



Summary of Insects on Crops in Manitoba in 2012

November, 2012

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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 2012 (shown in brackets under each commodity title) are from the Manitoba Agricultural Services Corporation (MASC) 2012 Variety Market Share Report. The symbol↑ indicates an increase in acres from 2011, whereas ↓ indicates a decrease in acres from 2011.

Area seeded increased for many crops in 2012, because close to 3 million acres went unseeded in 2011.

Summary: In cereal crops, armyworms (*Mythimna unipuncta*) were a concern in some areas, and aster leafhopper (*Macrostelus quadrilineatus*) was at very high levels in many fields in late-spring and early-summer. Lygus bugs were at economical levels in some fields of canola and dry beans. Lygus bugs were also controlled in some sunflower fields. There were localized problems with bertha armyworm, *Mamestra configurata* in canola. Diseased bertha armyworms were noted in some locations. High levels of flea beetles, *Phyllotreta spp.*, in canola were a concern in some fields, even though most canola seed had seed treatments containing an insecticide. Levels of zebra caterpillar, *Melanchnra picta*, were abundant in some canola and alfalfa fields. Twospotted spider mite, *Tetranychus urticae*, populations were a concern in some soybean fields late in the summer. Alfalfa weevil (*Hypera postica*) was a concern in many alfalfa fields. Cutworms were a concern in many crops, including canola, corn, sunflowers, soybeans, and flax in May and June. There were high populations of seedcorn maggot (*Delia platura*) in some fields of corn, dry beans, and soybeans.

SMALL GRAIN CEREALS

(Wheat (spring)-2,356,945 acres↑ + 4,036 acres organic↑; Wheat (Winter)-607,734↑+ 1,182 acres organic winter wheat↑; Barley-504,626 acres↑; Oats-463,897 acres↑ + 3,813 acres organic↑; Fall Rye-96,298 acres↑; Triticale-655 acres↑)

Wireworms: There were reports of wireworm damage to wheat from fields near Wawanesa (SW), where a couple of acres of wheat were completely destroyed, and Crystal City (C) and Cartwright (C).

Wheat midge (*Sitodiplosis mosellana*): Wheat midge was not a major concern in 2012. A lot of wheat was seeded early and already flowering by the time of wheat midge emergence. There were some reports of insecticide applied for wheat midge in the Southwest region.

Midge Tolerant varieties: There was an increase in acres seeded to midge tolerant varieties in 2012. The wheat midge resistant variety blends Unity VB, CDC Utmost VB, Goodeve VB and Fieldstar VB were seeded on about 85,848 acres, about 3.9% of the red spring wheat acres in Manitoba in 2012 (based on MASC estimates). Smaller amounts of Vesper VB and Shaw VB were also grown. About 140 acres of the extra-strong wheat Glencross VB were seeded.

Sap Feeders

Aster Leafhopper (*Macrostelus quadrilineatus*): High levels of aster leafhopper were present in many fields of small grains, and many other crops, beginning about mid-May. High populations were common across the agricultural regions of Manitoba. Some fields were treated with insecticide in an attempt to control the leafhoppers.

Aphids: Aphids in small grain cereals were first noticed in mid-June. Populations increased in many fields until about mid-July, after which populations very rapidly decreased. Very high levels of predators, and some parasitized aphids could be found in many of these fields.

Thrips: Thrips levels were generally low and not of concern in small grains.

Defoliators

Armyworm (*Mythimna unipuncta*): Armyworms were an economical concern in many small grain fields, and the biggest defoliating insect concern in small grains. High populations of larvae were present in many fields in July. High populations were reported from many fields in the Eastern, Interlake, and Northwest regions.

Grasshoppers: Grasshoppers were a minor concern in small grains in 2012. Some field edges were treated where there were higher levels.

CORN

(273,257 acres grain corn†; 75,646 acres silage corn†)

Cutworms: Some cutworm damage to corn was reported in the Eastern and Central regions. There were reports of corn fields near Elm creek (C), Starbuck (C), and Eden (C) having insecticides applied to control cutworms.

Seedcorn maggot (*Delia platura*): Some damage to corn seedlings by seedcorn maggot was noted in fields near Winkler (C) and Elm Creek (C).

European corn borer (*Ostrinia nubilalis*): In 2012, acres of grain corn seeded to *Bt* varieties dropped to 31.2 %, and acres of silage corn seeded to *Bt* varieties dropped to 12.8%.

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

Year	Grain Corn	Silage Corn
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.

Some higher populations of European corn borer were noted in a few fields of corn in the Central and Eastern regions.

