

Summary of Insects on Crops in Manitoba in 2011

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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 2011 (shown in brackets under each commodity title) are from the Manitoba Crop Insurance Corporations 2011 Variety Market Share Report. The symbol ↑ indicates an increase in acres from 2010, whereas ↓ indicates a decrease in acres from 2010.

Summary: The biggest insect concerns in cereal crops in 2011 were aphids, armyworms (*Mythimna unipuncta*), and thrips. Diamondback moth (*Plutella xylostella*) and Lygus bugs were widespread concerns in canola, and there were localized problems with bertha armyworm, *Mamestra configurata*. High levels of striped flea beetle, *Phyllotreta striolata*, in some canola fields in eastern Manitoba in mid- and late-July was an unusual occurrence. Soybean aphid, *Aphis glycines*, populations were at economic levels in many soybean fields from late-July to late-August. Levels of zebra caterpillar, *Melanchra picta*, were high and a concern to some canola and flax growers in late-August and early-September.

SMALL GRAIN CEREALS

(Wheat (spring)-1,809,931 acres↓ + 3,096 acres organic↑; Wheat (Winter)-195,943↓; Barley-247,986 acres↓; Oats-417,565 acres↓ + 1,363 acres organic↓; Fall Rye-47,535 acres↓)

Wireworms: There were no reports of wireworm damage in small grain cereals in 2011.

Cutworms: There were no reports of cutworm damage or control in small grain cereals in 2011.

Aphids: Aphids were a concern in some fields of small grain cereals. Both English grain aphid (*Sitobion avenae*) and oat-birdcherry aphid (*Rhopalosiphum padi*) were first noticed in late-June, while sampling cereal fields. High populations of aphids were reported during July from cereal fields in the Central, Interlake and Southwest regions. Cases of barley yellow dwarf virus were reported from the Central and Southwest regions.

Thrips: Thrips feeding, and some insecticide applications to control thrips, were reported during July for wheat and barley fields in the Eastern and Central regions of Manitoba.

Wheat midge (*Sitodiplosis mosellana*): There was some insecticide applied for wheat midge in the Northwest region. The wheat midge resistant variety blends Unity, Goodeve and Fieldstar were seeded on about 40,765 acres, about 2.4% of the red spring wheat acres in Manitoba in 2011.

Grasshoppers: No grasshopper problems in small grains were reported in 2011.

Cereal Leaf Beetle (*Oulema melanopus*): There were some reports of cereal leaf beetles and their feeding being noticed in the Swan River and Minitonas areas of the Northwest in July. The establishment of *Tetrastichus julis*, a parasitoid of the larvae of cereal leaf beetle was confirmed.

Armyworm (*Mythimna* [formerly *Pseudaletia*] *unipuncta*): Armyworm larvae began to be noticed in mid-June. Some fields in the Morden (C), Winkler (C) and Whitemouth/Elma (E) areas were sprayed with insecticide in July to control armyworms. High populations of armyworms and some insecticide applications were also reported for fields near Beausejour (E) and in the Interlake and Northwest regions.

CORN

(177,946 acres grain corn↑; 37,051 acres silage corn↓)

Armyworm (*Mythimna unipuncta*): Some corn in the Whitemouth/Elma area was sprayed to control armyworms.

European corn borer (*Ostrinia nubilalis*): In 2011, acres of grain corn seeded to *Bt* varieties dropped to 40.8 %, and acres of silage corn seeded to *Bt* varieties increased slightly to 21.2%. Some higher populations of European corn borer were noted in a few fields of corn in the Central region.

Western Bean Cutworm (*Striacosta albicosta*): Western bean cutworm has never been detected in Manitoba, but has been confirmed in Minnesota and North Dakota, both of which border Manitoba. Pheromone-baited unitraps were set up at eight locations from July 4 to August 28 to monitor for the presence of moths of western bean cutworm in Manitoba. No western bean cutworms were found in any of the traps, although there are still some moths collected from these traps that need identification. Some moths with markings similar to western bean cutworm are captured by these traps.

