9	85.7	2.5	0.0	3.8	250.0	40.0
2	8	ME01-11h	1.0E+10	4N	Liberator	2.64	9	27.4	100.0	9.6	3.0	21.5	75.0	48.8
2	11	ME01-12h	8.65E+08			0.98	3	3.8	53.6	0.0	0.0	1.0	14.0	4.5
1	3	ME01-12h	1.0E+09			0.33	33	16.7	66.7	12.5	0.0	25.0	25.0	25.0
2	2	ME01-12h	4.5E+09			2.50	19	94.0	50.0	47.0	0.0	94.0	188.0	141.0
2	8	ME01-12h	8.65E+09			0.06	0	0.1	12.5	0.0	0.0	0.0	0.5	0.0
2	4	ME01-12h	1.0E+10			0.25	1	0.8	25.0	0.0	0.0	0.0	3.0	0.8
2	3	ME01-12h	1.0E+10			1.25	43	28.3	100.0	16.5	3.0	30.0	40.0	35.0
1	10	ME01-12h	4.5E+10			1.60	13	31.7	90.0	3.6	0.0	10.8	112.8	32.7
1	2	ME01-12h	1.0E+10	4N	Mainestay	4.78	35	167.0	100.0	167.0	144.0	167.0	190.0	178.5
3	8	ME01-12h	1.3E+10			2.83	15	46.0	100.0	10.0	10.0	32.5	157.3	57.5
3	10	ME01-12h	1.0E+10	4N	Maritta	1.15	9	13.7	60.0	0.0	0.0	8.3	40.0	24.0
3	10	ME01-12h	1.3E+10			2.13	2	7.0	50.0	0.0	0.0	1.5	18.0	5.0
2	7	ME01-11h	1.0E+10	4N	Megachip	4.83	25	68.0	71.4	15.0	0.0	50.0	350.0	87.5
1	6	ME01-12h	8.65E+08			0.33	2	1.2	50.0	0.0	0.0	1.0	2.5	2.4
2	18	ME01-12h	8.65E+09			1.55	8	29.0	51.9	0.0	0.0	0.0	150.0	40.0
3	6	ME01-12h	1.0E+10			1.90	29	81.0	100.0	17.6	2.0	66.8	180.0	98.3
1	1	ME01-11h	1.0E+10	4N	Menominee	2.00	50	100.0	100.0	100.0	100.0	100.0	100.0	100.0
2	6	ME01-12h	1.0E+09			4.81	68	308.8	100.0	214.4	150.0	275.0	500.0	412.5
3	10	ME01-12h	1.0E+10			4.03	54	249.7	100.0	73.1	20.0	165.0	570.0	335.1
2	25	ME01-11h	1.0E+10	4N	MSG 227-2	3.23	40	140.9	92.0	75.0	0.0	120.0	320.0	200.0
2	7	ME01-12h	4.5E+09			1.75	16	32.1	85.7	5.3	0.0	36.0	150.0	59.7
3	4	ME01-12h	1.0E+10			1.59	48	87.3	100.0	38.8	5.0	85.0	224.0	146.0
1	3	ME01-12h	4.5E+10			2.17	38	81.5	100.0	79.9	75.2	75.2	94.0	84.6
2	10	ME01-11h	1.0E+10	4N	Myott's Ashleaf	4.50	37	182.5	90.0	75.0	0.0	225.0	350.0	250.0
2	6	ME01-12h	4.5E+09			2.72	13	29.8	83.3	13.5	0.0	27.0	75.0	37.5
3	6	ME01-12h	1.0E+10			2.48	12	49.5	83.3	1.3	0.0	26.0	166.3	70.6
2	15	ME01-11h	1.0E+10	4N	ND 58226-7	3.82	48	197.2	100.0	72.5	30.0	125.0	500.0	275.0
2	2	ME01-12h	1.0E+09			2.00	15	40.0	100.0	22.5	5.0	40.0	75.0	57.5
2	3	ME01-12h	1.0E+10			3.63	30	115.6	100.0	54.4	15.0	93.8	260.0	176.9
2	6	ME01-11h	1.0E+10	4N	Norchip	4.28	51	251.3	83.3	61.3	0.0	197.5	450.0	324.4
2	4	ME01-12h	1.0E+09			1.21	12	45.3	100.0	4.4	2.5	5.0	168.8	45.9
3	11	ME01-12h	1.0E+10			1.50	5	14.5	36.4	0.0	0.0	0.0	50.0	6.0
1	2	ME01-11h	1.0E+10	4N	Nordak	4.88	33	156.3	100.0	115.6	75.0	156.3	237.5	196.9
