2001 Uniform Regional Scab Nursery for Spring Wheat Parents

Coordinators: David F. Garvin and Robert W. Busch (Retired).
USDA-ARS, Plant Science Research Unit
411 Borlaug Hall, University of Minnesota
1991 Upper Buford Circle, St. Paul, MN 55108

The Uniform Regional Scab Nursery was grown for the seventh year in 2001. Seven locations were included in the nursery, including Ames, Iowa, Brookings, South Dakota, St. Paul and Crookston, MN, Prosper and Langdon, ND, and Glenlea, Manitoba, Canada. Data were obtained from all locations.

A total of 45 entries were included in the nursery in 2001. This included the resistant checks 2375, BacUp, and ND2710, and the susceptible checks Wheaton and Oslo. The other 40 entries were contributed by the University of Minnesota, North Dakota State University, South Dakota State University, Agriculture and Agri-Food Canada, Western Plant Breeders, and Agripro. Six of these 40 entries were durums, and are denoted as genotypes beginning with a "D" in the entry list. Five other genotypes from South Dakota (PI entries) represent possible new sources of scab resistance were included in the nursery.

The field data collected at each location varied, but a core set of traits evaluated on entries at all locations included incidence of scab (expressed as % infected heads), disease severity (expressed as % of diseased florets on infected heads), and disease index (incidence x severity/100). Additionally, several locations provided post-harvest evaluation data that included visual scabby kernel ratings (VSK, = tombstone), expressed as % kernels in a grain sample (5 locations), and grain DON concentration, expressed as ppm in a grain sample (4 locations). Other various data were gathered at the different locations, and are presented in the individual location tables. A final table reporting overall entry means for parameters across locations is included at the end of the report.

Disease pressure varied greatly from location to location. Extremely light disease pressure was observed at the Ames location, and as such these data were excluded from calculations of overall means. At the other locations, mean disease incidence ranged from a low of 58.5% for Langdon to a high of 99.9% at Brookings. Mean location severities ranged from 8% at Langdon to 63.3% at Brookings, while mean disease index ranged from 6% at Langdon, to 63.3% at Brookings.

Mean VSK ranged from 15.2% at the St. Paul location, to 63% at Brookings. It should be noted that the nursery locations in Minnesota do not record VSK ratings if they exceed 50%, and thus the VSK means at these locations will be biased towards values lower than the true means. Mean location DON concentrations ranged from 4.7 ppm at Prosper, to 11.2 ppm at Crookston.

Correlation coefficients were calculated between disease index, VSK, and DON, using overall means calculated from the three locations at which each of these parameters was measured (St. Paul, Crookston, and Prosper). The correlations among these parameters were in each instance positive and significant. The correlation between disease index and VSK was 0.79, while disease index and DON exhibited a correlation of 0.66. Lastly, VSK and DON also exhibited a significant correlation (0.76).

Cooperators for 2001 Uniform Regional Scab Nursery for Spring Wheat Parents

Gary Munkvold
Iowa State University

Richard Frohberg and Robert Stack
North Dakota State University

Yue Jin
South Dakota State University

Jim Anderson and Ruth Dill-Macky
University of Minnesota

Jeannie Gilbert and Gavin Humphreys
Agri-Food Canada, Winnipeg, Manitoba

Table 1. Pedigree and origin of entries in the 2001 Uniform Regional Scab Nursery for Spring Wheat Parents