Fourspotted Sap Beetles (*Glischrochilus quadrisignatus*): High levels of sap beetles were reported from some corn fields in the Central region from mid-August through early-September.

Spider Mites: High populations of spider mites were reported from a corn field near Altona.

CANOLA and MUSTARD

(Argentine canola-2,662,256 acres↓; Polish canola-3,725 acres↑; Mustard-1,222 acres↓)

Flea beetles (*Phyllotreta* spp.): Use of seed treatments containing neonicotinoid insecticides to manage early-season flea beetle populations continues to be common. Even with use of these seed treatments, high populations of flea beetles and foliar insecticide applications for flea beetles were reported from many areas of Manitoba in mid- and late-June. In some of these fields uneven emergence and slow early-season growth were increasing the vulnerability of the plants to injury from flea beetles.

High populations of striped flea beetles in mid- and late-July in the eastern part of Manitoba was an unusual event. There were some reports of high levels of flea beetles on canola in early-September as well.

Cutworms: Reports of cutworm damage in canola was down slightly this year, but cutworms were still a concern in localized areas. Insecticides were applied to control cutworms in a couple of canola field in the Swan River (NW) area, and a canola field near Neepawa (SW) had to be reseeded because of cutworm damage.

Root Maggots (*Delia* spp.): The presence of root maggots was noted in some canola fields in the Northwest region, but there were few reports of root maggots or root maggot damage to canola.

Bertha Armyworm (*Mamestra configurata*): Pheromone-baited traps to monitor adult moths of bertha armyworm were set up at 54 locations in Manitoba in 2011. The monitoring period was June 6th to July 31st. Cumulative moth counts suggested populations were at low to moderate risk of being problematic in most regions of Manitoba in 2011. Table 1 shows the highest trap counts for 2011.

Table 1. Highest cumulative counts of bertha armyworm (*Mamestra configurata*) in pheromone-baited traps in Manitoba in 2011.

Nearest town	Region	Trap Count	Risk Category
Durban	Northwest	1,051	Moderate
Minitonas	Northwest	365	Uncertain
Bowsman	Northwest	330	Uncertain
Neepawa	Southwest	320	Uncertain

Peak trap catches occurred in most traps during the weeks of July 4-10th and July 11-17th. The highest trap catch in a single week was 390 at the trap near Durban on the week of July 4-10th.

Although trap counts for adult moths were generally not high, there were some areas of Manitoba that had high levels of larvae of bertha armyworm or insecticides being applied to control them in late-July until mid-August. In the Central region, insecticides were applied to control bertha armyworm in canola fields near Glenboro, Holland, Treherne, Mariapolis, Baldur and Austin. There were some canola fields in the Interlake near Arborg that were also sprayed to control bertha armyworm. High populations were also reported from the Melita, Virden and Oak Lake areas in Southwest Manitoba.

Diamondback moth (*Plutella xylostella*): Pheromone-baited traps for adult moths were set up at 62 locations in Manitoba in 2011. The monitoring period was generally from May 2nd to June 19th. Table 2 summarizes the results.

Table2. Dates of first detection of diamondback moth (*Plutella xylostella*) in pheromone-baited traps in Manitoba in 2011.

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	May 9-15	May 16-22	June 6-12	175 Beausejour 1 trap >100
Interlake	May 30-June 5	--	--	2 Teulon
Central	May 2-8	May 9-15	June 13-19	239 Morris 1 trap > 100
Southwest	May 9-15	--	--	6 Boissevain
Northwest	May 16-22	June 6-12	--	13 The Pas

The highest single week count was 94 near Morris (C) during the week of June 13-19. Highest trap catches were in the eastern and central parts of Manitoba.

In mid- and late-July reports started to come in of high populations of diamondback moth in Eastern Manitoba. Populations seemed particularly high in the Beausejour (E) area, where a lot of canola fields were sprayed. In late-July high populations and some control was reported from the Swan River Valley, an area that had low adult trap catches. Then in early August reports started coming in of higher levels of larvae and some insecticide applications to control diamondback moth in the Central and Interlake regions.

