



2022 Pulse Pest Survey Results

January, 2023

Surveys of pests in pulse crops are important for monitoring for new diseases and insects, as well as to follow the severity of pests over time. In 2022 pulse crops were surveyed across Saskatchewan for foliar and root diseases as well as insects in crop. A seed quality survey of commercial seed test labs was also initiated to evaluate diseases on seed samples from the 2022 production year.

Disease Surveys

Disease assessments were made by visually examining plants from predetermined sampling patterns within each field. It is important to note that diagnosis of foliar disease was only based on visual symptoms in the field and no lab confirmation was carried out (except where noted).

Incidence is calculated as the percentage of the total number of plants assessed that have symptoms of the disease. For example – 76 out of 100 plants or 76% incidence within a field which is then averaged over the fields evaluated in each region.

Prevalence is a measure of the presence or absence of the disease in the field and is expressed based on the percentage of fields positive for that symptom. For example – Anthracnose symptoms are found in 31 out of the 36 lentil fields which equates to 86.1% prevalence.

Lentil

A total of 55 lentil field were surveyed for the presence and incidence of diseases in Saskatchewan. The survey was completed between July 04 to August 11 and ranged in staging from R3 (early pod) to R7 (physiological maturity). The number of surveyed crops was highest in Southwest Saskatchewan, with 25 of the 55 crops surveyed located in this region. The distribution of the surveyed crops across the rest of the province was as follows: 13 (West Central), 11 (Southeast), 5 (East Central) and 1 (Northwest). Disease assessments were made by visually examining 20 plants from each of 5 sites along a W-pattern in each field. Individual sites were located at least 50 m from the field edge and at least 30 m apart. Crops were assessed for the incidence of anthracnose (*Colletotrichum truncatum*), ascochyta blight (*Ascochyta lentis*), sclerotinia stem and pod rot (*Sclerotinia sclerotiorum*), botrytis stem and pod rot (*Botrytis cinerea*) and stemphylium blight (*Stemphylium* spp.) and the prevalence of root rot complex (*Fusarium* spp./*Pythium* spp./*Rhizoctonia solani*/*Aphanomyces euteiches*) and all previously listed diseases. Incidence is calculated as the percentage of plants assessed (out of 100 plants total per crop) with symptoms of the disease, while prevalence is a measure of the presence or absence of the disease in the field. All disease assessments were made based on visual symptoms observed in the field.

Table 1. Prevalence of Disease in Saskatchewan Lentil Crops Surveyed in 2022

Region ¹	Number of Fields Surveyed	Prevalence (%) (number of fields with symptoms)					
		Root rot complex	Anthracnose	Ascochyta blight	Sclerotinia stem & pod rot	Botrytis stem & pod rot	Stemphylium Blight
SW	25	52 (13)	64 (16)	0 (0)	4 (1)	0 (0)	52 (13)
SE	11	73 (8)	100 (11)	0 (0)	0 (0)	0 (0)	73 (8)
EC	5	60 (3)	60 (3)	0 (0)	60 (3)	0 (0)	0 (0)
WC	13	85 (11)	100 (13)	23 (3)	15 (2)	0 (0)	46 (6)
NW	1	100.0 (1)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Overall	55	65 (36)	78 (43)	5 (3)	11 (6)	0 (0)	49 (27)

¹Region: Southwest (SW); Southeast (SE); East Central (EC); West Central (WC); Northwest (NW).

Source: Saskatchewan Pulse Disease Situation Report 2022 submitted to Western Forum on Pest Management by Alireza Akhavan from Saskatchewan Ministry of Agriculture

Table 2. Disease Incidence in Saskatchewan Lentil Crops Surveyed in 2022

Region	Incidence of disease (%) (Incidence in only infected fields) ²				
	Anthracnose	Ascochyta blight	Sclerotinia stem & pod rot	Botrytis stem & pod rot	Stemphylium Blight
SW	18 (27)	0 (NA)	0.5 (13)	0 (NA)	3 (5)

SE	61 (61)	0 (NA)	0 (NA)	0 (NA)	5 (7)
EC	19 (32)	0 (NA)	5 (9)	0 (NA)	0 (NA)
WC	17 (17)	0.3 (1)	0.2 (1)	0 (NA)	0.8 (2)
NW	0 (NA)	0 (NA)	0 (NA)	0 (NA)	0 (NA)
Overall	26 (33)	0.1 (1)	0.8 (7)	0 (NA)	2.5 (5)

²Average incidence of disease for all crops surveyed (disease incidence averaged across only fields with disease symptoms)

Source: Saskatchewan Pulse Disease Situation Report 2022 submitted to Western Forum on Pest Management by Alireza Akhavan from Saskatchewan Ministry of Agriculture

Root rot complex symptoms were present in 65% of the surveyed crops (Table 1). Across the regions, prevalence ranged from 52% to 100% of fields.

