



Summary of Insects on Crops in Manitoba in 2017

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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 2017 (shown in brackets under each commodity title) are from the Manitoba Agricultural Services Corporation (MASC) 2017 Variety Market Share Report. The symbol ↑ indicates an increase in acres from 2016, whereas ↓ indicates a decrease in acres from 2016.

Summary: Flea beetles (*Phyllotreta* spp.) in canola and cutworms continued to be at economical levels in many areas of Manitoba in 2017. Aphids were at high levels and resulted in insecticide applications in small grain cereals, field peas and soybeans. Diamondback moth (*Plutella xylostella*) were controlled in many canola fields. Bertha armyworm (*Mamestra configurata*) got to economic levels in some canola fields in Western Manitoba. Alfalfa weevil (*Hypera postica*) was at high levels in many alfalfa fields. Thistle caterpillars (*Vanessa cardui*) caused concern in some soybean and sunflower fields.

Small Grain Cereals

(**Wheat (spring)**-2,365,528 acres↓ + 5,982 acres organic↑ + 1,204 acres durum↓; **Wheat (Winter)**-133,596↓ + 1,235 acres organic↑; **Barley**-246,696 acres↓; **Oats**-451,027 acres↑ + 2,800 acres organic↓; **Fall Rye**-73,308 acres↓; **Triticale**-633 acres↓)

Wireworms (Elateridae): Some wireworm damaged patches were reported in oats in Central Manitoba.

Cutworms (Noctuidae): Cutworms populations were still a concern in many areas of Manitoba in 2017. Some cereal crops in the Swan River area (NW) were sprayed for cutworms.

Wheat midge (*Sitodiplosis mosellana*): Wheat midge was generally not a major concern in Manitoba in 2017. The only reports of insecticide applications for wheat midge were from western Manitoba, and only for a small amount of acres. Some midge tolerant wheat variety blends were planted, but this amounts to less than 1% of the total wheat acres.

Sap Feeders

Aphids: Aphids began to be noticed in cereal crops in early-June. Some populations above economic threshold were reported in July. Both English grain aphid (*Sitobion avenae*) and oat-birdcherry aphid (*Rhopalosiphum padi*) were present. Insecticide applications occurred in many areas, sometimes tank

mixed with a fungicide. High levels of natural enemies of aphids were noted in some fields, which at times made decisions on whether to apply insecticides difficult. Incidents of barley yellow dwarf were reported from some fields in the Central region.

Thrips: There were isolated incidents in the Central region of barley with high levels of thrips and being treated with insecticide.

Defoliators

Grasshoppers: There was some field edge spraying for grasshoppers in the Central region, otherwise grasshoppers were a minor concern in small grains.

Armyworm (*Mythimna unipuncta*): Armyworms were noticed in some wheat and barley fields, but there were no reports of control being needed.

Cereal Leaf Beetle (*Oulema melanopus*): No economic populations of cereal leaf beetle were reported.

A sample of cereal leaf beetle larvae were collected from a spring wheat field near Thornhill, MB in June and sent to be tested for parasitism by *Tetrastichus julis* (Eulophidae). Twenty-three of 30 larvae were parasitized (77%). No prior releases of *T. julis* were done in this area, so the spread of the parasitoid is encouraging. No new releases of *T. julis* were done in Manitoba in 2017.

Corn

(395,526 acres **grain corn**↑; 88,594 acres **silage corn**↓)

Cutworms (Noctuidae): Some fields of corn in the Central region were sprayed to control cutworms.

Wireworms: No wireworm damage to corn was reported.

European corn borer (*Ostrinia nubilalis*): Isolated high populations of European corn borer were reported from the Central region. Overall European corn borer populations were not high in 2017.

Armyworms (*Mythimna unipuncta*): Some high populations of armyworms were found on corn in the Eastern region. A field of corn in the Steinbach area was sprayed for armyworms.

Canola and Mustard

(**Argentine canola**-3,108,464 acres↓; **Rapeseed**-5,361 acres↓; **Mustard**-1,495 acres↓)

Cutworms (Noctuidae): Cutworms were a concern in some canola fields, resulting in some insecticide applications. There were reports of canola in the Central and Northwest regions being sprayed for cutworms.

Root Maggots (*Delia* spp.): There were some reports in July of root maggots being noted by agronomists and farmers examine canola roots.

Sap Feeders

Lygus bugs (*Lygus* spp.): There were reports of some canola fields in the Northwest being sprayed for Lygus bug in late-July.

