

Summary of Insects on Crops in Manitoba in 2014

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Abbreviations used: The following abbreviations will be used in this document to indicate the following agricultural regions in Manitoba; NW=Northwest, SW=Southwest, C=Central, E=Eastern, I=Interlake.

Estimated acres: Estimated acres grown in Manitoba in 2014 (shown in brackets under each commodity title) are from the Manitoba Agricultural Services Corporation (MASC) 2014 Variety Market Share Report. The symbol ↑ indicates an increase in acres from 2013, whereas ↓ indicates a decrease in acres from 2013.

Summary: Flea beetles in canola, cutworms, and grasshoppers were the insects of greatest concern in Manitoba crops in 2014. Lygus bugs were at economic levels in some canola fields in late-July and August. Some insects that blow or migrate into Manitoba, such as diamondback moth, armyworms, and soybean aphids, were present and concerns in localized areas, but not widespread problems across Manitoba.

Small Grain Cereals

**(Wheat (spring)-2,522,819 acres↓ + 1,850 acres organic↓; Wheat (Winter)-408,796↓;
Barley-329,036 acres↓; Oats-350,059 acres↓ + 2,749 acres organic↓; Fall Rye-58,390 acres↓;
Triticale-5,214 acres↑)**

Wireworms: There were reports of wireworm damage to winter wheat, spring wheat, barley and corn. Most reports of wireworm damage in cereals were from eastern or Central Manitoba.

Cutworms: Some high populations of cutworms in Central Manitoba were reported. Patches of a winter wheat field with high levels of dingy cutworm were reseeded. In many fields, dingy and redbacked cutworms were generally the dominant species, although some darksided cutworms were found as well. Some high levels of variegated cutworm (*Peridroma saucia*) were found in wheat in Eastern Manitoba in mid-June.

Wheat midge (*Sitodiplosis mosellana*): Wheat midge was not a major concern in 2014. In some regions, a lot of wheat was already flowering by the time of wheat midge emergence.

Midge Tolerant varieties: There was a decrease in acres seeded to midge tolerant varieties in Manitoba in 2014, compared to 2013. The wheat midge resistant variety blends CDC Utmost VB, Vesper

VB, Unity VB, and Goodeve VB were seeded on about 74,128 acres, about 3.3% of the red spring wheat acres in Manitoba in 2014 (based on MASC estimates). Smaller amounts of Fieldstar VB and Shaw VB were also grown. About 236 acres of the prairie spring wheat Glencross VB were seeded.

Sap Feeders

Aphids: There were no reports of aphids reaching economic levels in small grains.

Defoliators

Grasshoppers: Grasshoppers were a concern in or around many fields of small grains. Some field edges were treated where there were higher levels.

Armyworm (*Mythimna unipuncta*): Armyworms were a concern in some small grain fields in Eastern Manitoba, with reports of higher populations around Steinbach and Stead. Some winter wheat in the Steinbach area was sprayed for armyworms in July.

Cereal Leaf Beetle (*Oulema melanopus*): No economic populations of cereal leaf beetle were reported, however, the known range of cereal leaf beetles in Manitoba has expanded south and further east through the Central region of Manitoba. In 2014, cereal leaf beetle larvae were found in fields near Pilot Mound (C), LaRiviere (C), and Roseisle (C). From a field west of Roseisle, 73 larvae were sent to Lethbridge, Alberta to determine if the parasitoid *Tetrastichus julis* (Eulophidae) was present in any of the larvae. None of the 73 larvae were parasitized. *T. julis* were, however, successfully recovered from cereal leaf beetle larvae caught near Treherne (C), where releases of *T. julis* were done in 2013.

A shipment of about 260 adult wasps of the parasitoid *Tetrastichus julis* (Eulophidae) was sent from Lethbridge, Alberta to Carman and released in the field west of Roseisle on July 11th. A second release of about 200 cocoons of cereal leaf beetle that contained *T. julis* (about 5 *T. julis* per cereal leaf beetle cocoon) was done on September 24th near the location of the release on July 11th. Cocoons were buried by placing about 5 cocoons in a hole 1 to 2 cm deep just outside the field. Clusters of about 5 cocoons each were spaced about 10 meters apart.

