

# Manitoba Crop Pest Update

## Issue 11: July 21, 2021

### Summary

**Insects:** Grasshoppers continue to be a concern in some areas. Some economical populations of diamondback moth have been reported in southern part of the Eastern region, although populations vary and others have been reporting sub-economic levels. Both larvae and pupae of diamondback moth are present in some fields.

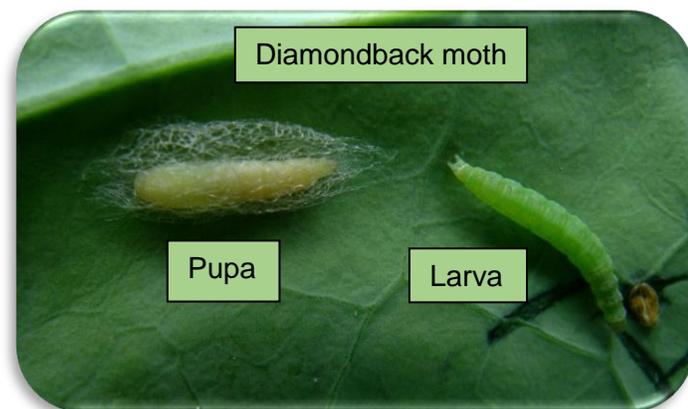
**Diseases:** Much needed moisture for crops quickly gets growers wondering whether disease will be an issue before harvest, especially if they have chosen to forego the most common fungicide applications – for Sclerotinia in canola and for Fusarium head blight (FHB) in cereals. This week the FHB forecast is being wrapped up and our staff are turning their attention to the major disease surveys we conduct. Surveying of barley and soybean is underway. Spring wheat is soon to follow and canola is not far behind.

**Weeds:** A few late glyphosate applications are taking place in soybeans, and we are starting to think now about preharvest applications. While crops may be drying down in the heat on their own, many fields have a lot of green, growing weeds that will interfere with grain harvest and storage. Continue monitoring for waterhemp and Palmer amaranth as these weeds need to be destroyed before they set seed.

### Entomology

**Diamondback moth on Canola:** There have been some reports of levels of diamondback moth around the economic thresholds in the Eastern region. As canola enters the podding stage, it is good to consider levels of larvae and what they are feeding on. A few things to consider regarding management decisions for diamondback moth are:

- Where are they feeding? It is feeding directly to the pods, particularly young pods, that is likely to be most economical. Feeding to leaves would have little impact on yield late in the season, except in more extreme situations. In addition to counting larvae, consider how much feeding is occurring on the pods, and how developed the pods are.
- Stage of the larvae. Are they starting to turn to pupae. The larvae are the only stage capable of damaging the crop.



- The larval stage lasts about ten to 21 days, depending upon temperature and the availability of food.

Also note that heavy rain can be a natural mortality factor of small larvae.

Information on biology, monitoring techniques and nominal thresholds for diamondback moth in canola can be found at:

<https://www.gov.mb.ca/agriculture/crops/insects/diamondback-moth.html>

**Important consideration** – recall from the June 30 Manitoba Crop Pest Update that pollinators can result in significantly better yields in canola, particularly in dry years, and reduce the amount of time spent in the flowering stages. Details on some of the latest research on this is posted at the Canola Research Hub:

<https://www.canolacouncil.org/research-hub/>

Be careful not to do unnecessary insecticide applications in canola, particularly during the flowering stages, where broad-spectrum insecticide applications could inadvertently decrease yields.

### **Nationwide monitoring project for European corn borer:**

A reminder for those scouting for European corn borer that a harmonized monitoring protocol has been created, so those monitoring for European corn borer can enter their counts of egg masses, larvae and feeding damage into a free Survey123 app (available for both desktop and mobile devices). Use of the harmonized protocol will generate data to compare ECB presence across all of Canada and across host crops. From this, levels of European corn borer on various hosts can be tracked. If you are scouting for European corn borer, consider using this harmonized protocol and enter your data using the Survey123 app. More details on the protocol for monitoring eggs and larvae of European corn borer can be found at:

<https://fieldcropnews.com/2021/06/nationwide-monitoring-pilot-project-for-european-corn-borer/>



At the end of the growing season, maps illustrating the results of the monitoring program will be made available on the Great Lakes and Maritimes Pest Monitoring Network and Prairie Pest Monitoring Network websites, among others. Data will be used to answer questions about the preferred host crops of European corn borer in Canada and its distribution and relative abundance across Canada.