Entry no.	Entry name	Pedigree or resistance source	Origin
1	2375	CHECK	ND
2	WHEATON	CHECK	MN
3	BACUP	CHECK	MN
4	OSLO	CHECK	AGRIP
5	ND2710	CHECK	ND
6	SD3599	SD8089/SD3374	SD
7	SD3624	SD3247/SD3164	SD
8	SD3650	Sumai3/Dalen/3/SDX17150//SD3005/Guard/4/SD3290	SD
9	SD3657	Russ//Sumai3/Dalen/3/SD3299	SD
10	SD3666	Russ//Sumai3/Dalen/3/SD3299	SD
11	ND2959	ND674//ND2710/ND688	ND
12	ND2978	ND2831//Parshall/ND706	ND
13	ND3035	81-60/N.Bouz//Kinsco/3/Parshall/ND706	ND
14	ND3043	Arina/3/Parshall//ND688/ND674	ND
15	ND3044	Arsenal//Kormoran/Rohau	ND
16	N98-0439	China Scab#140/N90-0690	AGRIP
17	96S0594-1	B92-0540/China Scab#15	AGRIP
18	96S0594-2	B92-0540/China Scab#15	AGRIP
19	97S0121-2	N93-0134//Sumai 3/Dalen	AGRIP
20	97S0205-1	Sumai 3/Dalen//Hamer	AGRIP
21	MN99109	MN93377(Wuhan)/MN2538 (BacUp'S')	MN
22	MN99112	MN93377(Wuhan)/MN 94350)CIMMYT SO. CONE	MN
23	MN99126	MN94053 (BR23)/MN2514	MN
24	MN99192	Fuijan 5114-1/2375	MN
25	MN99322	Fuijan 5114-1/MN2538(BacUp'S')	MN
26	9229G-003B	not received	SASK
27	FA-900-720	Russ/Impervo	WPB
28	FA-900-793	Ivan/Impervo	WPB
29	D011501	Sumai3/Sceptre//D88096	ND
30	D011502	Sumai3/Sceptre//D88816	ND
31	D011503	Sumai3/Sceptre//D88816	ND
32	D011504	P98SN 727 Recurrent selection	ND
33	D011505	Ben/Rugby	ND
34	D011506	Sumai3/Sceptre/D88090	ND
*35	PI 349478	Scab screening--Yue Jin	SD
*36	PI 350768	Scab screening--Yue Jin	SD
*37	PI 382140	Scab screening--Yue Jin	SD
*38	PI 185380	Scab screening--Yue Jin	SD
*39	PI 104131	Scab screening--Yue Jin	SD
40	BW308	ACCora*2/93FHB#37	MANT
41	BW310	RL4802/ACMajestic	MANT
42	BW311	RL4802/ACMajestic	MANT
43	BW312	RL4802/ACDomain	MANT
44	00EPWB-27	HY617BSR//SD8070/HY617BSR	MANT
45	ES66	RL4452*2/FHB#37	MANT

AGRIP=AgriPro

MANT, SASK=Agriculture and Agrifood Canada, Manitoba

WPB=Western Plant Breeders

* Possible new sources of resistance from introductions by Yue Jin, SD

Table 2. 2001 Uniform Regional Scab Nursery for Spring Wheat Parents. Ames, IA.

Entry no.	Entry name	Incidence %	Severity %	100 K wt. (g)	Heading days 4-25
1	2375	1.3	0.1	3.66	56
2	WHEATON	3.8	0.3	3.44	56.5
3	BACUP	2.5	0.3	3.55	54.5
4	OSLO	1.3	0.1	3.26	55
5	ND2710	1.3	0.1	3.6	56.5
6	SD3599	2.5	0.2	3.29	56.5
7	SD3624	1.3	0.1	4.28	54.5
8	SD3650	7.5	2.0	3.09	54
9	SD3657	0.0	0.0	3.53	55.5
10	SD3666	2.5	0.2	3.52	56
11	ND2959	1.3	0.1	3.44	59.5
12	ND2978	0.0	0.0	3.39	55
13	ND3035	1.3	0.1	3.11	57
14	ND3043	2.5	0.2	3.97	58
15	ND3044	0.0	0.0	3.27	56.5
16	N98-0439	0.0	0.0	3.4	56
17	96S0594-1	2.5	0.2	3.99	54
18	96S0594-2	3.8	0.3	3.39	55.5
19	97S0121-2	3.8	1.0	3.45	56
20	97S0205-1	2.5	0.4	3.64	56.5
21	MN99109	1.3	0.1	3.34	57.5
22	MN99112	1.3	0.1	3.53	55.5
23	MN99126	1.3	0.1	3.34	58.25
24	MN99192	0.0	0.0	3.35	58
25	MN99322	0.0	0.0	2.73	56.4
26	9229G-003B	0.0	0.0	3.15	58.25
27	FA-900-720	0.0	0.0	3.37	57.5
28	FA-900-793	1.3	0.2	3.55	54.5
29	D011501	5.0	0.4	3.9	57.25
30	D011502	6.3	0.4	3.36	58.75
31	D011503	3.8	0.3	3.16	58.25
32	D011504	0.0	0.0	3.89	59.75
33	D011505	0.0	0.0	3.71	58.25
34	D011506	5.0	0.8	3.73	57.25
35	PI 349478	1.3	0.1	3.78	56
36	PI 350768	1.3	0.1	3.67	57.25
37	PI 382140	1.3	0.1	3.01	56
38	PI 185380	3.8	0.3	3.19	56.75
39	PI 104131	3.8	0.4	2.45	58.75
40	BW308	0.0	0.0	2.93	56.5
41	BW310	0.0	0.0	2.92	57
42	BW311	0.0	0.0	2.84	59.5
43	BW312	2.5	1.5	3.49	57
44	00EPWB-27	1.3	0.1	3.16	56
45	ES66	0.0	0.0	4.08	57
	LSD (0.05)			0.41	

Table 3. 2001 Uniform Regional Scab Nursery for Spring Wheat Parents. Brookings, SD.