Corn

(250,401 acres **grain corn**↓; 73,673 acres **silage corn**↓)

Cutworms: Cutworm damage to corn was reported from the Eastern and Central regions in June. Some fields were sprayed for cutworms and a corn crop in the Morris area was reseeded to canola because of damage from cutworms.

Wireworms: Damage from wireworms was reported from some corn fields in the Eastern Region and from corn fields near Shilo (SW).

Seedcorn maggot (*Delia platura*): No damage to corn from seedcorn maggot was reported in 2014.

European corn borer (*Ostrinia nubilalis*): Higher populations of European corn borer were noted in some fields of corn in the Central region, with some insecticide applications occurring.

In 2014, acres of grain corn seeded to *Bt* varieties increased to about 42.9 %, and acres of silage corn seeded to *Bt* varieties was about 15.1%.

Percentage of acres of grain corn and silage corn seeded to *Bt* varieties in Manitoba.

Year	Grain Corn	Silage Corn
2014	42.9	15.1
2013	26.8	13.1
2012	31.2	12.8
2011	40.8	21.2
2010	54.9	17.7
2009	56.3	17.6
2008	58.7	19.0
2007	63.9	10.8

This data is from the Manitoba Agricultural Services Corporation Annual Variety Market Share Reports.

Canola and Mustard

(**Argentine canola**-3,040,491 acres↓; **Rapeseed**-8,647 acres↑; **Mustard**-4,746 acres↑)

Cutworms: Cutworms were a concern in some canola fields in 2014, resulting in some insecticide applications.

Root Maggots (*Delia* spp.): There were no reports of root maggot damage in canola in 2014.

Sap Feeders

Lygus bugs (*Lygus* spp.): There were reports of some canola fields with economical levels of Lygus bugs in late-July and August. Some high levels of Lygus bug in canola were reported from the Swan River valley (NW), and there were high levels in some areas of the Central and Eastern regions of Manitoba.

Aster Leafhopper (*Macrostelus quadrilineatus*): Levels of aster leafhoppers were low and not of concern in canola in 2014.

Swede midge (*Contarinia nasturtii*): Fourteen pheromone-baited traps were set up to trap and determine levels of swede midge in Manitoba in 2014. A total of 4 adult swede midge were collected from the traps. The following table shows where positive trap captures for swede midge occurred:

Positive trap locations and numbers for swede midge in Manitoba in 2014.

Location	Total midge count	Date(s) of trap collection
Sanford	2	1 on June 25; 1 on July 23
Winkler	1	1 on July 9
Dauphin	1	1 on July 21

In addition to those midge caught in the traps, there was also a positive finding of larvae collected from a canola field northeast of Bowsman on August 19.

High or potentially economical levels of swede midge have never been documented in Manitoba.

Defoliators

Flea beetles (*Phyllotreta* spp.): Use of seed treatments containing neonicotinoid insecticides to manage early-season flea beetle populations continues to be common. Feeding damage to young plants at or above threshold levels, and additional use of foliar insecticides, was still reported from all agricultural regions of Manitoba. There are reports of some fields being sprayed with insecticides 2 or 3 times early in the season. Some canola fields in Eastern Manitoba were reseeded because of high levels of damage from flea beetles, and several fields in Central Manitoba were reseeded due to heavy damage from flea beetles or a combination of flea beetle and cutworm damage.

Bertha Armyworm (*Mamestra configurata*): Levels of bertha armyworm were generally low and uneconomical in 2014. The only report of control of bertha armyworm was of about 1 acre of canola that was sprayed for bertha armyworm near The Pas (NW).

Pheromone-baited traps to monitor adult moths of bertha armyworm were set up at 72 locations in Manitoba in 2014. The monitoring period was June 2nd to August 3rd. Cumulative moth counts generally suggested low risk, with only 2 traps catching more than 300 moths and getting to the uncertain risk category. Counts were generally lower than those from 2013, possibly suggesting a decline in the population of bertha armyworm. Table 1 shows the highest trap counts for 2014.

Table 1. Highest cumulative counts of bertha armyworm (*Mamestra configurata*) moths in pheromone-baited traps in Manitoba in 2014.