Anthracnose was the most prevalent foliar disease in 2022 and was identified in 78 % of the surveyed crops with an overall average incidence of 26 % (Tables 1 and 2). The incidence of anthracnose was highest in Southeast Saskatchewan (61%) followed by the East Central (19%).

Stemphylium blight was observed in 49 % of crops with an average incidence of 2.5 % (Tables 1 and 2). Across the regions the prevalence of stemphylium blight ranged from 0% (Northwest and East Central) to 5% (Southeast) of surveyed crops.

Sclerotinia stem and pod rot was observed in 11 % of crops with an average incidence of 0.8% (Tables 1 and 2). Across the regions the prevalence of sclerotinia stem and pod rot ranged from 0% (Southeast and Northwest) to 60% (East Central) of surveyed crops.

Ascochyta blight was rare and only observed in three fields in West Central region with an average incidence of 1% in fields with affected plants. It is important to note that diagnosis was only based on visual symptoms in the field. Plants having visual symptoms that were consistent with ascochyta blight were not confirmed with additional testing.

Soybean

A total of 18 soybean fields were surveyed and assessed for disease incidence and severity in Saskatchewan. The survey was completed between August 19th and September 16th while crops were between growth stage R4 (Full pod) to R8 (Full maturity). All surveyed fields were in the Southeast Saskatchewan. Ten plants were assessed for the incidence and severity of diseases at five sites located in a W-pattern (at total of 50 plants per field). Individual sites were at least 50m apart and located at least 50m from the field edge. Each of the 50 plants were assessed for the presence of the following diseases: brown spot (*Septoria glycines*), bacterial blight (*Pseudomonas savastanoi* pv. *glycinea*), bacterial pustule (*Xanthomonas axonopodis* pv. *glycines*), downy mildew (*Peronospora manshurica*), white mould (*Sclerotinia sclerotiorum*), pod and stem blight (*Diaporthe sojae*), anthracnose (*Colletotrichum* spp.), frogeye leaf spot (*Cercospora sojae*) and phytophthora root rot (*Phytophthora* spp.). Disease severity was also assessed for brown spot, bacterial blight and downy mildew using a 0-5 rating scale with 0 meaning no disease present and five meaning that there were severe symptoms with defoliation. The prevalence of iron chlorosis, sudden death syndrome (*Fusarium virguliforme*), soybean rust (*Phakopsora meibomia* and *P. pachyrhizi*), charcoal rot (*Macrophomina phaseolina*), northern stem canker (*Diaporthe caulivora*) and soybean cyst nematode (*Heterodera glycines*) was estimated by recording the presence or absence in the field. All disease assessments were made based on visual symptoms in the field. Samples were collected and submitted to Dr. Yong Min Kim to test for the presence of root rot pathogens.

The most prevalent diseases in Saskatchewan were bacterial blight and brown spot. Bacterial blight was present in all fields surveyed with an average incidence of 94 % (Table 3). The average disease severity was 2.8 as rated on a 0 to 5 rating scale. Symptoms consistent with brown spot were also observed in all the surveyed crops with an average incidence of 81 % and average severity was 1.5 as rated on a 0 to 5 rating scale. Symptoms suggesting bacterial pustule were found in five fields from which one was received and confirmed at the Crop Protection Laboratory. Frog eye leaf spot and downy mildew were not found in 2022. Symptoms suggesting phytophthora root rot were found in five fields and were submitted to Dr. Yong Min Kim for further analysis. No additional diseases including white mould, anthracnose, soybean rust, northern stem canker, sudden death syndrome and charcoal rust were observed. Iron chlorosis was also not seen this year.