Entry no.	Entry name	Incidence %	Severity %	Disease %	Yield g/plot	VSK %
1	2375	100.0	64.0	64.0	61.4	63.3
2	WHEATON	100.0	77.7	77.7	37.8	70.0
3	BACUP	100.0	54.4	54.4	41.8	66.7
4	OSLO	100.0	57.9	57.9	37.9	55.0
5	ND2710	100.0	51.6	51.6	95.5	41.7
6	SD3599	98.2	45.1	44.8	63.7	60.0
7	SD3624	100.0	34.2	34.2	59.9	40.0
8	SD3650	100.0	25.8	25.8	62.5	40.0
9	SD3657	100.0	67.5	67.5	49.0	76.7
10	SD3666	100.0	72.8	72.8	78.3	58.3
11	ND2959	100.0	63.3	63.3	59.0	48.0
12	ND2978	98.2	36.8	36.4	63.9	53.0
13	ND3035	100.0	80.9	80.9	32.4	71.7
14	ND3043	100.0	61.7	61.7	61.3	56.7
15	ND3044	100.0	62.7	62.7	61.8	46.7
16	N98-0439	100.0	77.2	77.2	44.9	86.7
17	96S0594-1	100.0	55.3	55.3	49.6	90.0
18	96S0594-2	100.0	78.3	78.3	40.8	82.5
19	97S0121-2	100.0	70.0	70.0	45.4	76.7
20	97S0205-1	100.0	69.1	69.1	51.3	71.7
21	MN99109	100.0	60.6	60.6	46.5	56.7
22	MN99112	100.0	61.8	61.8	63.9	37.5
23	MN99126	100.0	55.2	55.2	50.1	58.3
24	MN99192	100.0	59.5	59.5	50.4	46.7
25	MN99322	100.0	59.0	59.0	43.6	41.7
26	9229G-008B	100.0	59.7	59.7	33.4	93.3
27	FA-900-720	100.0	58.7	58.7	63.8	60.0
28	FA-900-793	100.0	53.9	53.9	54.4	61.7
29	D011501	100.0	83.2	83.2	27.3	95.0
30	D011502	100.0	83.4	83.4	27.8	88.3
31	D011503	100.0	87.4	87.4	21.9	95.0
32	D011504	100.0	86.3	86.3	29.8	93.3
33	D011505	100.0	82.1	82.1	28.7	85.0
34	D011506	100.0	82.8	82.8	24.9	76.7
35	PI 349478	100.0	40.7	40.7	75.8	61.7
36	PI 350768	98.2	31.2	31.0	77.4	35.0
37	PI 382140	100.0	51.6	51.6	70.2	28.0
38	PI 185380	100.0	69.5	69.5	45.1	58.0
39	PI 104131	100.0	66.1	66.1	56.6	33.0
40	BW308	100.0	77.9	77.9	48.8	83.3
41	BW310	100.0	60.4	60.4	49.2	38.3
42	BW311	100.0	64.2	64.2	50.9	70.0
43	BW312	100.0	60.6	60.6	55.9	58.3
44	00EPWB-27	100.0	77.0	77.0	58.8	58.0
45	ES66	100.0	68.3	68.3	34.7	71.7
	Mean	99.9	63.3	63.3	50.8	63.0
	LSD (0.05)	NS	19.0	19.1	20.7	25.1
	CV %	0.9	18.9	19.0	24.7	24.1

Table 4. 2001 Uniform Regional Scab Nursery for Spring Wheat Parents. St. Paul, MN.

