# Cereal diseases in the Maritime Provinces, 1976

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1976
Disease surveys illustrated the severity of previously reported cereal diseases. An unidentified non-pathogenic leaf spotting of barley was reported.

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1976
Les enquêtes phytosanitaires ont mis en evidence le degré de sévérité de maladies des cereales déjà signalées auparavant. On a relevé sur l'orge la presence de taches foliaires non identifiées d'origine non pathogène.

The cereals grown in the Maritime Provinces, barley, oats, wheat and rye, were observed in experimental plots and in growers' fields from the time of planting until harvest. The weather in late May and June was warmer and drier than usual, but in July rainfall was higher than the norm and maximum daily temperatures were lower. A summary of climatic data is given in Table 1. The higher than average May rainfall total is attributable to heavy rainfall in early May before seeding. There were no hot humid spells until late August. This weather pattern may help to explain to some extent the atypical disease situation.

Table 1. Climatic data - Charlottetown 1976

| | May | June | July | August |
|---|---|---|---|---|
| Total rainfall (mm) | 116.5 (78.2) | 60.4 (78.9) | 101.6 (74.2) | 87.2 (90.2) |
| Mean daily maximum temperature °C | 15.2 (14.0) | 21.5 (19.5) | 22.7 (23.6) | 23.1 (22.8) |

**Figures in brackets are the norms from data collected from 1941-1971.**

### Barley

Diseases on this crop were not as severe as usual. The cool wet July promoted the spread of scald incited by ***Rhynocosporium secalis*** (Oud.) Davis. This disease is rarely present in the Maritimes in recordable quantities but this year there was moderate infection in some fields. Winter barley, observed in the Annapolis Valley of Nova Scotia was severely infected by this organism. Moderately severe powdery mildew incited by ***Erysiphe graminis*** DC. ex Merat f. sp. ***hordei*** Marchall was observed in one field of Laurier barley in Colchester Co., Nova Scotia. In previous years only trace amounts of mildew have been observed on barley. The common barley pathogen, ***Bipolaris sorokiniana*** (Sacc. in Sorok.) Shoem. which causes root rot, seedling blight and spot blotch was not severe. Symptoms of spot blotch were observed on some of the later varieties and late plantings, but most of the barley senesced before 5% leaf spot coverage was recorded on flag and sub-apical leaves. Root rot and seedling blight severities were considerably lower than those experienced in previous years. The low infection by ***B. sorokiniana*** is attributed to the low inoculum levels reached after last year's unusually dry summer. The weather this summer was often wet but was too cool to promote rapid growth and sporulation of this fungus and therefore the incidence spot blotch was slight. Net blotch-like symptoms were prevalent on some later plantings of Loyola barley but isolations indicated that ***B. sorokiniana*** rather than ***Pyrenophora teres*** Died. Drechsl. was present. Isolates of ***B. sorokiniana*** from these leaves gave typical spot blotch symptoms when used to inoculate greenhouse-grown Loyola barley. It is suggested that the net blotch-like symptoms were an atypical expression of ***B. sorokiniana*** infection. Brown flecking and spotting symptoms appeared on certain barley cultivars particularly Herta between growth stages 5 and 9 (Feekes-Large Scale). These were not attributed to a pathogen. We consider them to be physiological in origin. On Laurier barley large chlorotic areas developed on the leaves. The centre of the lesions was marked by a necrotic spot. Further necrotic spots appeared towards the margins of these areas. These symptoms were not observed on other barley cultivars but were widespread on Laurier barley in the Maritimes and were also reported in Ontario (W.L. Seaman, personal communication). The cause of these symptoms has not been determined.

### Oats

***Septoria avenae*** Frank infection of oats was widespread in all observed areas of the Maritimes and appeared to

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be less affected by altered weather patterns than other cereal leaf diseases. Overall yield loss attributed to this disease was considered to be substantial.

Barley yellow dwarf was severe in northern New Brunswick but of infrequent occurence in Nova Scotia and P.E.I. Low levels of the disease in Nova Scotia and Prince Edward Island were attributed to reduced aphid populations early in the spring due to unfavourable weather conditions. Seeding dates in northern New Brunswick are later than those in other areas of the Maritimes and this may have also attributed to the severity of the disease there.

Wheat

Mildew (*E. graminis)* was recorded in most fields of spring wheat, but it was not severe except in areas where winter wheat was present nearby. ***Septoria nodorum*** (Berk.) was moderate to severe on leaves and glumes. ***Fusarium culmorum*** (W.G. Smith) Succ. was frequently identified causing some culm rot, moderate to severe head blight and in some instances node breakage. Both ***Septoria*** and ***Fusarium*** were considered to be more severe than in previous years.

Mildew and septoria were observed on winter wheat but were not considered to be severe.

Fall Rye

This crop is usually relatively disease-free, however, in early July, sooty moulds, caused by ***Cladosporium*** sp. and ***Alternaria*** sp. were present on leaves and heads of fall rye. Ergot-infected heads were infrequently found.