2023 Corn Disease Survey

Manitoba Corn Disease Survey Results

A corn disease survey was conducted across Manitoba in June and September of 2023. Crop disease surveys are important for documenting the severity and geographical distribution of various diseases. Results from disease surveys provide warning about new diseases and help to prioritize where future research is needed.

Method

A total of 66 fields were surveyed across Manitoba to document the prevalence (% of fields having infection) and incidence (average % of plants showing infection within infected fields) of various corn diseases. Fields were surveyed twice during the growing season, in June at the V2-5 stage, and in September around the beginning of crop maturity.

Spring Survey

Plants were visually assessed for the presence of damping-off and seedling blight, and systemic Goss's wilt. Damping-off and seedling blight are caused by many soil and seed borne fungi including *Pythium* spp., *Fusarium* spp., and *Rhizoctonia* spp. Goss's wilt is a bacterial disease of corn caused by *Clavibacter michiganensis* subsp. *nebraskensis.* Goss's wilt can cause both foliar symptoms and systemic wilt of corn. While the systemic phase of Goss's wilt is uncommon, symptoms would be best observed early in the growing season. Surveyors examined 100 plants in each field along a "W" pattern, where the surveyed locations were at least 50 paces apart and 100 m from field edges. The presence or absence of disease was noted for each of the 100 sampled plants per field. If surveyors were unsure whether a plant was infected with damping-off/seedling blight, plant samples were sent to the Crop Diagnostic Lab for confirmation.

Fall Survey

Plants were visually assessed for the presence of Goss's wilt (*Clavibacter michiganensis* subsp. *Nebraskensis)*, common rust (*Puccinia sorghi)*, common smut (*Ustilago maydis)*, head smut (*Sphacelotheca reiliana)*, and stalk rot. In each field, 50 plants were surveyed in a "W" pattern, where the five points of the "W" were at least 50 paces apart and 100 m from field edges. The presence or absence of disease was noted for each of the 50 sampled plants per field, except for Goss's wilt. Goss's wilt was simply recorded as present or absent for each field following an assessment of plants at the field edges and from within the field. If surveyors were unsure whether a plant was infected with Goss's wilt, leaf samples were sent to the Crop Diagnostic Lab for confirmation.

Results

The spring disease survey found damping-off and seedling blight in 15 out of 66 fields surveyed, for an average prevalence rate of 23% (Table 1). Most of these fields were located in the eastern region, where damping-off and seedling blights were found in 8 out of 11 fields surveyed. Two plants with symptoms of Goss's wilt were observed during the spring survey, one in the central region and one in the southwest. The plant in the central region was submitted to the diagnostic lab where it tested positive for the causal agent of Goss's wilt.

At crop maturity Goss's wilt was found in 39% of the fields sampled, making it the most common disease found in the fall survey. These results are consistent with the 2020 corn disease survey, which found Goss's wilt in 41% of fields surveyed. Common smut, head smut, and stalk rot were found in 26%, 21%, and 15% of fields surveyed, respectively (Table 1).

Manitoba

Table 1. Results of the 2023 corn disease survey. Prevalence (% of fields having infection) and incidence (average % of plant showing infection within infected fields) for each region and for all fields surveyed.

Region	Damping-off and seedling blight	Common Rust	Common Smut	Head Smut	Stalk Rot	Anthracnose Stalk Rot	Goss's Wilt
Central (41 fields)							
% Prevalence	12	7	22	7	10	2	29
% Incidence	3	11	3	5	9	2	n/a
Eastern (11 fields)							
% Prevalence	73	9	18	18	18	0	82
% Incidence	7	10	4	2	4	0	n/a
Interlake (5 fields)							
% Prevalence	0	0	60	100	0	0	40
% Incidence	0	0	3	6	0	0	n/a
Southwest (9 fields)							
% Prevalence	22	0	33	44	44	0	33
% Incidence	2	0	3	5	10	0	n/a
Manitoba (66 fields)							
% Prevalence	23	6	26	21	15	2	39
% Incidence	5	11	3	5	8	2	n/a

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Contact Us

Survey results compiled by the Manitoba Agriculture Cereal Specialist.

For more information, contact Manitoba Agriculture:

- Online www.manitoba.ca/agriculture
- Email crops@gov.mb.ca
- Phone 1-844-769-6224