Entry no.	Entry name	Incidence %	Severity %	Disease %	Yield g/plot	Test wt. lb/bu	VSK %	DON ppm	Heading days 6-1	Inoc. date
1	2375	100	31.1	31.1	183	55.8	22.3	8.3	24	2
2	WHEATON	100	76.9	76.9	69	44.3	50	36.1	27	3
3	BACUP	86.7	25.8	23.5	134	59.2	8	3.8	22	2
4	OSLO	100	80.4	80.4	78	49.6	33.3	21.4	24	2
5	ND2710	88.3	15.3	13.8	164	59.8	9	2.9	25	2
6	SD3599	96.7	42.8	41.6	186	55.3	22.3	8.8	23	2
7	SD3624	98.3	30.9	30.5	141	59.2	8	4.3	23	2
8	SD3650	83.3	23	21.3	239	58.4	13	4.9	22	1.7
9	SD3657	100	68.5	68.5	122	51	33.3	14.9	24	2
10	SD3666	75	14.1	12	182	57.8	5	3.2	24	2
11	ND2959	98.3	19.9	19.6	219	60.1	8.7	6	27	3
12	ND2978	95	38.8	37.9	125	58.4	18.3	8	24	2
13	ND3035	100	41.9	41.9	136	53.6	18.3	8.7	28	3
14	ND3043	98.3	45.4	45	135	57.2	18	6.9	26	3
15	ND3044	100	47.4	47.4	158	58.4	12	3.8	26	2
16	N98-0439	100	75.1	75.1	75	50.2	31.7	12.2	25	2
17	96S0594-1	100	72.5	72.5	133	49.9	26.7	11.8	24	2
18	96S0594-2	100	46.1	46.1	139	54.4	14	9	25	2
19	97S0121-2	100	67.5	67.5	119	50.8	25.7	12.3	24	2
20	97S0205-1	100	50.2	50.2	155	52.5	23	11.8	24	2
21	MN99109	93.3	23.1	22.5	145	58.9	6	2.7	26	2.7
22	MN99112	60	14.9	10.6	256	60.1	5.7	1.8	25	2
23	MN99126	95	24.1	23.2	174	60.6	8.7	3.4	27	3
24	MN99192	76.7	11.1	8.5	226	59.2	6.7	2.4	28	3
25	MN99322	75	14.3	12.5	177	57.2	7.3	2.3	26	2.7
26	9229G-003B	71.7	18.1	12.8	167	53.3	9	4	31	4
27	FA-900-720	88.3	13.3	11.8	282	61.2	5	2.5	27	3
28	FA-900-793	96.7	43.4	42.8	107	57.2	12.3	4.5	22	2
29	D011501	100	38.1	38.1	101	51.9	17.3	26.9	28	3
30	D011502	100	39.9	39.9	138	54.1	17.7	9.7	27	2.7
31	D011503	100	34.3	34.3	141	55.6	17.3	9.3	27	3
32	D011504	100	56	56	173	54.1	16.7	17.7	28	3
33	D011505	100	62.4	62.4	161	54.1	11.7	10	31	4
34	D011506	100	60.5	60.5	143	54.7	20	16.3	29	3.7
35	PI 349478	70	12.8	9.8	178	59.5	4.3	3.7	24	2
36	PI 350768	85	18.4	16.2	165	59.8	7.4	2.6	25	2
37	PI 382140	73.3	17.3	12.9	144	54.4	8.7	3.7	25	2
38	PI 185380	100	68.2	68.2	248	58.7	8.7	2.1	30	4
39	PI 104131	95	25.6	24.6	150	59.8	6.7	2	26	2
40	BW308	100	44.4	44.4	132	55.8	12.3	3.8	25	2
41	BW310	76.7	13.3	10.6	203	56.1	4.7	1.8	28	3
42	BW311	96.7	21.4	20.7	222	55.8	9.3	3.6	28	3
43	BW312	88.3	22.1	19.6	166	55.8	10	4.8	24	2
44	00EPWB-27	100	79.5	79.5	86	53.3	31.7	14.6	24	2
45	ES66	100	49.8	49.8	126	56.1	14.7	3.8	24	2
	MEAN	92.5	38.7	37.7	158	55.8	15.1	8	26	2.5
	LSD (.05)	18	15.3	15.9	57.4		8.7		0.7	0.3
	CV%	12	24.3	26.1	22.4		35.3		1.7	7.8

Table 5. 2001 Uniform Regional Scab Nursery for Spring Wheat Parents. Crookston, MN.