Nearest town	Region	Trap Count	Risk Category
Altamont	Pembina	587	Uncertain
Tourond	Eastman	310	Uncertain
Roseland	Southwest	267	Low
Ridgeville	Eastman	237	Low
Fannystelle	Red River	219	Low
Darlingford	Pembina	217	Low

Peak trap catches occurred in most traps during early or mid-July.

The highest trap catch in a single week was 260 at a trap near Altamont on the week of July 7-13th.

Diamondback moth (*Plutella xylostella*): Levels of diamondback moth were generally not economical, although there were some insecticide applications for diamondback moth in Eastern Manitoba in mid-June. Levels close to the nominal threshold that is used were also reported from near Altona (C) in late-July, and Southwest Manitoba in early-August.

Pheromone-baited traps for adult moths were set up at 79 locations in Manitoba in 2014. The monitoring period was generally from April 27th to early-June. Highest trap catches were in the eastern part of Manitoba.

Grasshoppers: Grasshopper populations were high in many areas, resulting in some insecticide applications to canola and field edges.

Flax

(Flax-82,416 acres↑ + 821 acres organic flax↓)

Potato aphid (*Macrosiphum euphorbiae*): Aphids were generally not an economical issue in flax in 2014, however a population above the economic threshold was controlled in a flax field in the Southern Interlake.

Sunflowers

(60,104 acres non-oil↑; 26,617 acres oil↓)

Cutworms: Cutworms damage was evident in many fields of sunflowers, and there were reports of control being applied for cutworms in some fields in the Eastern, Central and Southwest region in June. Cutworm damage to sunflowers was also reported from the Southern Interlake. About 80 acres of sunflowers near Sanford (C) were reseeded because of damage from cutworms.

Sunflower beetle (*Zygogramma exclamationis*): No high populations or spraying for sunflower beetles were reported in 2014. The last year that economic populations of sunflower beetle have been reported in Manitoba is 2009.

Seedhead Insects

Some fields of confection sunflowers were treated with insecticides during early flowering to control seedhead insects such as **Lygus bugs** (*Lygus* spp.) and **banded sunflower moth** (*Cochylis hospes*). In most instances *Lygus* bugs were the most common of the seedhead insects of concern. Populations of **Red sunflower seed weevil** (*Smicronyx fulvus*) were low again in most areas this year.

Beans (Dry Edible)

(142,811 acres↑: White pea (navy)-50,273 acres↑, pinto-41,620 acres↑, kidney-17,210 acres↑, black-14,921 acres↑, cranberry-4,242 acres↑, other dry edible-14,545 acres)

Grasshoppers: The headlands of some bean fields were sprayed to control grasshoppers.

Peas (Field)

(55,650 acres↑)

Pea aphids (*Acyrtosiphon pisum*): Aphid levels in peas were generally low, with the exception of a couple of fields.

Soybeans

(1,298,688 acres↑)

Cutworms: Some cutworm control in soybeans was reported in the Central region in fields near Sanford, Roseisle and Cartwright.

Soybean Aphid (*Aphis glycines*): Soybean aphids started to be noted in very low levels in soybean fields the last week in July. Populations generally remained low with the exception of a few fields near Morden (C) and St. Pierre (E).

Spider mites: Spider mites started to be noticed in some fields in August. In most instances populations were not economical, however there was some field border spraying for spider mites in the Central and Eastern regions.

Green Cloverworm (*Hypena scabra*): Green cloverworms was noted in soybeans in the Eastern Region in August, however no economic populations of green cloverworm were reported.

Grasshoppers: Grasshopper populations were high in many areas, resulting in some insecticide applications to soybeans and field edges.

Hemp

(17,453 acres for grain↑)

No insect concerns were reported for hemp in 2014.

Forages and Forage Seed

Alfalfa weevil (*Hypera postica*): Feeding from larvae of alfalfa weevil was noted in some alfalfa fields in the Interlake and Eastern Regions of Manitoba from mid-June through the first 2 weeks of July. Some alfalfa for hay was cut early because of the presence of alfalfa weevil. An alfalfa seed field near Riverton (I) was sprayed to control alfalfa weevil.

Grasshoppers: Grasshoppers were reported to be an issue in some forage fields in the Interlake, and some continuously grazed pastures in the Interlake were reported to be declining in productivity in mid-August because of a lack of rainfall and grasshoppers.

Aphids: A field of seed alfalfa in the Interlake was sprayed twice to control aphids, with poor results. Overuse of the same insecticide grouping may have been a contributing factor.

