

## ROOT ROT OF PEAS IN PRINCE EDWARD ISLAND IN 1969<sup>1</sup>

H. Winston Johnston and J.A. Cutcliffe<sup>2</sup>

Production of vegetables for processing has become an important segment of agriculture in Prince Edward Island. The major crop produced for this rapidly expanding industry is peas. Land area devoted to this crop has steadily increased during the past ten years and over 5,500 acres were grown for freezing and canning in 1969.

Prior to 1969, disease losses were relatively minor and were usually caused by *Ascochyta* spp. (1). In 1969, fields were observed that lacked uniformity of stand and had areas which could easily be distinguished by a general lack of vigor. Plants in these areas exhibited symptoms of severe root rot and from their roots a biotype of *Fusarium oxysporum* was isolated. Soil dilution plate counts revealed from 2,000 to 3,000 *Fusarium* propagules per gram of undried soil from areas where plants exhibited slight to severe symptoms, respectively.

The disease symptoms were confined to about 600 acres near Bedeque in south-central P.E.I. The most severe losses occurred in one 70 acre field where yields obtained were 50% of the average for the area. The estimated overall yield reduction for the 600 affected acres was 20%. Peas have been produced in this area for a longer period than in other areas of the Province and during the past 4 to 5 years some of these fields have been cropped to peas continuously. There was no evidence of root rot in other pea producing areas where there are very few fields that have had more than 3 crops of peas during the past 10 years.

Presumably, the lack of crop rotation has enhanced the inoculum potential of the causal organisms. To minimize losses from root rot organisms, it appears that peas can no longer be produced under a monoculture cropping system in Prince Edward Island.

### Acknowledgments

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### Literature cited

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<sup>1</sup> Contribution No. 212, Research Station, Canada Department of Agriculture, Charlottetown, Prince Edward Island.

<sup>2</sup> Plant Pathologist and Horticulturist, respectively.

## CHAR SPOT ON WHEATGRASSES<sup>1</sup>

J. Drew Smith<sup>2</sup>

Char spot caused by *Septogloeum oxysporum* (Sacc.) Bromm. and Rouss. has been found on wheatgrasses, *Agropyron* spp., in Saskatchewan every year since 1965. Not until 1969 was it seen in sufficient amounts for comparison to be made of the disease reactions of strains. In a dryland test at Saskatoon on 17 July, ratings were made on 14 strains of slender wheatgrass (*A. trachycaulium* (Link) Malte) and on two strains of crested wheatgrass (*A. cristatum* [L.] Gaertn.). The design of the test was a 4 x 4 balanced lattice with 6-row plots 20 ft long. Ratings were made on 10 tillers at random in the middle rows of each plot (Table 1).

Table 1. Disease ratings for char spot on strains of *A. trachycaulium* and *A. cristatum*

Species and strain	Source	Average rating*/plant
<i>A. cristatum</i>		
'Summit'	Sask.	0.15
'Fairway'	Sask.	0.16
<i>A. trachycaulium</i>		
1587	Sask.	0.27
1439	Sask.	0.29
1710	U. S. S. R.	0.35
1632	Sask.	0.37
1142	Sask.	0.47
1708	Hungary	0.48
1358	Sask.	0.51
1554	Sask.	0.52
1181	Sask.	0.53
'Primar'	U. S. A.	0.66
'Revenue'	Sask.	0.72
1466	Sask.	0.74
1617	Sask.	0.77
1294	Sask.	1.34

\* On a 0-4 scale where 0 is no disease and 4 very severe disease.

† Duncan's multiple range test at the 5% level of significance.

<sup>1</sup> Contribution No. 372, Research Station, Canada Department of Agriculture, Saskatoon, Saskatchewan.

<sup>2</sup> Plant Pathologist.

None of the wheatgrass strains were severely affected by the disease (Table 1). Both crested wheatgrass varieties 'Summit 1' and 'Fairway', showed very slight infection, considerably less than the slender wheatgrass varieties 'Primar' and 'Revenue'. Strain 1294 was significantly less resistant than the latter two varieties. 'Revenue', scheduled to be released in 1969-70 by the Canada Department of Agriculture, had been selected for a much higher leaf-to-stem ratio and in vitro digestibility than 'Primar'<sup>3</sup>. These differences apparently were not reflected in disease resistance.

The 'Revenue' variety was also grown under irrigation at Saskatoon for seed production. Leaves were heavily damaged by *S. oxysporum*. Ratings were made on 110 tillers at random in a 1-acre plot on the same day as those on the replicated dryland test. The average rating was 2.77 (Table 1) on the irrigated plot. Irrigation may prove useful in the evaluation of the new wheatgrass varieties for resistance to this disease by accentuating differences in resistance.

<sup>3</sup> By W.L. Crowle of the Saskatoon Research Station to whom I am indebted for information.

## SNOW MOLD ON LAWNS IN SASKATOON<sup>1</sup>

J. Drew Smith<sup>2</sup>

Snow mold caused by an unidentified low-temperature basidiomycete was common on domestic lawns in Saskatoon following snow melt in the spring of 1969. In some severe cases, killed areas of grass were still visible in fall. A survey was made of the incidence of the disease on domestic front lawns in early May 1969 along streets where the age of lawns could be estimated. Certain environmental factors also were noted. Most of the lawns were composed of bluegrass, *Poa pratensis* L., alone or of a mixture of bluegrass and creeping red fescue, *Festuca rubra* L. subsp. *rubra*.

Nine hundred and thirteen lawns were rated, which was about a 4% sample of front lawns in the city. Of these, only 12% were free from symptoms of the disease (Table 1). On lawns sown in 1968, the disease occurred less frequently and was much less severe than on older lawns. This suggests either that new plants are intrinsically less susceptible to the disease, or that the inoculum of the fungus had not built up to the same extent in

the soil, on natural turfgrass litter, and on clippings in younger lawns. There was little apparent difference in incidence or severity of the disease in lawns in the other two age categories. Heavy tree shading favored the disease. Lawns associated with luxury housing had above-average incidence with a higher proportion in the very severe category. Possibly this was related to higher usage of nitrogenous fertilizer and irrigation water, producing a succulent susceptible growth (2) and to the more common use of a pure sward of the susceptible 'Merion' cultivar of *P. pratensis* (3). This cultivar is used because it forms a very attractive dark green turf under conditions of high fertility; however, it appears more susceptible to snow mold than common Kentucky bluegrass. The disease can be effectively controlled with inorganic or organic mercury fungicides applied before snowfall (1 and unpublished) but these rarely seem to be employed on lawns in the city.

Table 1. Incidence of snow mold on lawns in Saskatoon, 4 May 1969

Age or environment of lawn	Number of lawns in each rating category: <sup>1</sup>					Average rating
	None	Slight	Mod.	Mod.-severe	Very severe	
Sown 1968	46	27	7	1	0	0.5
2nd to 10th year	20	74	89	101	29	2.0
Older than 10 years	47	138	133	164	37	2.0
Heavily tree-shaded	9	62	87	130	28	2.3
Open	38	76	46	34	9	1.5
Luxury landscaping	0	13	41	56	21	2.6

Rating scale: Slight = 0-10% of lawn area affected; Mod. = 11-25%; Mod. - severe = 26-50%; Very severe = 51-100%.

## Literature cited

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<sup>1</sup> Contribution No. 371, Research Station, Canada Department of Agriculture, Saskatoon, Saskatchewan.

<sup>2</sup> Plant Pathologist.