2	9	ME01-12h	1.0E+09			3.88	61	285.0	100.0	220.0	10.0	335.0	400.0	400.0
3	9	ME01-12h	1.0E+10			4.53	42	198.8	100.0	105.0	30.0	175.0	350.0	285.0
2	8	ME01-12h	1.0E+09	4N	Norgleam	3.38	32	93.4	87.5	10.3	0.0	45.0	450.0	92.5
3	27	ME01-12h	1.0E+10			4.04	51	269.0	85.7	**67.5**	0.0	**288.0**	600.0	**385.0**
2	9	ME01-12h	4.5E+09	4N	Norwis	3.54	44	172.0	100.0	54.0	7.6	188.0	300.0	281.3
1	4	ME01-12h	4.5E+10			4.88	47	220.3	100.0	187.5	187.5	196.9	300.0	229.7
2	7	ME01-12h	8.65E+08	4N	Waneta (NY 138)	2.21	3	7.0	75.0	0.5	0.0	2.5	20.0	12.0
2	6	ME01-12h	8.65E+09			1.00	4	4.1	100.0	2.3	0.5	3.3	15.0	4.6
3	6	ME01-12h	1.0E+10			0.64	1	2.1	33.3	0.0	0.0	0.0	5.0	1.9
2	7	ME01-12h	8.65E+08	4N	Lamoka (NY 139)	2.90	7	26.3	100.0	4.0	2.0	15.0	160.0	24.0
2	9	ME01-12h	8.65E+09			2.48	9	32.2	87.5	3.0	0.0	30.0	150.0	45.0
3	10	ME01-12h	1.0E+10			2.14	10	8.5	70.0	0.3	0.0	2.0	41.5	9.8
3	10	ME01-12h	1.0E+10	4N	Ogonek	4.08	65	329.3	100.0	171.3	40.0	344.4	600.0	415.6
3	20	ME01-12h	1.3E+10			2.41	35	138.3	100.0	48.0	10.0	124.3	403.8	188.5
2	13	ME01-11h	1.0E+10	4N	Onaway	3.86	37	167.6	92.3	50.0	0.0	200.0	300.0	250.0
2	2	ME01-12h	1.0E+09			4.00	50	225.0	100.0	150.0	75.0	225.0	375.0	300.0
3	12	ME01-12h	1.0E+10			1.09	6	13.8	75.0	1.5	0.0	2.0	124.0	6.3
3	5	ME01-12h	1.0E+08	4N	Ontario	0.58	4	3.5	80.0	1.0	0.0	5.0	10.0	5.0
2	2	ME01-12h	1.0E+08			0.25	3	1.3	50.0	0.6	0.0	1.3	2.5	1.9
3	5	ME01-12h	1.0E+08			0.58	4	3.5	80.0	1.0	0.0	5.0	10.0	5.0
3	11	ME01-12h	1.0E+09			1.57	6	9.8	100.0	3.0	2.5	9.0	26.3	12.5
3	9	ME01-12h	1.0E+09			1.07	7	9.7	77.8	2.0	0.0	2.0	40.0	20.0
2	1	ME01-12h	4.5E+09			1.00	8	7.6	100.0	7.6	7.6	7.6	7.6	7.6
3	3	ME01-12h	1.0E+10			1.58	3	5.1	100.0	3.5	2.0	5.0	8.3	6.6
3	8	ME01-12h	1.0E+10			1.00	11	21.1	75.0	3.8	0.0	5.0	140.0	11.3
2	2	ME01-12h	1.0E+10			2.75	6	18.8	100.0	10.6	2.5	18.8	35.0	26.9
1	4	ME01-20h	6.00E+10			1.56	7	9.1	100.0	3.6	2.5	7.0	20.0	12.5
3	7	ME01-12h	1.0E+10	4N	Ozette	1.47	6	33.8	42.9	0.0	0.0	0.0	100.0	40.0
1	6	ME01-20h	6.00E+10			0.79	9	4.5	100.0	1.3	1.3	3.1	12.5	5.8
2	18	ME01-12h	8.65E+08	4N	Pentland Dell	0.84	1	1.9	57.5	0.0	0.0	0.8	15.0	1.8
1	7	ME01-12h	8.65E+09			1.21	2	2.5	100.0	1.3	0.5	2.0	6.0	3.3
3	6	ME01-12h	1.0E+10			4.54	57	273.3	100.0	161.6	60.0	170.6	412.5	332.5
2	12	ME01-12h	8.65E+08	4N	Pentland SC	1.01	1	3.1	38.6	0.0	0.0	0.0	15.0	2.3