Turnip aphid (*Lipaphis erysimi*): Noticeable levels of turnip aphid were found in some canola fields in the Northwest in August.

Aster Leafhopper (*Macrostelus quadrilineatus*): There were no reports of high levels of aster leafhoppers or aster yellows in canola in Manitoba in 2017.

Defoliators

Flea beetles (*Phyllotreta* spp.): Use of seed treatments to manage early-season flea beetle populations continues to be common. However, feeding damage to young plants at or above threshold levels, and additional use of foliar insecticides, occurred in some fields in all agricultural regions. Some reseeded of canola due to flea beetle injury was reported from the Central region. Slow emergence and growth due to cool weather conditions and dry soil increased injury from flea beetles in some areas. Significant stem feeding by flea beetles was noticed in some fields.

Bertha Armyworm (*Mamestra configurata*): Levels of bertha armyworm larvae were high in the western part of Manitoba, with insecticide applications needed in some fields in August. All the higher populations and insecticide applications occurred in the Southwest and Northwest regions, and the western part of the Central region. No higher populations of bertha armyworm were reported from Eastern Manitoba. Some canola fields in western Manitoba had high levels of bertha armyworm and diamondback moth occurring simultaneously in early-August.

Pheromone-baited traps to monitor adult moths of bertha armyworm were set up at 90 locations in Manitoba in 2017. The monitoring period was June 4th to July 29th. Eighty-six of the 90 traps were in the low risk category (less than 300 cumulative moth count). Three traps in the Northwest were in the uncertain risk category (300 to 900 cumulative moth count), and one trap in the Southwest was in the uncertain risk category. Trap counts from 2017 were generally lower than in 2016, when there was 2 traps in the moderate risk category (900 to 1,200 cumulative moth count), and 10 traps in the uncertain risk category. In 2016 economic populations of berths armyworms were not widespread, with just a small amount of insecticide applied in the Northwest. Table 1 shows the highest trap counts for 2017.

Table 1. Highest cumulative counts of bertha armyworm (*Mamestra configurata*) moths in pheromone-baited traps in Manitoba in 2017.

Nearest town	Region	Trap Count	Risk Category
Benito	Northwest	605	Uncertain
Tilston	Southwest	413	Uncertain
Durban	Northwest	371	Uncertain
Benito	Northwest	329	Uncertain
Durban	Northwest	297	Low
Glenboro	Central	294	Low

Peak trap catches occurred in many traps during the first week in July.

The highest trap catch in a single week was 195 at a trap near Benito on the week of July 2 - 8th.

Diamondback moth (*Plutella xylostella*): Larvae of diamondback moth first started to be noticed in early-June. By early-July some canola fields in the Southwest were being sprayed for diamondback moth. There was concern over the combination of dry conditions and feeding from diamondback moth. In late-July and early-August insecticide applications for diamondback moth became much more widespread, with many canola fields being sprayed in the Southwest, Northwest and Central regions. In some areas there was not a lot of leaf material on the canola because of the dry weather, which may have resulted in larvae moving onto the pods early.

Pheromone-baited traps for adult moths were set up at 94 locations in Manitoba in 2017. The monitoring period was generally from May 1st to June 30th. Trap counts were generally low in May, but there were higher counts in many traps during the weeks of June 4th to 10th, and June 11th to 17th. Although diamondback moth arrives on winds from the south, the Northwest region had some of the highest cumulative moth counts, while the Southwest generally had the lowest counts (highest total in Southwest was 13). Trap counts were higher in 2016, where 8 traps had over 100 cumulative moths, than 2017, although there were no reports of control being needed for diamondback moth in 2016. Table 1 shows the highest cumulative trap counts for 2017.

Table 2. Highest cumulative counts of diamondback moth (*Plutella xylostella*) in pheromone-baited traps in Manitoba in 2017.

Nearest town	Region	Trap Count
Minitonas	Northwest	197
The Pas	Northwest	129
Teulon	Interlake	107
Howden	Central	86
The Pas	Northwest	80
Whitemouth	Eastern	75

Thistle caterpillars (*Vanessa cardui*): Thistle caterpillars were noticed in some canola fields, but damage was minimal and no populations of concern were reported.

Flax

(Flax-42,333 acres↓ + 1,023 acres organic flax↑)

Potato aphid (*Macrosiphum euphorbiae*): There were no reports of high populations of aphids on flax in 2017.

Sunflowers

(26,325 acres non-oil↓; 33,480 acres oil↓)

Cutworms (Noctuidae): There were reports of some spraying for cutworms on sunflowers in the Central region.