High levels of diamondback moth larvae were also reported west of Dauphin (NW) and near Brunkild (C). Reports of high populations of diamondback larvae and control stopped about mid-August.

On August 10, diamondback moth larvae from 4 fields in Central Manitoba were collected using a sweep net, aspirated, and shipped to Dr. Lloyd Dosdall at the University of Alberta where they were reared for parasitoids. Results are indicated in the table below:

Table 3. Parasitoids reared from diamondback moth larvae collected in Manitoba on August 10, 2011.

Nearest Location	Total larvae collected	Larvae dead from unknown causes	Larvae parasitized by <i>Cotesia</i> sp.	Larvae parasitized by <i>Microplitis plutellae</i>	Larvae parasitized by <i>Diadegma</i> sp.	Larvae nonparasitized, emerged as adults	Overall % parasitism
Lasalle	226	87	113	4	1	20	85.6
Carman	83	50	9	3	8	11	66.7
Sanford	146	52	55	18	5	16	83.0
Sperling	167	62	77	1	7	19	81.9

In 3 of the 4 fields sampled the overall % parasitism was over 80%, with *Cotesia* sp. being the dominant parasitoid.

Lygus bugs (*Lygus* spp.): Levels of *Lygus* bugs became economical in many canola fields across Manitoba starting in early-August. Economical populations were widespread and continued into mid-September. There were reports of insecticide applications for *Lygus* bugs or populations above economic threshold in canola fields near Beausejour (E), Niverville (E), Ile des Chenes (E), Arnaud (E), Emerson (E), Morris (C), Altona (C), Thornhill (C), Manitou (C), Elm Creek (C), Bagot (C), MacGregor (C), St. Claude (C), Rossendale (C), Portage la Prairie (C), Dauphin (NW) and Laurier (NW). Above normal dockage due to *Lygus* bug damage was reported by some producers in the Interlake.

Zebra caterpillar (*Melanchra picta*): In late-August and early-September, much higher than normal populations of zebra caterpillar occurred, with canola being one of the host plants they were feeding on. Some spraying of zebra caterpillars in canola was reported for fields near Arborg (I) and Fisher Branch (I). Zebra caterpillar was also reported from canola near Portage la Prairie. Some indicated that they were feeding on the pods and seeds. This is the first year that I can recall where zebra caterpillar populations were being controlled in canola.

FLAX

(Flax-84,232 acres↓ + 2,216 acres organic flax↑)

Potato aphid (*Macrosiphum euphorbiae*): There were no reports of aphids at threshold levels in flax in Manitoba in 2011.

Zebra caterpillar (*Melanchra picta*): There were some reports of high levels of zebra caterpillars in flax in the Interlake, and at least one flax field in the Interlake had insecticide applied to control zebra caterpillars. One report indicated that leaves were being fed on and there were some bolls on the ground.

SUNFLOWERS

(20,005 acres non-oil↓; 15,207 acres oil↓)

Sunflower beetle (*Zygogramma exclamationis*): No high population or spraying for sunflower beetles was reported in 2011.

Sunflower midge (*Contarinia schulzi*): Some distorted heads from feeding by sunflower midge larvae were found in some sunflower fields across Manitoba. Economic losses were minimal.

Seedhead Insects

Many fields of confection sunflowers were again treated with insecticides during early flowering to control seedhead insects such as **Lygus bugs** (*Lygus* spp.) and **banded sunflower moth** (*Cochylis hospes*). 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 *Cochylis arthuri* were placed in 6 sunflower fields as part of a program to monitor the emergence and relative abundance of these moths.

BEANS (Dry Edible)

(51,182 acres↓: White pea (navy)-20,131 acres↓, pinto-13,342 acres↓, black-9,804 acres↓, kidney-4,465 acres↓, cranberry-1,443 acres↓, other dry edible-1,997 acres)

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

PEAS (Field)

(18,996 acres↓)

Pea aphids (*Acyrtosiphon pisum*): There were little or no insecticide applications for aphids in peas in Manitoba in 2011.

