Manitoba Crop Pest Update
Issue 9: July 7, 2021

Manitoba Agriculture

Summary

Insects: Grasshoppers are currently the insect of greatest concern for farmers and agronomists. Some report that control has mainly been to field borders, although some full field applications of insecticides have occurred. Concerns regarding aphids in cereals in the Eastern region are starting to subside as the crop advances. In some fields, predators did a good job of controlling aphids. Alfalfa weevil is still a concern in some areas.

Diseases: Some bacterial blight in dry beans and downy mildew in peas has been noted.

Weeds: In-crop herbicide spraying is winding down, we are still seeing some spraying going on in late-seeded canola crops. With the hot weather these fields will be prematurely bolting, so there's very little time left to spray. Some soybean fields are getting a final glyphosate spray, these need to be done very soon as we've seen fields with pods forming.

Entomology

Blister beetles in alfalfa: Although blister beetles are generally not serious pests of field crops based on their defoliation, you don't want them ending up in hay being fed to livestock. They can be of particular concern in hay fed to horses, but are also toxic to cattle and sheep. When grasshopper populations rise we often do see an increase in blister beetle levels, as juveniles of some species specialize in feeding on grasshopper eggs.

The toxin in blister beetles, called cantharidin, is released when the beetles are crushed, and cantharidin remains active even when the beetles are killed. How long the toxin remains active is unknown. Cantharidin is relatively stable, and levels don't reduce quickly in stored hay. Symptoms of toxicity in horses include sores on the tongue and in the mouth, depression, colic, sweating, diarrhea, blood in the feces and frequent urination. Cattle also may exhibit sores in their mouth.

What do you do if you are noticing blister beetles in alfalfa that is going to be cut as hay? Here are a few tips:

- Check prior to cutting to see if and where blister beetles are present. Note that blister beetles are gregarious and may be concentrated in specific areas. Blister beetles may also be more abundant near field margins in alfalfa.
- Avoid using hay conditioners or crimpers. These implements kill beetles at the time of cutting and prevent beetles from moving out of the alfalfa as it dries.
- Avoiding wheel traffic on freshly cut alfalfa as much as possible. Beetles are also killed and trapped when forage is driven on before the beetles have had time to escape. If left alone, the vast majority of blister beetles leave alfalfa shortly after cutting.
- Allow cut hay to fully dry before raking to encourage the beetles to move out of the hay. Raking may dislodge dead beetles from hay. Turning the windrows may be helpful to get blister beetles to move out.
- If practical, cut alfalfa at less than 10% bloom and/or late in the season (mid-August to early September) in years when blister beetle levels are high.
- Chemical control is generally not recommended at harvest because dead beetles could be incorporated into cured hay instead of falling onto the ground.

Note that there are different species of blister beetles, and the amount of cantharidin, the chemical that can be toxic to livestock, varies with the species. One of the species that has higher levels and is the focus of some of the blister beetle information from the U.S. is the striped blister beetle, *Epicauta vittata*. Note that we do not have this species of blister beetle in Manitoba. It has been collected from all eastern states west to, and including, South Dakota, Nebraska, Kansas and Oklahoma. In Canada it is known from Quebec and Ontario. Although levels of cantharidin may not be as high in some of our local species as they are in the striped blister beetle, it is still good to be cautious when harvesting hay, and if blister beetles are present to take steps to minimize them ending up in the hay.

Bertha armyworms needed: A field with noticeable, or ideally high, levels of bertha armyworm is needed for a research trial. Ideally within about 90 minutes of Elm Creek. If you come across any fields that could be used for the trial, please let me know.

Grasshopper development: Model simulations were used to estimate grasshopper development as of July 4, 2021. Above normal temperatures have been responsible for advanced development of eggs and nymphs across southern Manitoba. Grasshopper populations across southern Manitoba are predicted to be mostly in the 4th and 5th instar. Simulations indicate that 10-30% of the population are adults.

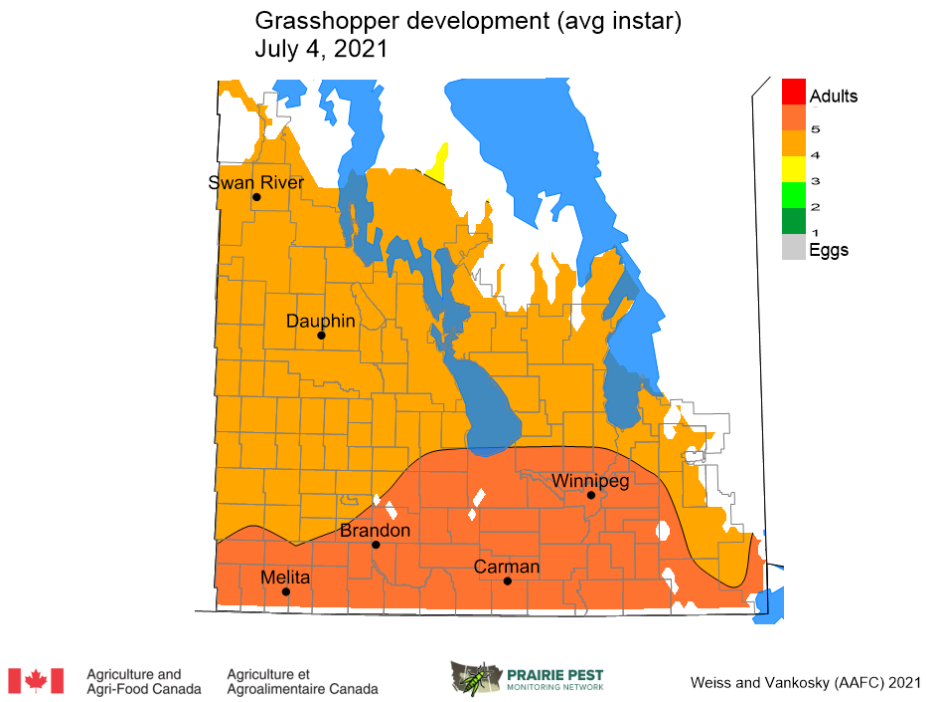

Figure 1. Predicted grasshopper (*Melanoplus sanguinipes*) development, presented as the average instar, across Manitoba as of July 4, 2021.