Entry no.	Entry name	Incidence %	Severity %	Disease %	Yield g/plot	Test wt. lb/bu	VSK %	DON ppm	Heading days 6-1
1	2375	100	25.7	25.7	176	44.8	38.3	17.1	28
2	WHEATON	75	30.6	28.6	110	35.8	50	23.6	30
3	BACUP	55	9.8	5.1	233	55.3	12.7	5.5	26
4	OSLO	76.7	26.6	24.7	160	41.7	50	18.2	27
5	ND2710	68.3	14.2	11.8	147	53.9	13	4.4	28
6	SD3599	88.3	27.2	25.3	204	49.1	16.3	8	27
7	SD3624	91.7	33.8	32.2	185	53.6	14	8.7	27
8	SD3650	70	18.2	15.9	206	54.1	11.7	4.4	26
9	SD3657	73.3	33	31.4	157	47.9	43.3	11.4	27
10	SD3666	88.3	27.9	26.3	179	49.9	26.7	5.6	28
11	ND2959	81.7	20.8	18.1	184	50.5	25	15.2	29
12	ND2978	70	12.4	9.2	238	55.6	11.3	8.1	26
13	ND3035	80	17.2	14.4	123	47.7	41.7	14.3	29
14	ND3043	98.3	26	25.6	177	50.8	21.7	30.4	29
15	ND3044	63.3	12.9	9	196	54.4	9.3	7.2	28
16	N98-0439	86.7	28.9	25.8	178	45.1	50	10.8	28
17	96S0594-1	60	24.3	21.4	167	47.4	50	9.8	26
18	96S0594-2	51.7	12.3	6.4	217	49.4	23.3	11.4	29
19	97S0121-2	95	48.6	47.6	165	39.5	46.7	17.5	27
20	97S0205-1	81.7	18.6	15	165	46	36.7	10.2	28
21	MN99109	81.7	13.4	11.1	134	54.1	9.3	9	29
22	MN99112	53.3	14.8	8.9	205	57.2	5.3	2.7	28
23	MN99126	45	12.3	6.8	163	56.7	9.7	4.6	29
24	MN99192	53.3	9.1	5	218	54.7	10	5.9	29
25	MN99322	68.3	19.8	17	204	53.3	15	4.3	29
26	9229G-003B	60	11.6	8.3	165	43.7	50	8.8	36
27	FA-900-720	41.7	8	3.5	286	56.4	6	4.5	28
28	FA-900-793	43.3	11.6	6.2	152	51.3	41.7	10.4	25
29	D011501	76.7	35	33.2	84	38.6	50	40	29
30	D011502	100	43.8	43.8	88	41.7	45	14.2	29
31	D011503	96.7	40	39.7	101	42.3	50	13.3	29
32	D011504	100	50.3	50.3	126	43.7	46.7	23.4	29
33	D011505	96.7	23.7	23.1	118	44.3	50	24	34
34	D011506	98.3	44.3	43.9	81	41.7	50	30.4	32
35	PI 349478	30	6.3	2	156	55.8	13	4.5	27
36	PI 350768	13.3	8.2	1.1	166	56.7	6.6	3.1	28
37	PI 382140	68.3	17.7	13.6	145	51.9	16	2.7	29
38	PI 185380	68.3	14.7	10.3	134	49.4	25.6	10.9	34
39	PI 104131	50	11.1	6.7	164	57	5.3	5.1	29
40	BW308	28.3	7.6	2.2	156	52.7	22.3	5.4	27
41	BW310	50	9.6	5	189	50.8	11.7	3.6	29
42	BW311	100	41.3	41.3	191	49.6	29	4.4	29
43	BW312	78.3	17.8	14.9	176	49.6	36.7	5.5	28
44	00EPWB-27	100	45.3	45.3	162	49.9	25	10.4	26
45	ES66	93.3	24.4	23	175	46.2	28.3	12.6	28
	MEAN	72.2	22.5	19.7	167	49.4	27.8	11.2	28
	LSD (.05)	38.4	22	24	73		11.1		0.9
	CV%	32.8	60.3	75.1	26.9		24.5		2

Table 6. 2001 Uniform Regional Scab Nursery for Spring Wheat Parents. Prosper, ND.

