

Limited Term Inoculation Screening of Germplasm for Resistance to *Sclerotinia sclerotiorum*

Tatnell, J.R.^A, Middleton, J.K.^{A*}, and Redden, R.J.^B

A. Plant Pathology Branch, Department of Primary Industries PO Box 23, Kingaroy, Queensland, 4610 (*recently deceased)

B. Agriculture Branch, Department of Primary Industries Hermitage Research Station, M/S 508, Warwick, Queensland, Australia, 4370

Over 2,200 accessions of *Phaseolus* spp., mainly *vulgaris*, have been screened using a modified Limited Term Inoculation (LTI) test on juvenile plants (Middleton and Redden, 1990). The results of the initial unreplicated screening are provided in Table 1, with the difference in infection levels between low score accessions and susceptible checks (Gallaroy and Actolac) being more consistent in 1984/85 and 1991/92 tests than in 1986. In the latter case infection of checks was not uniform and some of the corresponding accessions screened are more likely to be escapes. Various accessions including erect plant types noted as resistant in field tests (Midnight, A55, Black Valentine, Charlevioix, Harvester, NY844, NY9406 and NY9412) were susceptible in LTI tests.

Reference - Middleton and Redden, 1990. Selection of *Sclerotinia sclerotiorum* resistance from a *Phaseolus* spp. germplasm collection. Ann. Rep. BIC. 33:189.

Table 1. Resistant accessions from the primary germplasm screening of seedlings in a limited term inoculation juvenile test for resistance to *Sclerotinia sclerotiorum* 1984-1992, and corresponding check ratings (a, b).

Accession #	Name	Germplasm rating	a) Gallaroy	b) Actolac	Year
108	Tweed Wonder	1,1	2,2,4,4,4	2,3,4,4,4	1986
203	Cal. Small white No. 643	2,2	3,4	4,4,4,4	1984/85
214	Selection 3-18	1,1	2,2,4,4,4	2,3,4,4,4	1986
298	U.S.5	2,2	4,4,4	4,4,4	1984/85
319	U.S.P.I. 174997	2	4,4,4	4,4,4	1984/85
499	P.I. 203958	2	4	4,4,4	1984/85
521	Uribe Redondo	1,2	4	4,4,4	1984/85
736	X.I. 83-4589	2	4,4	4,4	1984/85
755	Flair	1,1	2,2,4,4,4	2,3,4,4,4	1986
931	CPI 165948	2,2	4,4,4	4,4,4	1984/85
1000	CPI 175263	2	4,4,4,4	3,4	1984/85
1038	CPI 84613 (Black turtle Soup 31)	2	4,4,4,4	3,4	1984/85
1107	CPI 95838 (A480)	2	4,4,4,4	-	1984/85
1132	CPI 95863 (G4523)	2	4,4,4,4	-	1984/85
1207	CPI 95939 (A216)	1,2	4,4,4	1,4,4	1984/85
1268	C34	1,2	2,2,4,4,4	2,3,4,4,4	1986
1309	10726 (Russian)	2	4,4	4	1984/85
1319	Mottled Sel ² K484	1,2	2,2	2,3,4,4,4	1986
1320	Linea 32	2	4,4,4	4	1984/85
1333	Atlantico 6	2	4,4	4	1984/85
1358	Pearly Wonji	2	2,2,4,4,4	4	1984/85
1410	Bat 482	2	4,4	-	1986
1422	Mita - RSP - 1	1	4,4	-	1986
1469	Bac 17	1,1	4,4	2,3,4,4,4	1986
1506	PER 257	2	-	2,3,4,4,4	1986
1519	Bat 447 - 1c (78VEF 1173-1)	2	-	2,3,4,4,4	1986
1674	G 5394	2,1	2,2,4,4,4		1991/92
1698	XAN 87	2,3	2,2,4,4,4		1991/92
1706	PAN 47	3,3	2,2,4,4,4		1991/92
1709	Bat 1428	2,1	4,4,4		1991/92
1734	Bat 1620	1,1	4,4,4		1991/92
1736	Bat 1714	3,2	5		1991/92
1743	RAB 116	2	5		1991/92
1748	PAD 1	2,2	5		1991/92
1779	NY 76-2812-15	2	5		1991/92
1814	NAG 94	2,2	5		1991/92
1816	NAG 102	2,2	5		1991/92
1818	NAG 111	3,2	5		1991/92

Accession #	Name	Germplasm rating	a) Gallaroy	b) Actolac	Year
1834	XAN 112	2,2	5		1991/92
1839	PAN 55	2,3	5		1991/92
1871	A 197	3,3	5,5,5,4,5,5		1991/92
1878	PAD 13	2,3	5,5,5,4,5,5		1991/92
1884	PAN 126	2,2	5,5,5,4,5,5		1991/92
1886	PAN 133	2,2	5,5,5,4,5,5		1991/92
1888	XAA 18	2,2	5,5,5,4,5,5		1991/92
1890	XAA 20	2,2	5,5,5,4,5,5		1991/92
1893	XAA 49	2,1	5,5,5,4,5,5		1991/92
1895	XAA 51	1,2	5,5,5,4,5,5		1991/92
1901	XAA 76	3,2	5,5,5,4,5,5		1991/92
1907	XAA 97	3,3	5,5,5,4,5,5		1991/92
1908	XAA 98	2,2	5,5,5,4,5,5		1991/92
1917	PAI 130	2,2	5,5,5,4,5,5		1991/92
1939	PVA 3038	3,3	4,4,5		1991/92
1946	ICA 15395	2,3	4,4,5		1991/92
1970	AND 352	2	4,4,5		1991/92
2024	A 8-40	3	2,5,5		1991/92
2026	CRAN 423	3,2	2,5,5		1991/92
2040	R 642C-9-B	3,3	2,5,5		1991/92
2060	829-306-B	2	2,5,5		1991/92
2065	N810C-181-B	2	2,5,5		1991/92
2070	Nebraska 1-1	2,2	2,5,5		1991/92
2084	Constanza 1	3,1	2,5,5		1991/92
2091	XAN 40	2,2	2,5,5		1991/92
2095	XAN 80	2,2	2,5,5		1991/92
2097	XAN 88	2,2	2,5,5		1991/92
2121	XAN 170	1,1	2,5,5		1991/92
40058	BLM 83	3	-		1991/92
40116	PAC 17	3,1	-		1991/92
40129	PAC 30	2	-		1991/92
40132	PAC 33	3	-		1991/92
40134	PAC 35	2	-		1991/92
40156	PAN 140	3	-		1991/92
40201	PAN 187	3	-		1991/92
40208	PAN 194	3	-		1991/92
40237	ZAA 69	3,2	-		1991/92
40240	ZAN 113	3,3	-		1991/92
40247	BAT 65	2,2	-		1991/92
40254	A 525	2,3	-		1991/92

1. Rating Scale

- 1 = no infection
- 2 = small local lesions no vertical spread on stem
- 3 = large local lesions no vertical spread on stem
- 4 = spreading lesions, part girdle of stem
- 5 = spreading lesion, complete girdle of stem