

# Air-borne rust inoculum over western Canada in 1976<sup>1</sup>

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A few urediospores of leaf rust [*Puccinia recondita*] and stem rust [*P. graminis*] were carried into western Canada early in the growing season but rust development was limited by dry weather and the total numbers of spores present were much smaller than the 11-year mean. There were more spores over Saskatchewan than over Manitoba.

Can. Plant Dis. Surv. 56: 117-118, 1976

Quelques urediospores de rouille de feuilles (*Pucciniarecondita*) et de rouille de la tige (*P. graminis*) ont été transportées en suspension dans l'air dans l'ouest du Canada au début de la saison de végétation, mais le temps sec a limité le développement de la rouille et le nombre total de spores en suspension a été beaucoup plus faible que la moyenne des 11 années précédentes. Il y avait plus de spores en suspension en Saskatchewan qu'au Manitoba.

The numbers of air-borne urediospores of *Puccinia recondita* and *P. graminis* over western Canada in 1976 were estimated by the same methods described in previous reports of this study published annually in the Canadian Plant Disease Survey.

A few urediospores of leaf rust and stem rust were carried into western Canada in late May and early June. Presumably they initiated infections that, along with additional spores from the south, resulted in increasing

numbers of spores being caught after mid June (Table 1). More spores were present over Saskatchewan than over Manitoba, presumably because there was more moisture there.

The mean number of spores found in the spore traps (Table 2) was much smaller than the 1966-76 mean. The small number of spores probably resulted from the very dry condition on the prairies after mid July that limited rust development.

Table 1. Number of urediospores of stem rust and leaf rust per square inch (6.5 cm<sup>2</sup>) observed on Vaseline-coated slides exposed for 72-hour periods at three locations in Manitoba and three locations in Saskatchewan in 1976

Date	Winnipeg		Morden		Brandon		Indian Head		Regina		Saskatoon	
	Stem rust	Leaf rust	Stem rust	Leaf rust	Stem rust	Leaf rust	Stem rust	Leaf rust	Stem rust	Leaf rust	Stem rust	Leaf rust
May 28 - June 1	2	0	0	0	0	0	0	0	0	0	0	0
June 1 - 4	0	0	0	0	0	0	0	2	0	2	0	0
4 - 7	0	0	0	0	0	0	0	0	0	0	0	0
7 - 10	0	0	0	0	0	0	0	0	0	1	0	0
10 - 13	0	0	0	0	0	0	0	0	0	0	0	9
13 - 16	0	0	1	0	0	0	0	0	0	0	3	7
16 - 19	0	0	3	1	0	0	0	0	2	1	6	12
19 - 22	1	0	0	3	0	1	0	2	0	2	0	3
22 - 25	1	2	3	9	6	1	0	0	1	0	0	3
25 - 28	0	1	0	4	0	3	0	3	0	0	2	5
28 - July 1	0	7	0	1	0	0	0	1	0	2	3	34
June total	4	10	7	18	6	5	0	8	3	8	14	73
July 1 - 4	1	4	2	11	0	2	0	5	0	14	2	31
4 - 7	1	22	4	22	1	12	1	2	2	5	5	30
7 - 10	1	16	0	15	5	19	1	10	0	12	1	4
10 - 13	2	28	2	89	0	39	0	7	1	14	2	8

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Table 1. cont.

Date	Winnipeg		Morden		Brandon		Indian Head		Regina		Saskatoon	
	Stem rust	Leaf rust	Stem rust	Leaf rust	Stem rust	Leaf rust	Stem rust	Leaf rust	Stem rust	Leaf rust	Stem rust	Leaf rust
July 13-16	0	35	0	43	2	25	0	8	2	10	0	14
16-19	4	170	4	38	0	19	2	3	1	8	6	33
19-22	2	67	3	22	1	72	1	10	1	28	0	17
22-25	1	128	13	229	3	101	0	30	0	39	0	5
25-28	0	334	19	169	5	196	4	98	4	98	9	80
28-31	0	12	4	132	1	147	0	4	2	25	1	12
July total	12	816	51	770	18	632	9	177	9	155	26	234
July 31 - Aug. 3	0	0	0	54	0	30	1	57	0	125	5	153
Aug. 3-6	12	112	9	254	1	71	1	136	2	205	4	199
6-9	10	90	11	14	6	135	6	240	6	495	15	372
9-12	8	23	10	6	4	15	1	124	4	338	12	235
12-15	4	5	7	8	0	0	1	29	15	614	81	3018
August total	34	230	37	336	11	251	10	589	27	2011	117	3977
1976 Total	50	1056	95	1124	35	888	19	774	39	2174	157	4284
1975 Total	319	1271	240	1809	36	496	4	335	15	962	210	1439

Table 2. Mean number of urediospores of stem rust and leaf rust observed on slides exposed for 48-hour periods at six locations from July 1 to August 15 for the years 1966 to 1976"

Year	Winnipeg		Morden		Brandon		Indian Head		Regina		Saskatoon		Mean	
	Stem rust	Leaf rust	Stem rust	Leaf rust	Stem rust	Leaf rust	Stem rust	Leaf rust	Stem rust	Leaf rust	Stem rust	Leaf rust	Stem rust	Leaf rust
1976	2	47	4	50	2	39	1	34	2	96	4	109	3	63
1975	14	57	9	82	2	21	1	13	1	43	10	64	6	47
1974**	1	4	1	7	1	5	1	5	1	12	1	47	1	13
1973	16	249	4	136	1	242	2	629	2	1449	7	179	5	481
1972	16	277	24	696	16	645	12	1515	23	6566	3	528	16	1705
1971	38	497	14	404	4	114	5	125	5	172	7	87	12	233
1970	56	252	73	649	12	235	8	173	12	480	2	197	27	331
1969	5	41	5	62	1	29	1	8	1	6	2	24	3	28
1968	3	225	5	219	1	47	1	24	1	23	1	15	2	92
1967	9	81	6	122	1	16	1	8	2	11	0	12	3	42
1966	23	145	17	239	4	11	13	702	6	618	3	1296	11	502
1966-76 Mean	16.6	170.5	14.7	242.4	4.0	127.6	4.2	294.2	5.1	861.5	3.6	232.5	8.1	321.5

\* 1976 data converted from 72-hour exposures

\*\* July 1 to August 5