Table 3. Prevalence, Incidence, and Severity of Bacterial Blight, Brown Spot, Frog Eye Leaf Spot, and Downy Mildew in SK Soybean Fields in 2022

Region	Prevalence (%) ¹	Average Incidence in only infected fields (%) ²	Average Severity ³
Bacterial blight	100	94	2.8
Brown spot	100	81	1.5
Frog eye leaf spot	0	0	0
Downy mildew	0	0	0

¹Prevalence = the percent of crops surveyed with symptoms of the disease

²Average incidence of the disease averaged across crops with disease symptoms

³Average severity of infected plants averaged across crops with disease symptoms

Source: Saskatchewan Pulse Disease Situation Report 2022 submitted to Western Forum on Pest Management by Alireza Akhavan from Saskatchewan Ministry of Agriculture

Pea

In total, 41 field pea crops were surveyed in Saskatchewan in 2022. The highest number of surveyed crops were in East Central and Southwest Saskatchewan with 11 and 10 of the surveyed field located in these two regions. The distribution of fields across the six regions in the province is described in Table 3. The survey was completed between July 08 and August 11. Crop growth stage ranged from R2 (beginning bloom) to R6 (mid maturity). Disease assessments were made by examining 10 plants from each of 5 sites along a W-pattern with at least 30m between sampling sites. Crops were assessed for the incidence of root rot complex (*Aphanomyces euteiches*, *Fusarium* spp., *Rhizoctonia* spp., and *Pythium* spp.), Mycosphaerella/Ascochyta complex [*Peyronellaea* (*Mycosphaerella*) *pinodes*, *Ascochyta pisi* and *Phoma medicaginis* f.sp. *pinodella*], Downy Mildew (*Peronospora viciae*), white mould (*Sclerotinia sclerotiorum*) and bacterial blight (*Pseudomonas syringae* pv. *pisi*). The severity of the root rot complex and mycosphaerella/ascochyta blight

complex was assessed for each plant using the rating scales in Tables 4 and 5. All disease assessments were made based on visual symptoms in the field. No additional testing was conducted to confirm diagnosis.

Table 4. Severity scale for root rot complex of field pea (modified from Chatterton et al. 2019)

Rating	Lesions	% affected	Pruning
1	none	0	0
2	Small (0	0
3	Small coalescing lesions approx. 180° around stem	10-20%	0
4	Lesions extending and completely encircling stem	20-95%	5-20%
5	Increasingly discolored and extended epicotyl lesions	100%	20-50%
6	Epicotyl lesions encircling stem extending up to 2 cm	100%	50-80%
7	Tap root (including epicotyl) completely lesioned	Dead	Dead

Table 5. Severity rating scale for mycosphaerella/ascochyta blight leaf rating of field pea (modified from Liu et al. 2013)

Rating	Description
1	no disease
2	mild to moderate disease on less than 5% of plant
3	moderate to severe disease on 5-20% of plant
4	moderate to severe disease symptoms on 20-50% of plant
5	moderate to severe disease symptoms 50-80% of plant
6	disease on all or most of the plant, plant stunted but alive
7	plant stunted/dying

Root rot complex was present in 95% of the surveyed field pea crops with an average incidence of 60% across the province (Tables 3 and 4). Average disease incidence ranged from 41% (East Central) to 100% (Northwest). Disease severity was generally low with an average severity of 2.3 across the province. Mycosphaerella/Ascochyta complex was present in all the surveyed fields and was assessed based on per cent of plant affected. Average incidence was 60% and ranged from 42% (Northeast) to 72% (East Central) and average severity was quite low at 1.8 across the province. Downy mildew was present in 39% of the surveyed fields. Average incidence was 11% and ranged from 0% (West Central) to 32% (Northwest). White mould was present in 5% of the surveyed fields with an average incidence of 0.2%. Symptoms consistent with bacterial blight were present in 41% of crops. Bacterial streaming test was conducted with a microscope on representative samples from a portion of assessed fields, but no additional testing was performed to identify/confirm the causal organism. Presence of this disease may be influenced by crop damage due to adverse weather in these regions.