1	5	ME01-12h	8.65E+09			3.80	21	110.0	80.0	30.0	0.0	40.0	300.0	180.0
3	5	ME01-12h	1.0E+10			3.72	43	190.9	80.0	100.0	0.0	121.5	312.0	300.0
1	6	ME01-11h	1.20E+09	4N	S tuberosum PI383470 (India Clone 1033)	2.25	7	14.7	100.0	8.3	2.0	17.5	25.0	20.0
1	4	ME01-11h	1.0E+10			4.50	23	101.3	100.0	41.3	15.0	62.5	300.0	131.3
3	11	ME01-12h	1.0E+10			2.33	29	109.3	90.9	5.0	0.0	54.0	450.0	163.6
3	10	ME01-12h	1.0E+10	4N	Pito	4.59	26	123.9	100.0	35.0	15.5	62.5	300.0	150.0
3	29	ME01-12h	1.3E+10			2.98	16	96.6	93.1	8.1	0.0	50.0	384.0	125.0
2	27	ME01-11h	1.0E+10	4N	Ratte	3.85	30	122.4	88.9	15.0	0.0	50.0	475.0	187.5
2	9	ME01-12h	4.5E+09			2.33	5	14.8	55.6	0.0	0.0	7.0	30.0	25.0
3	14	ME01-12h	1.0E+10			1.94	8	27.0	71.4	1.3	0.0	12.5	142.5	30.0
1	12	ME01-20h	6.00E+10			1.04	6	23.7	50.0	0.0	0.0	0.6	250.0	2.8
3	11	ME01-12h	1.0E+10	4N	Royal Kidney	3.31	43	165.0	100.0	125.0	10.0	186.0	600.0	286.5
1	8	ME01-20h	6.00E+10			3.50	7	30.0	100.0	9.0	4.0	22.5	75.0	50.0
2	15	ME01-11h	1.0E+10	4N	Sebago	3.64	35	170.1	80.0	12.5	0.0	175.0	400.0	275.0
3	5	ME01-12h	1.0E+10			4.04	53	215.4	100.0	112.5	105.0	210.0	385.0	270.0
1	8	ME01-11h	1.0E+10	4N	Shepody	3.63	34	135.6	87.5	40.6	0.0	90.0	400.0	182.0
3	7	ME01-12h	1.0E+10			4.35	42	216.9	85.7	61.3	0.0	220.0	480.0	311.3
3	9	ME01-12h	1.0E+10	4N	Sheriff	2.81	31	122.2	88.9	10.0	0.0	96.3	285.0	260.0
3	28	ME01-12h	1.3E+10			1.77	13	45.4	85.7	3.0	0.0	20.0	304.0	44.0
2	17	ME01-11h	1.0E+10	4N	Siberian	4.57	40	197.9	88.2	75.0	0.0	250.0	350.0	300.0
1	9	ME01-20h	6.00E+10			2.78	9	37.9	88.9	6.0	0.0	10.0	250.0	20.0
2	7	ME01-11h	2.70E+09	4N	Snowden	2.88	6	22.9	87.5	3.0	0.0	15.0	80.0	23.0
2	10	ME01-12h	8.65E+08			0.13	1	0.7	25.0	0.0	0.0	0.0	5.0	0.0
1	2	ME01-12h	8.65E+09			4.00	10	45.0	100.0	30.0	15.0	45.0	75.0	60.0
3	11	ME01-12h	1.0E+10			2.73	19	49.5	90.9	15.0	0.0	20.0	148.8	50.0
2	3	ME01-12h	1.3E+10			3.33	78	316.3	100.0	292.5	285.0	300.0	380.0	340.0
1	7	ME01-11h	1.20E+09	4N	Superior	4.43	46	209.3	100.0	50.0	15.0	200.0	500.0	325.0
2	7	ME01-11h	1.0E+10			2.70	60	179.1	85.7	17.5	0.0	25.0	279.0	207.5
3	7	ME01-12h	1.0E+08			1.00	15	14.0	85.7	3.0	0.0	10.0	45.0	22.5
2	2	ME01-12h	1.0E+08			0.25	38	18.8	50.0	9.4	0.0	18.8	37.5	28.1
3	7	ME01-12h	1.0E+08			1.00	15	14.0	85.7	3.0	0.0	10.0	45.0	22.5
2	9	ME01-12h	8.65E+08			2.21	2	6.9	58.3	0.0	0.0	0.0	25.0	6.0