How can dry weather contribute to grasshopper concerns in crops: There are a few ways that dry conditions can lead to higher grasshopper populations, and the grasshoppers that are present moving into crops.

- Cool wet weather and heavy rain in the late-spring can sometimes kill significant numbers of grasshopper nymphs. Warm and dry summer and fall conditions will mean that there has been more opportunity for grasshoppers to lay their maximum amount of eggs.
- Our pest species of grasshoppers also feed on many non-crop plants. Reduced natural vegetation, from drought conditions, can force grasshoppers to move to cultivated crops.
- A pathogenic fungus, *Entomophaga grylli*, can help control grasshoppers under warm, humid conditions.

Weeds

Now is the time to make note of weeds that have escaped control, and try to figure out why. There are many reasons why weeds might not be controlled, possibly a spray miss, plugged nozzle, dust on the weeds, poor coverage, weeds too big at spraying time, weeds outside the spectrum of what the herbicide controls… If you've eliminated all other possibilities then you need to consider that herbicide resistance could be the culprit. While there are many cases of herbicide resistance in the Prairies, kochia, waterhemp/Palmer amaranth, and wild oats are of particular concern in MB. Make note of where these weeds appear, positively ID them and test for resistance to know what you're up against.

Kochia and waterhemp/Palmer amaranth can be sampled green and tested by the Pest Surveillance Initiative lab in Winnipeg. PSI can test kochia for glyphosate resistance and for amaranth species like waterhemp and Palmer amaranth they perform DNA analysis to identify the correct species. This is crucial as there are several amaranth species, some of which are not weed threats, and they are all very hard to tell apart, especially when small. Presence of waterhemp and Palmer amaranth can be economically devastating as they are competitive and resistant to multiple herbicide groups, so we need to positively ID any amaranth species we find. Members of the Manitoba Canola Growers Association receive one free test for Amaranth species ID as well as glyphosate resistance testing in kochia. Check out their website at Pest Surveillance Initiative (PSI) (mbpestlab.ca) for sampling details. Contact MB ARD if you have suspected waterhemp or Palmer amaranth plants, we are working with colleagues in Ontario and can send samples there to confirm herbicide resistance.

Make note of wild oat patches that have escaped control and destroy them to prevent seed set, if possible. If it's not possible to prevent seed set then for now mark the patches and plan to gather seed closer to harvest. We will have more information on what to do with resistant wild oat seed in future reports.

Forecasts

Armyworms (*Mythimna unipuncta*). A network of 29 pheromone-baited traps are being monitored from early-May until mid-July to determine how early and in what levels populations of armyworms have arrive. So far counts have generally been quite low. The highest count is 20, from a trap near St. Leon in the Central region.

Table 2. Highest cumulative counts of armyworms in pheromone-baited traps for five agricultural regions in Manitoba as of July 6, 2021.

Region	Nearest Town	Trap Count
Northwest	0 in all traps so far	
Southwest	Elgin	10
	Fairfax	6
	Brookdale	4
	Justice, Minto	1
Central	St. Leon	20
	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.

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 in about 90 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 about 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 160 near Snowflake in Central Manitoba.

Table 1. Highest cumulative counts of bertha armyworm (*Mamestra configurata*) in pheromone-baited traps for five agricultural regions in Manitoba as of July 6, 2021.

Region	Nearest Town	Trap Count
Northwest	Bowsman	23
	Durban	22
	Shortdale	20
	Makaroff	15
Southwest	Minto/Fairfax	49
	Dunrea	30
	Boissevain	25
	Boissevain	13
Central	Snowflake	160
	Darlingford	31
	Emerson	30
	St.Joseph	29
Eastern	Ste. Anne	18
	Stead, River Hills	10
	Beausejour	9
	Hadashville	6
Interlake	Arborg	5
	Vidir	5
	Fisher Branch	2
	Remaining traps all 0	

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

Spotted-wing drosophila: Traps for spotted-wing drosophila are strategically located beside berry fields/orchards at Portage la Prairie, near Barnsley (RM of Dufferin) and near Deerwood with 2 traps per location. Samples are collected and analyzed weekly. The Barnsley location has detected 2 SWD females from the June 20-30 sampling period, with zero SWD at Portage la Prairie and Deerwood. The surveillance program uses apple cider vinegar traps (with 1-2 drops of unscented dish soap) which are an inexpensive and effective means to determine if SWD are present but not necessarily overall population levels.

Expect spotted-wing drosophila numbers to increase as food sources from ripening commercial berry fields increases.

Identification Quiz:

Question: Note the green larvae with white stripes down the back (left), lace-like cocoons (middle), and beetle (right) in the photo below. These were all collected from an alfalfa field. What are these? Are they all the same insect?

Answer: These are all various stages of the alfalfa weevil, *Hypera postica*.

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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.