Table 6. Prevalence of Root Rot Complex, Mycosphaerella Blight, Ascochyta Foot Rot, White Mould, and Bacterial Blight in Saskatchewan Field Pea Crops in 2022

Region	Number of Fields Surveyed	Prevalence (%) (number of fields with symptoms)			
		Root rot complex	Mycosphaerella/Ascochyta complex	White mould	Bacterial blight
SE	100 (7)	100 (7)	0	100 (7)	37.5 (3)
SW	100 (10)	100 (10)	0	40 (4)	63.6 (7)
EC	82 (9)	100 (11)	9 (1)	9 (1)	14.3 (1)
WC	100 (7)	100 (7)	0	29(2)	0(0)
NE	100 (4)	100 (4)	25 (1)	25 (1)	0
NW	100 (2)	100 (2)	0	100 (2)	0
Province	95 (39)	100 (41)	5 (2)	41 (17)	22.9 (11)

Source: Saskatchewan Pulse Disease Situation Report 2022 submitted to Western Forum on Pest Management by Alireza Akhavan from Saskatchewan Ministry of Agriculture

Table 7. Incidence and Severity of Field Pea Diseases in Saskatchewan in 2022

Region	Root rot complex	Mycosphaerella/Ascochyta complex	White mould	Bacterial Blight
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	Average Incidence (%) ¹	Average Severity ²	Average Incidence (%) ¹	Average Severity ²	Average Incidence (%) ¹	Average Incidence (%) ¹
SE	72	2.4	58	1.6	0	23
SW	67	2.3	63	1.9	0	16
EC	41	1.8	72	2	0.5	8
WC	66	2.6	47	1.6	0	16
NE	45	1.7	42	1.5	1	18
NW	100	4.9	65	2	0	48
Province	60	2.3	60	1.8	0.2	17

²Severity scale based on 1 (no disease) to 7 (severely infected or plant dead) rating scales specific to the diseases evaluated (see Table 5 for details)

Source: Saskatchewan Pulse Disease Situation Report 2022 submitted to Western Forum on Pest Management by Alireza Akhavan from Saskatchewan Ministry of Agriculture

Chickpea

Chickpea fields were surveyed as part of the ongoing Chickpea Health Issue investigation. This survey was led by Dr. Michelle Hubbard, Research Scientist with Agriculture and Agri-Food Canada in Swift Current. 81 chickpea fields across 31 RMs were assessed in July through August and rated on a scale of 0–5 for aboveground symptomology of chickpea health issue. Samples were collected and submitted to Dr. Hubbard’s research team for further analysis. Field histories were obtained on many of the fields included in the survey to try to better understand possible connections between chickpea health issue severity and environmental conditions and management factors. More information on the Chickpea Health Issue and analysis performed to date can be found in the **Chickpea Plant Health Updates**.

Faba Bean

An informal survey of seven faba fields in northern Saskatchewan was done to identify and document disease presence in faba bean fields through the submission of leaf samples to a commercial lab for identification of pathogens via PCR analysis. Results from this disease ID sampling program revealed a range of disease symptoms including typical *Ascochyta* blight lesions as well as large necrotic patches that could potentially be attributed to chocolate spot, *Stemphylium* blight or *Ascochyta* blight in several of the samples. No *Sclerotinia* was detected in any samples and only one sample was positive for *Botrytis fabae*, while all but one sample were positive for *Ascochyta fabae*. *Alternaria* was also present in all but one sample. Unfortunately, this sample program only represents a very limited number of samples and fields but there will opportunity to run the program again during the 2023 field season.



Figure 1. Faba bean plant exhibiting symptom of disease.

Source: Federated Co-operatives Limited

Insect Surveys

Various insect surveys were coordinated by Saskatchewan Ministry of Agriculture and results are presented below along with comments.

Grasshoppers (various species)

Grasshopper numbers increased again from 2022 and many incidents of spraying were reported throughout the province and in many crops. Significant populations were reported in South Central, Southwestern, and Southeastern regions in several crops. Two-striped grasshoppers were widespread with some localized reports of large lesser migratory grasshopper, primarily in far-southern RMs. Heavy populations (30 m⁻²) were detected in the Southwest and West Central (RMs, 255, 256, 257, and 286). Potentially economically damaging populations (10 – 29.9 m⁻²) were detected at an additional 31 sites in Southwest, Southeast, South Central, East Central and West Central RMs.

Moderate counts (5 – 9.9 m⁻²) were found at 181 sites throughout the province. No grasshoppers were reported from only 10 of 1134 sites. The long, dry, warm late summer and fall in many parts of the province meant good conditions for grasshopper egg laying. This means that continued pressure from grasshoppers in many regions is anticipated in 2023.

Pea Aphids (*Aphididae Acyrthosiphon pisum* (Harr.))

Lentil, pea, and faba bean are all hosts to pea aphids and issues across all three crops were significant in 2022.