3	13	ME01-12h	1.0E+09			0.53	20	6.4	53.8	0.0	0.0	2.0	30.0	9.0
3	11	ME01-12h	1.0E+09			1.22	7	8.8	90.9	4.0	0.0	5.0	26.3	13.8
2	7	ME01-12h	4.5E+09			1.21	3	5.7	71.4	1.8	0.0	3.6	15.2	6.8
2	5	ME01-12h	4.5E+09			1.58	17	34.6	80.0	5.0	0.0	30.0	80.0	60.0
2	12	ME01-12h	8.65E+09			1.71	4	15.9	91.7	0.3	0.0	1.0	100.0	4.5
3	4	ME01-12h	1.0E+10			1.75	3	10.0	50.0	0.0	0.0	2.5	25.0	10.0
3	7	ME01-12h	1.0E+10			1.52	18	24.6	100.0	6.5	2.5	9.0	60.0	28.1
3	10	ME01-12h	1.0E+10			1.27	10	10.8	100.0	2.3	1.0	7.8	30.0	19.5
3	17	ME01-12h	1.3E+10			1.29	15	19.5	76.5	2.5	0.0	15.0	75.0	24.0
1	5	ME01-12h	4.5E+10			2.42	18	47.3	100.0	22.8	7.6	36.0	116.3	54.0
1	2	ME01-12h	4.5E+09	4N	S. tuberosum PI 203900 LB differential R4	0.00	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1	5	ME01-11h	1.0E+10			4.05	49	223.8	100.0	200.0	10.0	300.0	308.8	300.0
2	10	ME01-11h	1.0E+10	4N	S. tuberosum PI 245317	3.10	8	34.3	80.0	5.3	0.0	20.0	125.0	47.5
2	14	ME01-12h	8.65E+08			0.57	1	2.8	42.9	0.0	0.0	0.0	30.0	0.9
2	25	ME01-12h	8.65E+09			0.13	0	0.6	6.3	0.0	0.0	0.0	10.0	0.0
3	10	ME01-12h	1.0E+10	4N	Teena	1.53	8	21.2	70.0	0.5	0.0	3.0	135.0	12.5
2	15	ME01-12h	1.3E+10			2.81	6	23.9	66.7	0.0	0.0	15.0	75.0	31.0
3	8	ME01-12h	1.0E+10	4N	Torridon	4.54	60	310.2	100.0	193.6	2.0	376.3	510.0	469.4
2	11	ME01-12h	1.3E+10			3.87	44	176.5	100.0	38.5	2.0	96.0	475.0	247.4
2	11	ME01-11h	1.0E+10	4N	USDA 96-56	3.72	47	214.3	100.0	160.0	5.0	250.0	500.0	310.0
2	8	ME01-12h	1.0E+09			0.67	7	7.5	75.0	2.3	0.0	6.0	20.0	11.3
3	5	ME01-12h	1.0E+10			3.33	11	38.3	80.0	10.0	0.0	15.0	120.0	75.0
3	18	ME01-12h	1.3E+10			3.43	21	97.3	94.4	11.3	0.0	55.0	300.0	140.0
1	12	ME01-12h	8.65E+08	4N	Varmus	0.67	1	1.4	8.3	0.0	0.0	0.0	15.0	0.5
3	8	ME01-12h	1.0E+10			5.13	54	280.3	100.0	180.8	150.0	321.0	480.0	364.4
2	14	ME01-11h	1.0E+10	4N	Wauseon	2.93	32	31.9	100.0	18.1	2.0	57.5	380.0	222.5
2	2	ME01-12h	1.0E+09			0.50	2	1.5	50.0	0.8	0.0	1.5	3.0	2.3
3	7	ME01-12h	1.0E+10			0.67	8	6.3	100.0	2.5	2.0	3.0	30.0	10.0
1	19	ME01-11h	1.20E+09	4N	Yukon Gold	3.63	42	241.1	100.0	35.0	5.0	250.0	500.0	475.0
2	17	ME01-11h	1.0E+10			3.74	26	101.7	100.0	50.0	5.0	75.0	250.0	150.0
3	6	ME01-12h	1.0E+10			3.76	24	94.4	100.0	23.8	3.0	53.1	240.0	98.4
1	9	ME01-11h	1.0E+10	4N	Hindenburg	2.95	27	93.6	100.0	12.0	2.5	62.0	240.0	200.0
3	5	ME01-12h	1.0E+10			0.17	0	0.2	20.0	0.0	0.0	0.0	1.0	0.0