I am also looking for European corn borer eggs for a study on European corn borers. If anyone does notice eggs of European corn borer, please let me know (see contact information for John Gavloski at the end of the update).

**Grasshoppers:** Grasshoppers continue to be a concern in many areas with some control occurring along field edges or whole fields. The species that are present is also quite interesting and in some areas different than what we have seen recently. As reported previously, there are areas where clearwinged grasshopper, which is primarily a grass feeder, are a dominant species. This past week, photos of the dominant species being found in some canola fields in the Northwest region were submitted, and these were Packard grasshopper, *Melanoplus packardii*.



#### Identifying Packard grasshopper

- Two light-coloured stripes extend from just behind the eyes to the back of the thorax.
- Blue hind tibia (the long, then lower section of the leg)

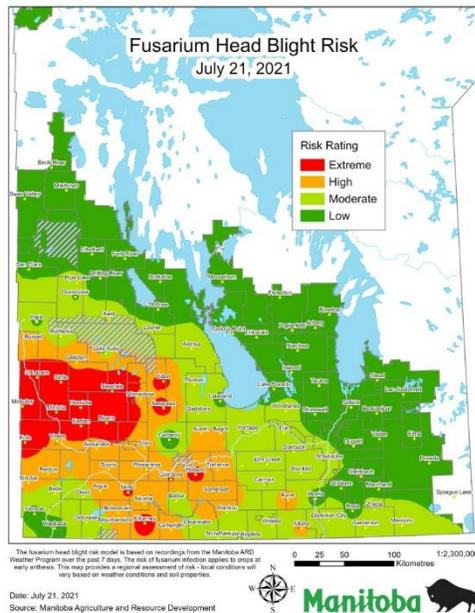
Packard grasshopper is generally less common than some of the other potential pest species of grasshoppers, such as two-striped, and typically more of a moderate threat. But it can increase in numbers in areas with sandier soil and generally dry conditions.

If anyone is noting Packard grasshopper being the dominant species in a particular area, please contact John Gavloski and let me know. It will be interesting to track where this species is being noted.

Some species of grasshoppers will also feed in flax. Two-striped grasshopper is the most common species that periodically can damage flax. The following photo shows stripping of the stalks in flax.



## Plant Pathology



**Fusarium Head Blight:** I am going to make a bold prediction and suggest the impact of Fusarium head blight in small grain cereals will be negligible in Manitoba this year. Most crops have past the vulnerable (flowering) stage. They will not be infected even if risk factors (warm temperatures and high humidity) continue or increase. The most recent map shows high to extreme risk in the southwest however most cereals there are well on the way to maturity ... perhaps prematurely. Posting of maps will be wrapped up on July 23.

Some FHB has been found in the **barley** that we have surveyed but never more than

8% of heads affected and, on those, usually only a single spikelet. At that low level of infection, neither Fusarium damaged kernels nor DON toxins are to be expected in a harvested sample.

Surveying in **soybeans** shows most of the foliar diseases are scant, however, **Phytophthora** root rot has been found in several fields and at significant levels – either in patches or scattered throughout the field. Plants that have flowered already are severely wilted or dead. Dark discoloration is evident from the base, partway up the stems. Another characteristic symptom is that leaves remain attached to the stems. If you are unsure what you are looking at, consider taking or sending a sample to the Crop Diagnostic Centre.





## Weeds

**Preharvest:** Preharvest applications will start soon, there are three different products that can be used. Glyphosate can be applied for perennial weed control when grain moisture is less than 30%. Heat brands can be applied for harvest aid/desiccation at similar staging to glyphosate. Reglone (diquat) is used to dry immature green material at the top of indeterminate crops and green weeds to facilitate harvest. Applying any product earlier than the labelled stage can result in reduced yield and quality. Consult product labels in the 2021 Guide to Field Crop Protection for appropriate staging.