The Saskatchewan Insect Report, submitted to the Western Forum on Pest Management and prepared by James Tansey, Provincial Specialist of Insect/Vertebrate Pest Management, indicates multiple cases of reported low efficacy of group 3 insecticides. There were also observations of increased populations with increased temperatures under relatively humid conditions.

Lygus spp.

The survey was performed throughout the province in collaboration with the Saskatchewan Pulse Growers, the Saskatchewan Ministry of Agriculture and the Prager Lab at the University of Saskatchewan. Ten samples per field were collected using sweep nets at the early podding stage of the faba. The RM number where the samples were taken during this year are 32, 277, 284, 398, 426, 427, 428, 437, 459, 461, 488, 501, and 588.

2023 Grasshopper Forecast

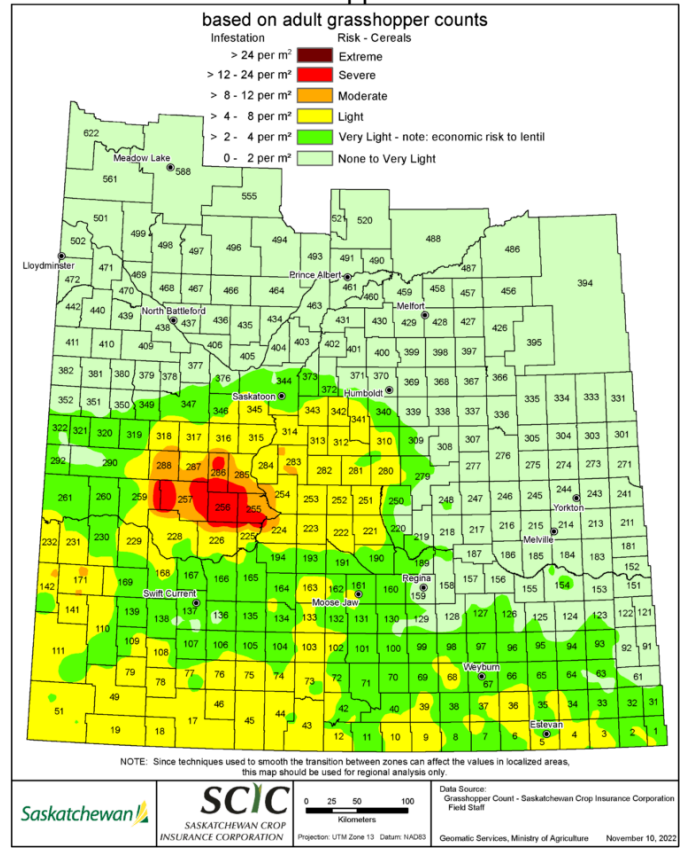


Figure 2. 2022 Saskatchewan Grasshopper Forecast Map.

Source: Based on 2022 grasshopper count survey data, [Saskatchewan Ministry of Agriculture](https://www.saskatchewan.ca/agriculture)

The faba survey results indicate four species of *Lygus*: *L. lineolaris*, *L. elisus*, *L. borealis*, and *L. keltoni*. The most abundant spp. was *L. lineolaris* with 359 adults, followed by *L. borealis* (104), *L. keltoni* (38) and *L. elisus* (24); the total number of nymphs was 72.

Comparison of the 2022 results with the previous years of the faba bean survey (2017, 2019, 2020, 2021) to identify the incidence and severity of *Lygus* infestations and this comparison suggests that *Lygus* pressure appears to be increasing and could be associated with the high temperature, less humidity, and windy directions. Continuing with the survey across Saskatchewan is necessary to get more information and identify the incidence and severity of *Lygus* infestations in faba bean and study a possible correlation with weather conditions.

Pea Leaf Weevil (*Sitona lineatus* (L.))

The 2022 survey was coordinated by Saskatchewan Ministry of Agriculture and with the assistance of AAFC, Saskatoon. The survey of pea crops covered most of the pea-growing regions of the province. Although faba bean is also a host the survey is limited to field pea but there were reports of pea leaf weevil damage in faba bean grown in Northeast Saskatchewan. Establishment detected north to North Battleford and Tisdale regions and continued establishment detected to the Manitoba border.

The 2022 survey indicated a significant increase in eastern growing regions, particularly the Northeast.

Neonicotinoid seed treatments remain the best protection against the pea leaf weevil in field peas when numbers warrant.