Sunflower beetle (*Zygogramma exclamationis*): No high populations or spraying for sunflower beetle was reported in 2017. The last year that economic populations of sunflower beetle have been reported in Manitoba is 2009.

Thistle caterpillars (*Vanessa cardui*): Thistle caterpillars were noticed in some sunflower fields, and one

field in the Central region was sprayed to control thistle caterpillars. Populations of larvae were at times patchy.

Aphids: High levels of aphids were noted in some sunflower fields in the Central region, starting at the flowering stage. No insecticide applications specifically for aphids were reported though.

Seedhead Insects

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

Beans (Dry)

(122,763 acres↑: Pinto-52,048 acres↑, white pea (navy)-27,231 acres↑, black-22,409 acres↑, kidney-8,136 acres↓, cranberry-7,249 acres↑, other dry edible-5,690 acres)

Cutworms (Noctuidae): Some control of cutworms in dry beans was reported from the Central region.

Seedcorn maggot (*Delia platura*): Seedcorn maggots were noticed in the roots and stems in some fields of dry beans in the Central region.

Peas (Field)

(67,047 acres↓)

Cutworms (Noctuidae): Cutworm were an issue in some pea fields and control needed in the Northwest region.

Pea aphids (*Acyrtosiphon pisum*): Pea aphid levels were above economic threshold in many fields, and there were reports high populations of aphids in peas in the Northwest, Southwest, Central and Interlake regions. Most pea aphid control occurred in mid- to late-July.

Lentils

(2,681 acres↓)

Cutworms (Noctuidae): Cutworm were reported to be causing damage and required spraying on lentils in the Northwest region.

Aphids: There was a report from the Southwest of high levels of aphids in lentils.

Soybeans

(2,262,474 acres↑)

Cutworms (Noctuidae): There were reports of insecticide applications for cutworms in soybeans from the Northwest, Central and Eastern regions.

Soybean Aphid (*Aphis glycines*): Soybean aphids started to be noted in very low levels in soybean fields in early-July. Beginning in the last week in July economical populations of soybean aphids began to be

noticed. Economic populations became widespread and there were insecticide applications for soybean aphid in all agricultural regions, with high populations being reports until about the third week in August. High levels of predators of soybean aphids (lady beetles, lacewings, syrphid larvae) were also reported from some soybean fields. Dry conditions in some areas was combined with aphid pressure in stressing soybean crops.

Spider mites: Some insecticides were applied to control spider mites on soybeans in the Central and Eastern regions.

Thistle caterpillars (*Vanessa cardui*): Thistle caterpillars began to be noticed in soybean fields in early-July. The caterpillars and their webbing are very visible and created a lot of concern. A field in the Central region had insecticide applied for thistle caterpillar control. Most of the concern was in early- to mid- July, although larvae, likely from the next generation, were also feeding on soybeans in mid-August. Most reports of thistle caterpillar in soybeans were from the Southwest, Central and Interlake regions.

Alfalfa weevil (*Hypera postica*): Although not normally a pest of soybeans, there was a report from the Central region of alfalfa weevil defoliating soybeans. The soybeans were planted into the previous year's seed alfalfa stand. The volunteer alfalfa was killed with herbicide and the alfalfa weevils moved from the alfalfa to the soybeans and began feeding.

Green Cloverworm (*Hypena scabra*): Levels of green cloverworm in soybeans were low in 2017.

Hemp

(27,296 acres for grain↑)

Cutworms (Noctuidae): Some control of cutworms in hemp was reported from the Northwest region.

Canaryseed

(4,283 acres↓)

Aphids: A field of canaryseed in the Eastern region was sprayed for aphids.

Hops

A couple of hops grower, in the Neepawa and Boissevain areas, reported having problems with **aphids**, **leafhoppers** and **spider mites**.

Forages and Forage Seed

Alfalfa weevil (*Hypera postica*): Feeding injury and high levels of larvae of alfalfa weevil were common in many alfalfa fields. Some alfalfa for hay was cut early because of the presence of alfalfa weevil. Insecticides were applied in some fields. Alfalfa weevil control started in early-June and extended into early-July.