European skipper (*Thymelicus lineola*): High populations of European skipper were reported in some timothy fields in the Interlake.

Potatoes

Report from: Vikram Bisht, Manitoba Agriculture, Food and Rural Development

Colorado potato beetle (*Leptinotarsa decemlineata*): A few samples of Colorado potato beetles were found in the later part of the potato season; some may have escaped the neonicotinoid insecticides or developed some tolerance. This class of chemistry does not appear to be performing as well as it used to in a few locations.

Potato psyllid (*Paratrioza cockerelli*): Dr. Vikram Bisht is coordinating potato psyllid monitoring in Manitoba as part of a national program being led by Dr. Dan Johnson at the University of Lethbridge. No potato psyllids were found in Manitoba in 2013 and in 2014 (as per preliminary assessment).

Vegetable Crops

Report from: Vikram Bisht, Manitoba Agriculture, Food and Rural Development

European corn borer (*Ostrinia nubilalis*): Some tomato seedlings were damaged by European Corn borers early in the season. European corn borer also caused significant damage to commercial bell peppers late in the season.

Crucifer vegetables: Spring flea beetle (*Phyllotreta* spp.) pressure on Brassica vegetable crops was high.

Carrots and Onions: In 2014, as in 2013 aster leafhopper numbers were significantly lower, resulting in very low level of aster yellows on carrots, as compared to 2012.

Fruit Crops

Report from: Anthony Mintenko, Fruit Specialist, Manitoba Agriculture, Food and Rural Development

Spotted wing Drosophila (*Drosophila Suzukii*): A province wide monitoring program for spotted wing Drosophila occurred from June until the end of October in 2014. Drosophila were identified in traps in raspberry and day-neutral strawberry fields starting the second week of August. Drosophila larva were also identified in raspberry fruit as well. This insect was found approximately two weeks later than in 2013.

Strawberries: Several producers had to control **thrips** in strawberries in mid-June. This was not an issue for many producers but required regular scouting. Producers of day-neutral strawberries had to provide control of **Lygus bugs** and **spotted wing Drosophila** (*Drosophila suzukii*) late summer and early fall.

Raspberries: Raspberry (summer bearing) berries were infested by **spotted wing Drosophila** (*Drosophila Suzukii*), **Lygus bugs** and also **fourspotted sap beetles** (*Glischrochilus quadrisignatus*) very late in the season (early August). They did not caused major economic loss as harvesting was wrapping up by that time.

Stored Grains

Report from: Brent Elliott, Program Officer, Canadian Grain Commission

Rusty Grain Beetle (*Cryptolestes ferrugineus*) remains the most common insect found in stored grain. The number of reported infestations (on farm; terminal elevator surveys) in 2014 is approximately double what was seen in 2013. Much of the increase is thought to be related to the record harvest of 2013 combined with difficulty in moving the crop off farm resulting in grain sitting in bins for longer than normal.

Foreign Grain Beetle (*Ahasverus advena*), like the rusty grain beetle, saw the numbers increase in 2014 relative to 2013. This is due to similar concerns as with the rusty grain beetle (record harvest, more on farm

storage). And with grain being stored over the summer, fungal development in storage bins was higher than usual leading to an increase in foreign grain beetle. There were many cases of misidentification of foreign grain beetle as rusty grain beetle as they are quite similar in appearance.

Lesser Grain Borer (*Rhyzopertha dominica*) is known to occur across Canada though it is rarely encountered in significant numbers. As part of a project with Kansas State University a survey for the lesser grain borer was carried out in several locations across Canada. From a Manitoba perspective it was collected in southeastern Manitoba in limited numbers. It was also collected at other prairie locations confirming that the lesser grain borer does establish populations in the southern parts of the prairies during the summer months. It is not detected during winter survey activities by the Canadian Grain Commission. These results are consistent with the survey results of Agriculture and Agri-Food Canada some years ago. At this point we cannot state that numbers are increasing, only that this serves as a reminder that this serious pest may be encountered in the Canadian prairies.

The general trend for 2014 is an increase in findings of damaging stored grain insect pests. This is consistent with record high harvest and long term storage situations. Producers are urged to monitor their grain regularly while in storage throughout the year.