Seed Quality Survey

The interim results (as of January 5, 2023) of commercial plate tests for seed-borne pathogens of 245 field pea, 297 lentil, and 35 chickpea samples are summarized in Tables 8-9. The eight-year summary of the seed quality survey in Table 9 shows 2022 interim data compared to 2015- 2021 final results. The number of pathogen-free samples (PFS) continues to be very high across key seed-borne diseases evaluated in field pea, lentil, and chickpea samples with only *Ascochyta* in field pea and chickpea at levels below 75%. Alternatively, 98.3% of lentil samples assessed for *Ascochyta* were pathogen-free.

Generally, mean severity of infected samples were inline with final seed survey results from 2021 with only *Ascochyta* in chickpea tracking significantly higher in current interim results. The 2022 interim data for *Ascochyta* in chickpea indicates a lower proportion of PFS and similar mean infection level relative to 2015-2021 data. *Ascochyta* in lentil is on par with the previous seven-year average. Percent PFS for *Ascochyta* in field pea is lower than the previous seven-year average but mean infection level is also reduced. Although most pea samples have detectable levels of *Ascochyta*, this has also been the case during the 2015, 2016, 2019, and 2020 growing seasons.

Anthraxnose in lentil is showing a reduced level of PFS and increased mean infection compared to the previous seasons. Anthracnose in lentil is not considered high risk for seed-to-seedling transmission but should be considered when planting infected seed into clean fields as it could be a source of inoculant.

[Read the fact sheet](#) to learn more about seed testing and assessing seed lot quality.

Table 8. 2022 Saskatchewan Seed Sample Results by Crop District for Seed-Borne *Ascochyta* and Anthracnose

Crop District	Lentil				Field Pea		Chickpea	
	Ascochyta		Anthraxnose		Ascochyta		Ascochyta	
	PFS ¹	Mean ²	PFS	Mean	PFS	Mean	PFS	Mean
	(%)							
1A	100	0	25	1.5	20	4	-	-
1B	-	-	-	-	71.4	2.5	-	-
2A	100	0	61.1	2.3	66.7	0.7	33.3	2.5
2B	100	0	76.9	1.3	100	0	66.7	1
3AN	100	0	83.3	0.3	-	-	50	1.5
3AS	97.6	0.3	75	1.4	25	0.8	14.3	4.5
3BN	100	0	80.6	0.8	50	2.3	60	0.3
3BS	100	0	87.5	0.3	100	0	-	-

Saskatchewan Pea Leaf Weevil Survey - 2022

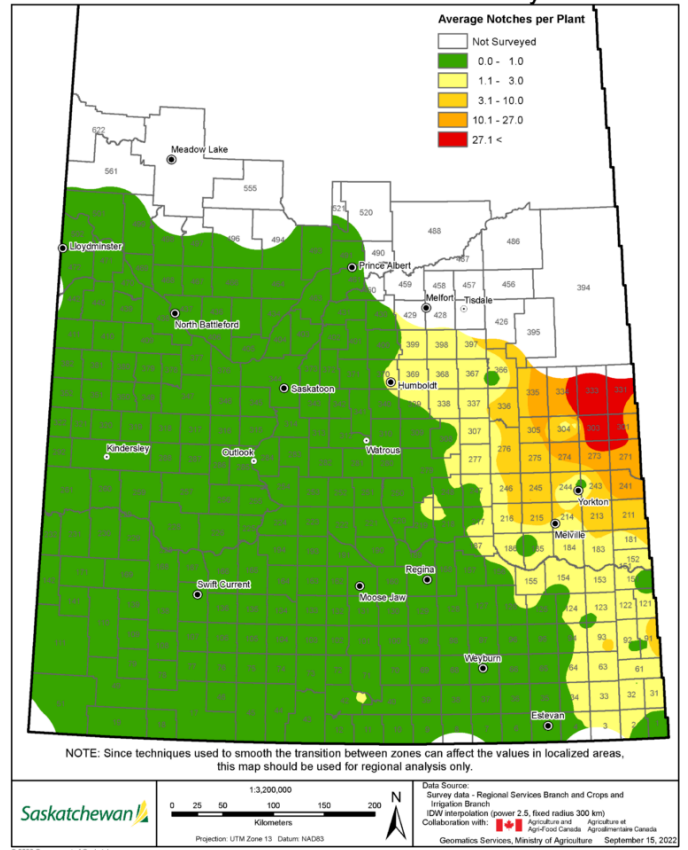


Figure 3. Findings of the 2022 Saskatchewan Pea Leaf Weevil Survey.
Source: [Saskatchewan Ministry of Agriculture](#)