CANOLA and MUSTARD

(**Argentine canola**-3,611,339 acres↑; **Polish canola**-956 acres↓; **Rapeseed**-13,054 acres↑; **Mustard**-2,876 acres↑)

Cutworms: Cutworms were a problem in many canola fields in 2012. A few canola fields in western Manitoba had areas reseeded because of cutworm feeding, and insecticides were applied to control cutworms in quite a few fields in June.

Wireworms: Some damage to canola from wireworms was noted in fields near Virden (SW) and Dauphin (NW).

Root Maggots (*Delia* spp.): There were no reports of root maggot damage in canola in 2012.

Sap Feeders

Lygus bugs (*Lygus* spp.): Levels of *Lygus* bugs became economical in many canola fields across Manitoba in mid and late-July. Most reports of high populations or insecticide applications for *Lygus* bugs in canola were from the Eastern, Central or Northwest regions. There were some accounts of *Lygus* bug populations in the range of 30 to 60 per 10 sweeps.

Aster Leafhopper (*Macrostelus quadrilineatus*): The amount of canola plants showing visible symptoms of aster yellows was overall much higher than normal in 2012. Higher than normal levels of aster leafhopper were present in many crops in Manitoba, beginning about mid-May.

Defoliators

Flea beetles (*Phyllotreta* spp.): There was some unusually mild weather in March, and striped flea beetles were observed on volunteer canola as early as March 23rd. Use of seed treatments containing neonicotinoid insecticides to manage early-season flea beetle populations continues to be common. Many canola fields were seeded quite early, and situations arose where seed treatments became no longer effective while plants were still seedlings. There were reports of canola fields being sprayed or reseeded because of flea beetle damage as early as mid-May. Reseeding canola because of flea beetle damage was reported from the Central and Southwest regions. Flea beetle damage and foliar insecticide applications were reported from all agricultural regions.

Bertha Armyworm (*Mamestra configurata*): Pheromone-baited traps to monitor adult moths of bertha armyworm were set up at 76 locations in Manitoba in 2012. The monitoring period was June 4th to July 29th. Cumulative moth counts suggested that some areas were at moderate or high risk bertha armyworm being problematic. Table 1 shows the highest trap counts for 2012.

Table 1. Highest cumulative counts of bertha armyworm (*Mamestra configurata*) in pheromone-baited traps in Manitoba in 2012.

Nearest town	Region	Trap Count	Risk Category
Carberry	Southwest	2,351	High
Inglis	Northwest	1,094	Moderate
Baldur	Central	985	Moderate
Carberry	Southwest	813	Uncertain
Durban	Northwest	756	Uncertain

Peak trap catches occurred in most traps during the last week of June or early-July, depending on the region.

The highest trap catch in a single week was 1,500 at a trap near Carberry on the week of June 25-July 1st.

There were some areas of Manitoba that had high levels of larvae of bertha armyworm and insecticides applied to control them in late-July and the first week in August. Most of the insecticide applications for bertha armyworm were in the western regions of Manitoba. There were also a few reports of diseased larvae of bertha armyworms being noticed at the top of the canopy in the Northwest, Southwest and Interlake regions.

Diamondback moth (*Plutella xylostella*): Pheromone-baited traps for adult moths were set up at 83 locations in Manitoba in 2012. The monitoring period was generally from April 16th to June 24th, although a trap was set up March 22nd at the University of Manitoba farm near Carman. This trap collected 2 diamondback moth between March 22 and 31st, 13 diamondback moth between March 31 and April 5th, and 3 diamondback moth between April 5th and 12th.

Table 2 summarizes the results from the traps.

Table 2. Dates of first detection of diamondback moth (*Plutella xylostella*) in pheromone-baited traps in Manitoba in 2012.

Region	Week of first diamondback moth in traps	Week when trap (s) from region first reports cumulative count of > 10	Week when trap (s) from region first reports cumulative count of > 100.	Highest cumulative count from region and location
Eastern	April 23-29	April 23-29	May 14-20	418 Beausejour 323 Stead
Interlake	May 7-13	June 11-17	--	11 Teulon
Central	March 22-31	March 31- April 5	May 7-13	208 Morris
Southwest	April 23-29	May 28- June 3	--	40 Justice
Northwest	April 23-29	May 21-27	--	54 Ethelbert

The highest single week count was 109 near Beausejour (E) during the week of May 14-20. Highest trap catches were in the eastern and central parts of Manitoba.