Entry no.	Entry name	Incidence %	Severity %	Disease %	VSK %	DON ppm
1	2375	67	25	17	20	3.9
2	WHEATON	99	62	61	45	11.7
3	BACUP	74	33	24	10	2.7
4	OSLO	100	74	74	33	7
5	ND2710	54	31	17	4	1.1
6	SD3599	65	27	18	24	3
7	SD3624	73	43	31	18	3.5
8	SD3650	54	32	17	11	2.4
9	SD3657	73	31	23	32	7.4
10	SD3666	69	30	21	12	1.7
11	ND2959	99	50	50	9	3.2
12	ND2978	54	17	9	7	3.3
13	ND3035	94	45	42	12	3.8
14	ND3043	98	41	40	8	5.7
15	ND3044	94	39	37	5	1.7
16	N98-0439	94	67	63	28	4
17	96S0594-1	100	90	90	40	5.6
18	96S0594-2	76	30	23	33	4.7
19	97S0121-2	100	74	74	23	2.4
20	97S0205-1	100	87	87	43	5.1
21	MN99109	97	55	53	12	6.4
22	MN99112	44	18	8	15	2.4
23	MN99126	78	23	18	8	3.5
24	MN99192	96	53	51	12	4
25	MN99322	98	45	44	18	3.2
26	9229G-003B	-	-	-	38	8.4
27	FA-900-720	95	40	38	8	3.2
28	FA-900-793	100	73	73	18	6.3
29	DO11501	-	-	-	38	9.2
30	DO11502	100	100	100	33	2.3
31	DO11503	100	100	100	22	2
32	DO11504	96	51	49	25	6.9
33	DO11505	100	53	53	30	16.1
34	DO11506	100	78	78	30	16.2
35	PI349478	49	17	8	4	1.5
36	PI350768	55	15	8	3	1.3
37	PI382140	73	14	10	24	1.6
38	PI185380	100	37	37	28	7.3
39	PI104131	96	42	40	10	4.4
40	BW308	76	39	30	7	2
41	BW310	95	43	41	7	3.6
42	BW311	99	44	55	30	4.7
43	BW312	72	26	19	16	2.1
44	00EPWB-27	70	38	27	25	6
45	ES66	97	36	35	12	4.2
	Mean	84	46	42	20	4.7
	LSD (.05)	35	30	-	12	5.1

Table 7. 2001 Uniform Regional Scab Nursery for Spring Wheat Parents. Langdon, ND.