SOYBEANS

(587,382 acres↑)

Soybean Aphid (*Aphis glycines*): The first report of soybean aphids in Manitoba in 2011 was on July 5th, from a couple of sites in the Carman area. This is about 2 weeks earlier than the first reports of soybean aphids in 2010. Populations of soybean aphids got larger in many fields through July, and by late-July populations had reached economical levels in some fields. Insecticide applications for soybean aphids were widespread through August. By mid-August the levels of natural enemies, particularly lady beetles and hover fly larvae, were very large in some fields, and had halted the increase in soybean aphid numbers and resulted in very noticeable decreases in soybean aphid numbers in some fields.

Green Cloverworm (*Hypena scabra*): Green cloverworms were present in some fields of soybeans in the Central region, but at levels below economical importance.

Spider mites: Spider mites and their feeding were noticeable in some soybean fields in the Central and

Eastern regions of Manitoba.

FABABEANS

(1,986 acres↓)

No insect concerns were reported from fababeans in Manitoba in 2011.

LENTILS

(892 acres↓)

No insect concerns were reported from lentils in Manitoba in 2011.

CANARYSEED

(10,179 acres↓)

There were no reports of concerns over insects in canaryseed in Manitoba in 2011.

HEMP

(4,692 acres for grain↓)

No economical insect concerns were reported from hemp in 2011.

FORAGES AND FORAGE SEED

Alfalfa weevil (*Hypera postica*): Populations of alfalfa weevil continue to decline to a degree in areas that only a few years ago were significantly damaged. Timing for control in the Interlake region is well coordinated with control of plant bugs prior to placement of leafcutter bees in the field, so management is not requiring additional insecticide application at this time. Natural enemies seem to have brought populations nearly under control but no formal surveys have confirmed this to be the cause at this time.

Plant bugs: Many alfalfa seed fields were treated for one of or a combination of Lygus bugs (*Lygus* spp.), alfalfa plant bugs (*Adelphocoris lineolatus*) and alfalfa weevil.

Zebra caterpillar (*Melanchra picta*): A very noticeable level of zebra caterpillars was reported from a trefoil field in early-September. There was some defoliation and feeding on pods, but not at economical levels.

POTATOES

Colorado potato beetle (*Leptinotarsa decemlineata*): Populations remain very low in Manitoba thanks largely due to continued use of neonicotinoid insecticide seed treatments. Populations are so low that it is proving difficult to find populations for resistance testing outside of research plots (e.g. Canada-Manitoba Crop Diversification Centre sites).

Aphids (various species): Aphid populations were moderate this year.

Leafhoppers: **Potato leafhopper** (*Empoasca fabae*) populations were low in 2011. There were some dubious reports of **aster leafhopper** (*Macrostelus quadrilineatus*) being an issue late in the season in

potatoes. While it is possible that populations were present, general indications were that populations were low, phytoplasma levels were moderate at best and the timing of the populations was sufficiently late that transmission of the phytoplasma likely would not have resulted in any expression of the disease.

Potato flea beetle (*Epitrix cucumeris*): Populations were low.

SWEET CORN, CARROTS, COLE CROPS AND OTHER VEGETABLE CROPS

Populations of **European corn borer** (*Ostrinia nubilalis*) were low to moderate this year with limited problems reported. Most growers are relying on calendar spraying for management of this pest in sweet corn.

Diamondback moth (*Plutella xylostella*) populations were moderate this year in cole crops, an increase over recent years. Populations of **imported cabbageworm** (*Pieris rapae*) are on the increase again after a number of years of lower populations. Many Cole crop fields were sprayed to control populations from July through early September.

Populations of **aster leafhopper** (*Macrosteles quadrilineatus*) were low to moderate in carrots through most of the summer months but increased significantly in late August and remained high until harvest. It appeared levels of infection were relatively low early in the season as evidenced by a lack of symptoms in carrots through August. The increase in the fall resulted in an increase in visible symptoms in carrots through September. In some fields being sampled it appeared as though fields that were well managed through the summer were no longer being managed during the fall even though harvest was delayed for a lengthy period of time allowing for transmission of phytoplasma. **Wireworms** and **carrot weevil** (*Listronotus oregonensis*) also caused damage in some fields in 2011.