There were some reports of diamondback moth larvae feeding on canola seedlings in areas of southwest Manitoba in early-June. Several fields in the southwest were sprayed with insecticide to control diamondback moth, and 1 field reseeded because of damage from diamondback moth. There were also reports in mid-June of canola being sprayed to control diamondback moth in the Interlake in fields near Stonewall, Teulon, and Arborg. A high population of diamondback moth was reported from a field near Altona (C) on July 10th, but after that there were no reports of high levels of diamondback moth for the rest of the growing season. Pheromone-baited traps were able to detect when diamondback moth were present and active in a region, but regions that experienced the most problems from diamondback moth in 2012 were not the regions that had the highest counts in the traps.

Zebra caterpillar (*Melanchra picta*): There were reports of canola fields near Portage la Prairie (C) and Dauphin (NW) being sprayed to control zebra caterpillar. This is the second year in a row that there has been spraying for zebra caterpillar in canola.

FLAX

(Flax-125,770 acres↑ + 3,131 acres organic flax↑)

Potato aphid (*Macrosiphum euphorbiae*): There were no reports of aphids at threshold levels in flax in Manitoba in 2012.

Aster Leafhopper (*Macrosteles quadrilineatus*): Aster yellows was reported as occurring in some fields of flax in the Northwest, Southwest and Central regions.

SUNFLOWERS

(44,667 acres non-oil↑; 45,914 acres oil↑)

Cutworms: Cutworms damage was evident in some fields of sunflowers in late-May and early-June, and some control was needed.

Sunflower beetle (*Zygogramma exclamationis*): No high population or spraying for sunflower beetles was reported in 2012.

Sunflower receptacle maggot (*Gymnocarena diffusa*): Larvae of sunflower receptacle maggot were noticed in the heads of sunflowers from several fields in the Central region in mid- to late-July.

Seedhead Insects

Many 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 very low again this year, and usually hard to find when scouting for insects on sunflower heads.

Monitoring of Lepidoptera: Pheromone-baited traps for banded sunflower moth and sunflower moth (*Homoeosoma electellum*) were placed in 6 sunflower fields as part of a program to monitor the emergence and relative abundance of these moths.

BEANS (Dry Edible)

(135,800 acres↑: White pea (navy)-55,274 acres↑, pinto-49,746 acres↑, black-14,498 acres↑, kidney-9,319 acres↑, cranberry-1,523 acres↑, other dry edible-5,440 acres)

Seedcorn maggot (*Delia platura*): There were some reports in late-May and early-June of high levels of seedcorn maggot in fields of dry beans in the Central region.

Sap Feeders

Lygus bugs (*Lygus* spp.): *Lygus* bugs were controlled in some fields of dry beans in the Central region.

Potato leafhopper (*Empoasca fabae*): Potato leafhoppers started to be noticed in some fields of dry beans in early-July. Generally populations never reached economic levels, although there was a report of some higher levels from a field near Altona.

Defoliators

Green Cloverworm (*Hypena scabra*): Green cloverworms were present in some fields of edible beans, but at levels below economical importance.

PEAS (Field)
(53,283 acres↑)

Pea aphids (*Acyrtosiphon pisum*): Some pea fields in Southwest Manitoba had insecticides applied to control aphids.

SOYBEANS
(844,660 acres↑)

Seedcorn maggot (*Delia platura*): High populations of seedcorn maggot were reported from a soybean field in the Dauphin (NW) area in early-June.

Cutworms: Cutworms were a problem in some soybean fields. A soybean field in the Dauphin area was reseeded because of damage from cutworms.

Soybean Aphid (*Aphis glycines*): Soybean aphids started to be noted in very low levels in soybean fields in late-July. Populations remained very low and there were no reports of high or economical populations.

Spider mites: Spider mite populations were controlled in some soybean fields in the Eastern and Central regions from late-July until mid-August. In some instances only edges of fields were treated, but there were situations where whole fields were treated to control spider mites. Dry conditions may have been a factor in the population of spider mites reaching high levels in some fields.

Green Cloverworm (*Hypena scabra*): Green cloverworms were present in fields of soybeans in the Eastern, Interlake and Central regions. They were generally at levels below economical importance, however there were some fields of soybeans in the Arborg (I) area that were sprayed with insecticide in mid-August because of high levels of damage from green cloverworm.

HEMP
(14,403 acres for grain↑)

Cutworms: Cutworms were controlled on hemp in the Northwest region.

FORAGES AND FORAGE SEED

Plant bugs: Some forage seed fields were treated for Lygus bugs (*Lygus* spp.) or alfalfa plant bugs (*Adelphocoris lineolatus*). High plant bug populations were also reported from a trefoil field in the Northwest.