4A	100	0	100	0	-	-	-	-
4B	100	0	87.5	0.4	72.7	1	25	0.3
5A	100	0	0	1.4	0	1.5	-	-
5B	-	-	-	-	16.7	1.1	-	-
6A	100	0	61.9	0.9	54.2	1.3	-	-
6B	96.1	0.3	74.5	1	30.6	1.5	100	0
7A	98.1	0.3	82.6	0.5	27.3	0.8	50	0.5
7B	90	0.3	90	1.5	38.9	1.4	100	0
8A	100	0	0	1	0	1.7	-	-
8B	100	0	100	0	23.1	1	-	-
9A	100	0	100	0	33.3	1.3	-	-
9B	100	0	100	0	20	3.5	-	-
Average	98.3	0.3	76.4	1.1	36.3	1.5	51.4	2.1

¹ PFS – percent of samples that are pathogen-free (pathogen-free samples)

² Mean – average infection level of samples with disease

Source of interim seed quality data for 2022: Prairie Diagnostic Seed Lab, 1105 Railway Ave., Weyburn, SK; 20/20 Seed Labs Inc., 507 – 11th Ave., Nisku, AB; Discovery Seed Labs Ltd., 450 Melville St., Saskatoon, SK

Table 9. Eight-Year Summary of Pulse Seed Samples Tested at Accredited Labs from Seed Grown From 2015-22 in Saskatchewan (2022 data is interim results as of January 5, 2023)

Crop	Pathogen	2015		2016		2017		2018		2019		2020		2021		2022 (int.)	
		PFS ¹	Mean ²	PFS	Mean	PFS	Mean	PFS	Mean	PFS	Mean	PFS	Mean	PFS	Mean	PFS	Mean
(%)																	
Lentil	Ascochyta	98.5	0.1	97.8	0.4	98.1	0.9	98.0	0.4	95.5	0.8	97.9	0.5	99.3	0.4	98.3	0.3
	Anthraxnose	72.4	1.0	60.4	0.8	95.1	0.7	94.1	0.5	89.2	0.9	85.3	1.2	97.2	0.9	76.4	1.1
	Botrytis	54.8	1.8	14.8	3.3	90.3	1.1	96.2	1.0	93.2	1.0	95.9	0.8	98.5	0.5	99.7	0.3
	Sclerotinia	90.3	0.4	33.3	1.0	95.4	0.8	97.7	0.5	96.0	0.7	97.8	0.5	99.8	0.3	97.3	0.4
Pea	Ascochyta	36.5	2.4	8.4	5.4	66.4	1.6	59.0	2.4	36.3	4.7	33.9	2.8	75.9	1.2	36.3	1.5
	Botrytis	74.8	1.6	61.1	0.9	93.3	0.6	99.1	0.9	93.6	1.0	93.6	0.8	99.5	0.6	98.3	0.7
	Sclerotinia	90.6	0.3	78.3	0.7	98.5	0.4	99.2	0.6	99.0	0.6	99.1	0.6	100.0	0.0	98.7	0.7
Chickpea	Ascochyta	40.0	4.1	65.6	4.7	97.2	0.6	74.9	1.2	51.3	3.2	44.1	3.2	71.6	0.7	51.4	2.1
	Botrytis	42.4	3.8	37.0	8.4	100.0	0.0	96.3	1.1	86.6	1.9	87.1	1.1	96.7	0.4	100.0	0.0
	Sclerotinia	83.3	0.5	74.1	2.0	100.0	0.0	98.1	2.2	89.8	0.9	99.3	0.3	98.7	0.7	100.0	0.0

¹ PFS – percent of samples that are pathogen-free (pathogen-free samples)

² Mean – average infection level of samples with disease

Source: Saskatchewan Pulse Growers

To understand the risks and potential damage associated with these pests, the Ministry of Agriculture and its partners monitor the presence, abundance and impact of important crop pests in Saskatchewan. This information is used to build forecast maps and make recommendations for control. Data from the pest surveys are archived and used as a reference to see historical trends that can be used to guide research initiatives or identify changes in pest pressure. Pest-related research is also supported through pest surveys via the collection of samples used by researchers in studies.

To participate in the survey program enroll your farm today via [this online sign-up form](#).

Acknowledgements

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