David Ostermann with Manitoba Agriculture assessed the percentage of alfalfa weevil parasitized at 4 locations in Manitoba (near Fannystelle, the Winnipeg floodway, Arborg, and Fisher Branch), in 2017. Levels of parasitism by the larval parasitoid *Bathyplectes* sp. (Ichneumonidae) were 9.9%

(Fannystelle), 7.1% (Winnipeg), 39.4% (Arborg), and 20.8% (Fisher Branch). Levels of parasitism by the larval parasitoid *Oomyzus incertus* (Eulophidae) were 9.9% (Fannystelle), 10.0% (Winnipeg), 2.8% (Arborg), and 1.4% (Fisher Branch). Parasitism by unidentified larvae was also observed. *Bathyplectes* sp. are key biological control agents for alfalfa weevil in some regions of North America, and it is hoped that biological control can eventually be a greater factor in alfalfa weevil management in Manitoba.

Lygus bugs (*Lygus* spp.): Some alfalfa seed fields were sprayed to control Lygus bugs.

Potatoes

Report from: Vikram Bisht, Horticulture Pathologist, Manitoba Agriculture.

Colorado potato beetle (*Leptinotarsa decemlineata*): Quite a few incidences of Colorado potato beetles appeared in July and in the later part of the potato season; some may have escaped the neonicotinoid insecticides or developed some tolerance. These cases may be apparent insecticide resistance to Admire and Titan seed treated fields. This class of chemistry does not appear to be performing as well as it used to in a few locations. Delegate insecticide was used in many instances as foliar application.

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. Two potato psyllids were found in Manitoba in 2016, but none were reported for 2017.

European Corn Borer (*Ostrinia nubilalis*): Damage was seen in some fields as part of ECB monitoring; In some fields up to 20 ECB adults were trapped in a week on the card. The injury was much lower than was seen in 2015. No Insecticide application was recommended.

Aphids (Green Peach, Potato and other types): The numbers were extremely high for most of the season; and jumping much higher in August and September during harvest of wheat, canola and other crops. Harvest of nearby crops was probably responsible for the influx.

Dipterous insect larvae were noted in many fields associated with potato stem rot problem. In a wetter year, the incidence of stem rotting could be much higher.

Vegetable Crops

Report from: Tom Gonsalves, Vegetable Specialist, Manitoba Agriculture, and Vikram Bisht, Horticulture Pathologist, Manitoba Agriculture.

Flea beetles (*Phyllotreta* spp.) **on Cruciferous vegetables**: There was moderate to high early season flea beetle pressure on cruciferous vegetable crops in the Portage la Prairie area. Also, there was late-season flea beetle damage on the kale in the Manitoba Agriculture high tunnel in Portage la Prairie.

Aster leafhopper numbers on carrots, compared to 2016 appeared higher; resulting in 1-3% infected plants. Yellows affected plants tend to produce hairy carrots, which are often bitter in taste. There were low levels of **wireworm** damage to carrots. It is becoming a concern, due to limited options for insecticides.

Fruit Crops

Report from: Anthony Mintenko, Fruit Specialist, Manitoba Agriculture.

Spotted-wing drosophila (*Drosophila suzukii*): Monitoring for spotted-wing drosophila (SWD) began in June until August. SWD did not become an economic pest until mid-July, although control of SWD started in summer-bearing raspberries the second week of July. Raspberries that did not have pest control applications experienced loss of the last 1/3 of harvesting, 30-40% of overall yields. Fortunately berry set in raspberries was very high resulting in only slightly below average or average crop yields.

Fourspotted sap beetles (*Glischrochilus quadrisignatus*): This insect was observed by raspberry producers in early July in low numbers which continued at that level until end of harvest.

Tarnish Plant Bug/ Lygus Bug (*Lygus* spp): Was an issue in all June- bearing strawberry fields. Fields that did not have pest control applications observed cat-facing berry damage (seedy end) on 70-80% of the berries.

Stored Grains

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

Rusty grain beetle (*Cryptolestes ferrugineus*): Rusty grain beetles continue to be the most common insect found in stored grain. As is the case each year numerous reports of infestation in grain stored over the summer were reported. The rusty grain beetle is present year round and for summer stored grain the beetle is able to fly readily from bin to bin and infest during the summer months as well.

Lesser grain borer (*Rhyzopertha dominica*) – the survey for lesser grain borer in Canada continued for a fourth year.

Lesser grain borer traps were placed at 22 locations across the Prairie Provinces ranging from south latitude of 49.1° to north latitude of 52.3°. The insect was collected at 16 of 22 locations and lesser grain borer was collected further north this season than it was in the prior years. This is likely due to strong south winds pushing the insect further to the north. Previously the insect was only collected south of 50.2° north latitude. This year the insect was collected as far north as 51.5° north latitude. The survey is not expected to be carried out in 2018.