Alfalfa weevil (*Hypera postica*): Feeding from larvae of alfalfa weevil caused a lot of damage in some fields from early-June until early-July. Reports of high levels of damage from alfalfa weevil were from across Manitoba. Some alfalfa for hay was cut early because of the presence of alfalfa weevil, and some insecticide applications were made to control alfalfa weevil.

Armyworm (*Mythimna unipuncta*): High populations of armyworm and high levels of feeding damage were reported for some forage and forage seed crops, particularly timothy. Some forage seed fields in the Interlake were treated with insecticides to control armyworms, and high armyworm levels in pastures were reported in the Northwest region.

POTATOES

(69,738 acres↑; 58,229 acres processing potatoes (irrigated)↑, 4,563 acres processing potatoes (dry)↑, 6,946 acres table potatoes↑)

Report from Vikram Bisht, Plant Pathologist – Horticultural Crops and Potatoes, Manitoba Agriculture, Food and Rural Initiatives.

Aphids (various species): Aphid populations were moderate this year. Green peach aphids were trapped in the suction and yellow pan traps set up in seed potato fields. There were some insecticide applications by seed potato growers to manage aphid populations.

Aster Leafhoppers (*Macrostelus quadrilineatus*): Significantly high populations of aster leafhoppers were seen in many crops in Manitoba, including potatoes. The level of infectivity of the leafhoppers, as reported from a Wisconsin lab, was 12-16% early in the season. This high level of infectivity, combined with populations of leafhoppers that were significantly higher than normal, resulting in a higher than normal percentage of plants with purple top disease / aster yellows.

Potato leafhopper (*Empoasca fabae*) populations were also high in some of the commercial potato fields, and foliar insecticides were used to target potato leafhoppers in a few fields. Many fields showed symptoms of hopperburn.

Potato psyllids (*Paratrioza cockerelli*): As part of a North American survey, two potato psyllids were trapped from a commercial field in Manitoba (in two separate weeks, one potato psyllid was trapped from the same field). Psyllid identification was done at the Texas A&M lab; where it was found to be free from Zebra chip bacteria (*Candidatus Liberibacter solanacearum*). Psyllids other than *P. cockerelli* were trapped from other commercial potato fields.

Colorado potato beetle (*Leptinotarsa decemlineata*): As in 2011, Colorado potato beetle populations remained very low in Manitoba in 2012, largely due to continued use of neonicotinoid (thiamethoxam, imidacloprid and clothianidin) insecticide seed treatments. Colorado potato beetle adults, eggs and various larval stages could be found in untreated fields, where many of the plants were completely stripped of the foliage during the later half of the season.

Variegated cutworm (*Peridroma saucia*): Variegated cutworm damage to tubers was observed in some fields. This insect is not typically considered of economic significance in potatoes, however, this status is being questioned based on observed damage in the last few years. In some fields, there has been a measurable reduction in marketable tubers resulting from damage from variegated cutworms.

FRUIT AND VEGETABLE CROPS

Cutworms: Damage to onions from cutworm feeding was reported in early-June. Some damage to vegetables by variegated cutworm (*Peridroma saucia*) was also reported.

Leafhoppers (Cicadellidae): Moderate to high populations of aster leafhoppers were present in some vegetable fields, and aster yellows was confirmed in carrots, onions, celery and lettuce. Hopperburn was found on crops where traditionally it has not been common, such as tomatoes.

Lygus bugs (*Lygus* spp.): Damage to day-neutral strawberries from Lygus bugs was observed in fields that had high infestations in mid-August due to migration from adjacent swathed fields.

Corn Earworm (*Helicoverpa zea*): Some damage to sweet corn by corn earworm was reported.

STORED GRAINS

Report from: Brent Elliott, Infestation Control and Sanitation Officer, Canadian Grain Commission

In general, stored product insect pest discoveries are at or below historical trends. Caution is urged due to an unseasonably warm preceding winter season where control was difficult due to temperatures being too warm to use low temperature to control insect populations but too cold for using chemical control options. The summer temperatures were ideal for reproduction for a number of storage pests. The combination of conditions over the past year may result in increased populations of stored product insects.

Rusty Grain Beetle (*Cryptolestes ferrugineus*) continues to be the most common insect found in stored grain. Discoveries have been greatest in stored wheat and barley.

A large proportion of cereals harvested in the prairies this year were put into storage warm to hot. It is important that producers prepared bins properly before storing grain, and use aeration techniques (aeration fans or grain turning) to lower and standardize the grain temperature. Lowering grain temperature below 15°C as soon as possible reduces the risk of insects feeding and reproducing.