**Waterhemp:** Continue monitoring for waterhemp, these plants are recognizable as a pigweed but do not have hairs like the more familiar red root pigweed. There are several pigweed species in MB, they are hard to tell apart, especially when plants are small. Here are a couple pics comparing waterhemp to redroot pigweed:



Waterhemp has alternate, oval to lance to spear shaped leaves, they can have a glossy, waxy sheen. By now we start to see these plants above the crop, waterhemp is can be anywhere from 4 to 10 feet tall. Its dioecious, meaning there are separate male and female plants. Seed heads can be up to a foot long. If you suspect you have waterhemp, or Palmer amaranth, proper identification is essential. These are Tier 1 weeds under the Noxious Weeds Act and as such must be controlled, without exception. Resistance to multiple herbicide groups means dealing with these weeds in-

crop will be difficult and expensive, they must be eradicated so they don't become widespread. A great guide to help recognize the different Amaranth species is available from OMAFRA, at this link: [Pigweed Species Identification Guide available | Grower \(thegrower.org\)](#). Click on the video and then you can download the pdf and save it. Or contact me and I can send you the pdf. Suspected waterhemp or Palmer amaranth plants can be sent to the Pest Surveillance Initiative lab in Winnipeg where they can do DNA analysis to determine the correct species. MCGA members get one free sample (up to 8 plants). More information is available on their website [Pest Surveillance Initiative \(PSI\) \(mbpestlab.ca\)](#).

## Soil Fertility

Heavy K uptake and deficiency symptoms continue

On sandier soils and/or low K soils we continue to hear of potassium nutrient deficiency symptoms. In corn this shows as yellowing of the outside margins of bottom leaves. The subtle deficiencies in the photo below had a tissue level of 0.32% K versus a sufficiency level of 1.7% K.



The demand for potassium by corn is very high during late stages of vegetative growth, but decline after tasseling (Table below)

Table. Daily nutrient uptake by a 146 bu/ac corn crop in Manitoba (measured 2003)

Stage	Uptake rate lb/ac/day			
	N	P2O5	K2O	S
0-V4	0.05	0.02	0.10	0.00
V4-V8	1.46	0.40	2.83	0.09
V8-VT	1.75	0.58	3.14	0.14
VT-R1	0.79	0.39	-0.19	0.02
R1-R2	1.99	0.49	-0.02	0.10

R2-Dent	1.84	1.91	1.78	0.22
Dent-Mature	0.44	0.61	0.23	0.07

Rarely are symptoms as evident in cereals, but 2 agronomists identified this K deficient wheat below with similar “leaf margin firing” of bottom leaves. Much of Manitoba’s straw crop may be harvested for feed and bedding this fall, which will lead to high K removals from fields. This practice will further deplete soils of potassium unless the manure is returned.



Our Farm Management staff has produced a spreadsheet to help crop farmers assess the nutrient value in straw removal.

<https://www.gov.mb.ca/agriculture/farm-management/production-economics/pubs/calculator-straw-cost.xls>

Nutrient content will vary so growers are encouraged to do a feed or nutrient test to assess actual amounts.

## Forecasts

**Bertha Armyworm** (*Mamestra configurata*). A network of pheromone-baited traps are monitored across the Canadian prairie provinces in June and July to determine levels of bertha armyworm adult moths, and forecast risk of their potentially being economic levels of larvae somewhere in the region. Traps are set up at 99 locations in Manitoba. The traps do not determine risk for the field specifically that the trap is in, but can estimate regional risks, which can help prioritize scouting for larvae. We are over half way through the trapping period, and all the counts in Manitoba are still in the low risk category. The highest cumulative trap count so far is 250 near Snowflake in Central Manitoba. There have been no reports of bertha armyworm larvae yet.

Table 1. Highest cumulative counts of bertha armyworm (*Mamestra configurata*) in pheromone-baited traps for five agricultural regions in Manitoba as of July 21, 2021.

Region	Nearest Town	Trap Count
Northwest	Makaroff	100
	Swan River	74
	Benito	53
	Durban	50
Southwest	Boissevain	134
	Foxwarren	58
	Minto/Fairfax	49
	Inglis	39
Central	Snowflake	250
	Darlingford	113
	Pilot Mound	57
	Dunrea	46
Eastern	Ste. Anne	25
	Stead, River Hills	10
	Beausejour, Tourond	9
	Hadashville	6
Interlake	Arborg	11
	Vidir, Fisher Branch	7
	Teulon, Grosse Isle, Warren	4
	Selkirk	3

0-300 = low risk - green  
 300-900 = uncertain risk - yellow  
 900-1,200 = moderate risk  
 1,200+ = high risk

← Highest cumulative count

Highest counts from bertha armyworm traps in each region and a monitoring summary are updated twice weekly (Fridays and Tuesdays) on the Insect Page of the Manitoba Agriculture and Resource Development website at:

<https://www.gov.mb.ca/agriculture/crops/insects/bertha-armyworm-forecast.html>

**Armyworms** (*Mythimna unipuncta*). A network of 29 pheromone-baited traps were monitored from early-May until mid-July to determine how early and in what levels populations of armyworms have arrive. The trapping period is now complete. Counts were generally quite low. The highest count was 27, from a trap near Elgin in the Southwest.

