

Manitoba Crop Pest Update

Issue 4: June 2, 2021

Summary

Insects: Flea beetles are starting to feed more intensively, with the relatively warm, dry and calm days we have been having. Some foliar applications of insecticides have occurred. Some insecticide applications have occurred for cutworms, but it seems to be limited to a few fields so far. Some have commented that cutworm levels seem lower than recent years, but now is the time to be scouting for them. Some wireworm damage to cereals was also reported this week. Young grasshoppers are being noticed, but hatch is in the early stages.

Diseases: There is not much new to report on the disease front, at least not concerning pathogenic diseases. There have been plenty of abiotic stresses that might mimic pathogenic disease; these include frost, extreme heat, ongoing surface soil dryness, and lower than normal growing degree day accumulation.

Weeds: Herbicide spraying has been challenging in the past week due to frost(s), and looking forward extreme heat is forecast. Know the temperature limits on the herbicide you plan to spray, and ID the weeds that are coming up so you make sure you have the right product.

Entomology

Aster leafhoppers being noted: We have been able to find aster leafhoppers when sweeping ditches in the Carman and Somerset area. We currently don't know to what degree they are infected with the pathogen for aster yellows, and have sent some in for testing. Note the red spec behind the right eye of the aster leafhopper in this photo. Any idea what this mite be? This is a red velvet mite. They are active predators as adults, but as early instars are often parasites on insects and some arachnids.



Don't Confuse Leafhoppers for Young Grasshoppers: Grasshoppers are not the only "hoppers" you may see while scouting. Leafhoppers will jump as well. And there are many species of leafhoppers, 1,097 species have been recorded in Canada. