

Manitoba Crop Pest Update

Issue 11: July 29, 2020

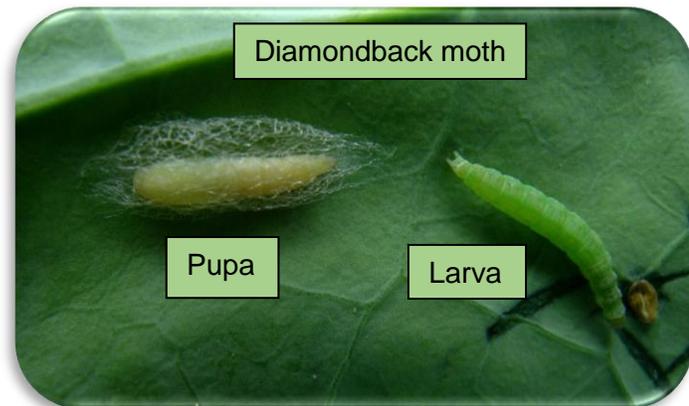
Summary

Insects: Grasshoppers are the insect of greatest concern to field crops in Manitoba currently. Some populations of diamondback moth above economic threshold have been found in eastern Manitoba recently.

Entomology

Diamondback moth on Canola: There have been some reports of levels of diamondback moth around the economic thresholds in the Eastern region. Recall that the highest trap counts from the diamondback moth adult monitoring program in May and June were in the Eastern and South Interlake regions. As canola enters the podding stage, it is good to consider levels of larvae and what they are feeding on, particularly in these regions. 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>

Grasshoppers: Grasshopper levels remain a concern in some areas. There were a couple of reports in the central region of dead grasshoppers clinging to the tops of plants. This is a pathogenic fungus called *Entomophaga grylli* that causes this to happen. Warm, humid conditions favour the build up of this pathogen of grasshoppers.

Some have also been noticing red velvet mites under the wings of some of the grasshoppers. The immature stages of these mites are parasitic on grasshoppers and other insects. The adults prey on insect eggs and other small arthropods.



European corn borer eggs or larvae needed: I am still looking for fields with egg masses of European corn borer that can be collected and tested for potential resistance. If you are scouting for European corn borer, and find egg masses, please contact John Gavloski (see contact information at end of report) so we can get samples for resistance testing. I am trying to collect as many egg masses as possible for this. You can either cut the egg masses from the leaf, place them in a container, and contact me. Or mark the location and let me know of the field location so we can come collect samples.



Egg masses can be found in any corn field, whether Bt corn or non-Bt cultivars. It is when the larvae start feeding that they are killed by the Bt toxins.

Soils

The Agony Continues

Soil issues continue to plague some of Manitoba's corn crop.

Salinity: areas with salinity are showing drought stress. Soil test for certain, but the hints in the photo below are the presence of kochia and when the soil was dug it was moist. Salts soil is often moist, but sensitive crops just cannot access that moisture.



Compaction a) subsoil compaction from heavy traffic and ruts caused during harvest last fall and diagnosed with a soil penetrometer



b) Compaction resulting from tillage of wet soils this spring (actually to fill in those ruts caused last fall). Note platy soil structure and the appearance of flattened roots growing along surfaces rather than through the bulk soil. Your shovel and knife are the best tools for demonstrating this to your client.



Under such restricted root growth nutrient deficiencies can result. In the instance below, lower leaves are firing along the leaf margin – typical of potassium deficiency, yet soils test sufficient.



Forecasts

Bertha Armyworm. 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. 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.

Table 1. Highest cumulative counts of bertha armyworm (*Mamestra configurata*) in pheromone-baited traps for five agricultural regions in Manitoba as of July 28, 2020

Region	Nearest Town	Trap Count
Northwest	Durban	477
	Swan Valley	461
	Bowsman	408
	Grandview	268
Southwest	Foxwarren	300
	Inglis	168
	Minto	151
	Crandall	127
Central	Dunrea	484
	Kilarney	462

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

	Somerset	394
	Snowflake	278
Eastern	Tourond	179
	Stead	66
	Lac du Bonnet	46
	Beausejour	23
Interlake	Vidir	304
	Teulon	174
	Balmoral	154
	Clandeboye	112

Traps to monitor adult moths of bertha armyworm were set up at 83 locations in Manitoba in 2020. 76 traps currently are in the low risk category (less than 300 cumulative moth count), and 7 traps are in the uncertain risk category. Highest counts so far are in the Western part of the Central Region and the Northwest.

The highest trap count is 484 near Dunrea in Central Manitoba.

Some agronomists have reported finding bertha armyworm, but mainly at low levels so far. To help determine the economics of bertha armyworm populations, a loss of 0.058 bushels/acre for each larva/m² can be expected. Multiplying 0.058 X average number of larvae per m² X expected seed value (dollars/bushel) will determine the economic loss (in dollars/acre) due to the larvae. This generally works out to be about 20 to 30 larvae per m², but this calculation can be used to fine-tune the threshold for your situation.

Grasshopper Survey: A reminder for those participating in the grasshopper survey, that counts are done during August, when the majority of grasshoppers are in the adult stage.

Agronomists and farmers who would also be interested in estimating grasshopper numbers in or around the fields they are in and have this information included in the survey are encouraged to see the survey protocol (at the link below) for more details of the survey and where to send data.

Estimates of grasshopper levels can be collected during regular farm visits. "Estimates" of grasshopper populations is stressed as it will not be possible to accurately count grasshoppers along a field edge or ditch area as they will be moving around as you get near the area of the count. But estimates of what is present gives us some idea of the relative numbers that are present in different areas.

Data from the survey, along with weather data during the egg laying period of the grasshoppers, is used to produce a forecast for 2021.

The protocol and data sheet for the grasshopper survey is at:

<http://www.gov.mb.ca/agriculture/crops/insects/mb-grasshopper-survey.html>

Identification Quiz:

Question: The insect in the photo below can get quite large and is occasionally found while people are crop scouting. What is it? Is it a threat to crops in Manitoba?



Photo by Ami Sigurdson

Answer: This is the Mormon cricket (*Anabrus simplex*). They are a large insect that can grow to almost 3 inches in length. They tend to be most common in rangelands dominated by sagebrush and forbs.

Despite its name, the Mormon cricket is actually a type of katydid, not a cricket. It takes its name from Mormon settlers in Utah.

They are not considered a pest here, but can be a significant pest in some parts of the western United States, such as Utah, Idaho, and Nevada. They are flightless, but in some parts of their range they can form migratory swarms or "bands" that travel on foot, eating almost anything (both plant and sometimes small animal) in their paths. Here they are usually non-migratory, and coloring is commonly of lighter colors (often tan or green). Individuals in bands are most commonly of a deep brown, often nearly black color.

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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.