Table 2. Highest cumulative counts of armyworms in pheromone-baited traps for five agricultural regions in Manitoba as of July 21, 2021.

Region	Nearest Town	Trap Count
Northwest	Russell	1
	Zero in 3 remaining traps	
Southwest	Elgin	27
	Justice	21
	Fairfax	17
	Brookdale	10
Central	St. Leon	23
	Glenboro	2
	Kane, Austin, Calorie	1
Eastern	Beausejour	11
	Lac du Bonnet	8
Interlake	Gimli	0

← Highest cumulative count

A map showing armyworm counts from Manitoba, Eastern Canada, and several Northeast U.S. states is available at: <https://arcg.is/0Lry5a>. Go to the link "TAW". So far there have been no reports of larvae of armyworms being found in Manitoba.

**Spotted-wing drosophila (*Drosophila suzukii*):** Spotted-wing drosophila (SWD) surveillance traps have low levels of SWD present (2-5 per trap) at Portage la Prairie, Barnsley and Deerwood.

Expect SWD population numbers to increase as food sources for SWD from ripening commercial berry fields and wild bush fruit increases. Last weeks hot, dry weather has potentially slowed down population growth.

Potential fruit crops requiring chemical controls:

- 1) Raspberries- time applications when pause in pickings.
- 2) Dwarf sour cherries but only if harvesting extending to late July. For chemical controls see:

[Manitoba Spotted Wing Drosophila Insecticide Products for Fruit Crops 2021](#)

[Manitoba Spotted Wing Drosophila Insecticide Products for Sour Cherry 2021](#)

## Identification Quiz:

**Question:** The insect in the photos below were swept from canola near Carman recently. They seemed to be abundant in the field. Is it a bee? Or a fly? Could there be a connection to grasshoppers? Take a word from each of these clues to get your answer.



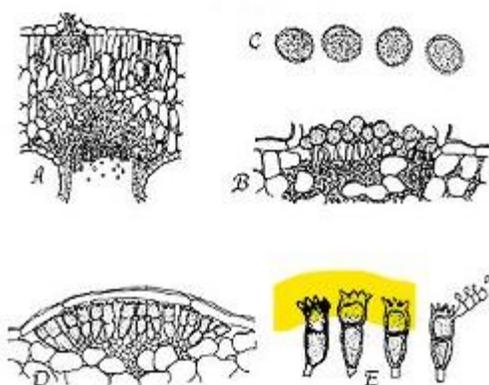
**Answer:** This is the grasshopper bee fly (*Systoechus vulgaris*). They are predators of grasshopper eggs in the larval stage. The adults are fast fliers and good at hovering. Although the mouthparts may look intimidating, bee flies never bite. The mouthparts on the adults are used for nectar feeding. Not surprising that we are seeing lots of them this summer; there would be no shortage of food for the larvae. Lots of grasshopper bee flies laying lots of eggs = less grasshoppers for next year.

There can be a lot of variation in appearance of the grasshopper bee fly. The one in these photos has just a bit of yellow hairs along the sides, but sometimes they are almost totally covered in yellow hairs and may look somewhat like a bumble bee. Some of this variation can be seen in photos on BugGuide:

<https://bugguide.net/node/view/143907/bgimage>

**Disease Q:** A few weeks ago, we asked, “Why is crown rust in oats called ‘crown’ rust?”

Here’s the answer. Under the microscope, the tops of the black, thick-walled spores that survive the winter are bumpy so that they resemble a crown (see illustration).



**Figure 3.** Disease cycle of *Puccinia coronata*, the crown rust fungus, as it appears under a microscope. A, vertical section through a common buckthorn leaf showing a flask-shaped pycnium with receptive hyphae on the upper surface and on aecium or "cluster-cup" (with chains of aeciospores, some being released) on the lower surface; B, section through a uredium on an oat plant with a layer of stalked urediospores which have ruptured the epidermis; C, four urediospores; D, section through a telium on an oat plant with a layer of teliospores which has raised the epidermis; E, four teliospores with crownlike appendages at their apex. The

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To **report observations** on insects, plant pathogens, or weeds that may be of interest or importance to farmers and agronomists in Manitoba, please send messages to the above contacts.

To be placed on an **E-mail list** so you will be notified immediately when new Manitoba Crop Pest Updates are posted, please contact John Gavloski at the address or numbers listed above.