Entry no.	Entry name	Incidence %	Severity %	Disease %	VSK %	Heading days 7-1	Head length cm	Spikelets per head	Spikelet length cm
1	2375	73.3	10.4	8.5	15.7	8.3	7.3	13.7	1.1
2	WHEATON	68.9	11.0	7.8	35.7	11.0	7.8	15.7	1.0
3	BACUP	75.5	7.8	5.9	14.7	5.3	8.2	16.0	1.0
4	OSLO	60.0	10.5	6.5	27.0	8.0	8.0	14.7	1.1
5	ND2710	40.0	3.6	1.9	8.7	7.7	7.7	13.7	1.1
6	SD3599	64.4	8.2	5.4	12.7	7.0	6.0	13.3	0.9
7	SD3624	55.6	7.6	4.8	14.3	5.7	6.7	12.7	1.1
8	SD3650	46.7	2.9	1.1	12.3	5.3	6.8	15.0	0.9
9	SD3657	73.3	13.1	10.7	21.7	7.3	6.7	14.0	1.0
10	SD3666	31.1	3.3	1.1	10.7	7.0	6.8	13.7	1.0
11	ND2959	68.9	11.5	9.1	13.7	9.0	7.7	12.3	1.3
12	ND2978	48.9	5.3	2.7	10.0	6.0	7.2	13.7	1.0
13	ND3035	68.9	13.1	10.3	22.0	8.7	8.3	14.7	1.1
14	ND3043	64.4	9.6	6.5	17.0	9.3	8.0	13.7	1.2
15	ND3044	55.6	6.2	3.6	6.3	7.3	7.8	15.3	1.0
16	N98-0439	66.7	9.3	7.1	19.3	8.0	6.8	13.3	1.0
17	96S0594-1	66.7	6.9	4.9	29.7	7.3	7.5	15.7	1.0
18	96S0594-2	86.7	18.2	16.1	19.0	9.3	7.7	14.0	1.1
19	97S0121-2	82.2	18.4	15.7	25.3	7.3	6.5	13.7	1.0
20	97S0205-1	57.8	6.7	3.8	19.3	8.3	7.3	14.0	1.1
21	MN99109	66.7	10.3	7.4	13.0	11.7	6.2	14.7	0.8
22	MN99112	40.0	4.3	2.3	6.3	8.7	8.2	15.7	1.1
23	MN99126	35.6	5.9	2.9	11.7	8.7	6.3	14.3	0.9
24	MN99192	57.8	6.3	3.7	9.7	10.0	8.2	14.7	1.1
25	MN99322	66.7	10.8	7.7	15.3	10.0	8.0	15.0	1.1
26	9229G-003B	48.9	5.6	2.8	16.3	11.7	6.8	17.3	0.8
27	FA-900-720	80.0	12.1	10.0	16.3	9.3	7.3	15.7	0.9
28	FA-900-793	46.7	7.0	3.4	17.7	6.0	6.2	12.7	1.0
29	D011501	82.2	11.7	9.7	27.7	9.7	8.0	15.7	1.0
30	D011502	68.9	12.0	8.3	27.7	10.0	7.0	16.0	0.9
31	D011503	64.5	11.5	8.0	20.7	8.7	7.0	18.7	0.7
32	D011504	84.4	12.8	10.9	17.0	9.0	8.0	17.0	0.9
33	D011505	64.5	9.2	6.4	26.0	13.0	5.8	15.7	0.7
34	D011506	77.8	13.0	10.0	26.7	11.0	6.7	16.3	0.8
35	PI 349478	73.3	18.2	13.7	12.0	8.0	9.0	14.0	1.3
36	PI 350768	37.8	3.7	1.4	9.7	8.3	7.2	12.7	1.1
37	PI 382140	33.4	3.2	1.4	6.3	8.0	7.3	15.3	1.0
38	PI 185380	53.3	7.1	4.6	10.3	12.3	7.2	13.3	1.1
39	PI 104131	26.7	3.6	1.3	10.0	8.3	7.3	15.0	1.0
40	BW308	44.4	6.2	3.1	10.3	7.0	6.7	14.0	1.0
41	BW310	37.8	3.9	1.7	6.7	8.7	6.2	12.7	1.0
42	BW311	77.8	9.1	7.8	13.0	8.7	6.8	14.0	1.0
43	BW312	20.0	3.5	0.7	4.7	6.3	5.5	11.7	1.0
44	00EPWB-27	35.6	5.9	2.2	15.0	6.7	6.7	11.7	1.1
45	ES66	53.3	5.6	3.8	13.3	8.0	8.5	15.7	1.2
	MEAN	58.5	8.6	6.0	16.0	8.5	7.2	14.5	1.0
	LSD (.05)	26.0	6.4	6.6	8.0	1.5	1.5	2.9	0.2
	C.V. %	27.4	45.9	68.1	30.8	11.0	13.1	12.4	14.6

Table 8. 2001 Uniform Regional Scab Nursery for Spring Wheat Parents. Glenlea, Canada.

Entry no.	Entry name	Incidence %	Severity %	Disease %	DON ppm
1	2375	72.3	32.1	23.2	6.6
2	WHEATON	83.3	54.2	45.2	18.8
3	BACUP	80.8	32.2	26.0	8.1
4	OSLO	98.1	50.7	49.7	15.2
5	ND2710	62.7	18.0	11.3	3.0
6	SD3599	63.4	31.5	20.0	5.1
7	SD3624	65.3	29.9	19.5	7.7
8	SD3650	80.6	26.6	21.4	4.0
9	SD3657	80.7	38.4	31.0	16.6
10	SD3666	73.3	22.5	16.5	5.6
11	ND2959	69.2	24.2	16.7	3.5
12	ND2978	81.8	27.5	22.5	9.5
13	ND3035	87.8	43.2	38.0	9.5
14	ND3043	93.5	38.1	35.6	10.2
15	ND3044	72.0	21.5	15.5	4.8
16	N98-0439	74.8	34.7	26.0	7.1
17	96S0594-1	82.3	45.6	37.5	10.4
18	96S0594-2	92.6	33.0	30.5	10.9
19	97S0121-2	98.3	50.7	49.9	12.6
20	97S0205-1	91.9	40.2	37.0	21.7
21	MN99109	73.5	25.9	19.0	5.6
22	MN99112	73.8	22.1	16.3	2.6
23	MN99126	76.5	26.6	20.3	4.8
24	MN99192	69.0	24.7	17.1	7.9
25	MN99322	80.9	23.5	19.0	5.0
26	9229G-008B	72.8	32.3	23.5	3.9
27	FA-900-720	63.8	23.0	14.7	3.0
28	FA-900-793	87.2	37.6	32.8	9.6
29	D011501	90.6	52.8	47.8	15.6
30	D011502	98.1	52.3	51.3	10.7
31	D011503	90.9	47.6	43.3	10.3
32	D011504	91.8	46.4	42.6	16.0
33	D011505	90.9	47.9	43.5	11.3
34	D011506	80.6	43.1	34.7	17.0
35	PI 349478	51.1	16.8	8.6	1.6
36	PI 350768	56.4	19.1	10.7	3.0
37	PI 382140	57.6	19.7	11.3	4.6
38	PI 185380	81.5	32.8	26.7	6.2
39	PI 104131	78.6	26.4	20.8	6.0
40	BW308	78.8	31.7	25.0	7.1
41	BW310	62.9	21.1	13.3	2.1
42	BW311	81.1	27.9	22.7	3.1
43	BW312	88.5	31.7	28.1	5.3
44	00EPWB-27	93.3	52.7	49.2	11.2
45	ES66	87.2	44.1	38.4	10.2
	LSD (.05)	18.2	11.5	11.8	5.2

Table 9. 2001 Uniform Regional Scab Nursery for Spring Wheat Parents Combined Over Locations.

Entry no.	Entry name	Incidence %	Severity %	Disease %	VSK %	DON ppm
No. locations		6	6	6	5	4
1	2375	85.4	31.4	28.3	31.9	9.0
2	WHEATON	87.7	52.1	49.5	50.1	22.6
3	BACUP	78.7	27.2	23.2	22.4	5.0
4	OSLO	89.1	50.0	48.9	39.7	15.5
5	ND2710	68.9	22.3	17.9	15.3	2.8
6	SD3599	79.3	30.3	25.8	27.1	6.2
7	SD3624	80.6	29.9	25.4	18.9	6.1
8	SD3650	72.4	21.4	17.1	17.6	3.9
9	SD3657	83.4	41.9	38.7	41.4	12.6
10	SD3666	72.8	28.4	24.9	22.5	4.0
11	ND2959	86.2	31.6	29.5	20.9	7.0
12	ND2978	74.6	23.0	19.6	19.9	7.2
13	ND3035	88.4	40.2	37.9	33.1	9.1
14	ND3043	92.1	37.0	35.7	24.3	13.3
15	ND3044	80.8	31.6	29.2	15.9	4.4
16	N98-0439	87.0	48.7	45.7	43.1	8.5
17	96S0594-1	84.8	49.1	46.9	47.3	9.4
18	96S0594-2	84.5	36.3	33.4	34.4	9.0
19	97S0121-2	95.9	54.9	54.1	39.5	11.2
20	97S0205-1	88.6	45.3	43.7	38.7	12.2
21	MN99109	85.4	31.4	28.9	19.4	5.9
22	MN99112	61.9	22.6	18.0	14.0	2.4
23	MN99126	71.7	24.5	21.1	19.3	4.1
24	MN99192	75.5	27.3	24.1	17.0	5.1
25	MN99322	81.5	28.7	26.5	19.5	3.7
26	9229G-003B	70.7	25.5	21.4	41.3	6.3
27	FA-900-720	78.1	25.9	22.8	19.1	3.3
28	FA-900-793	79.0	37.7	35.3	30.3	7.7
29	D011501	89.9	44.2	42.4	45.6	22.9
30	D011502	94.5	55.2	54.4	42.3	9.2
31	D011503	92.0	53.5	52.1	41.0	8.7
32	D011504	95.4	50.5	49.2	39.7	16.0
33	D011505	92.0	46.4	45.1	40.5	15.4
34	D011506	92.8	53.6	51.6	40.7	20.0
35	PI 349478	62.2	18.6	13.8	19.0	2.8
36	PI 350768	57.6	15.9	11.4	12.3	2.5
37	PI 382140	67.6	20.6	16.8	16.6	3.1
38	PI 185380	83.9	38.2	36.1	26.1	6.6
39	PI 104131	74.4	29.1	26.6	13.0	4.4
40	BW308	71.2	34.5	30.4	27.0	4.6
41	BW310	70.4	25.2	22.0	13.7	2.8
42	BW311	92.4	34.7	35.3	30.3	3.9
43	BW312	74.5	27.0	23.8	25.1	4.4
44	00EPWB-27	83.2	49.7	46.7	30.9	10.5
45	ES66	88.5	38.0	36.4	28.0	7.7
	MEAN	81.1	35.4	32.6	28.4	8.1
	LSD (.05)	16.4	14.3	15.4	10.8	5.5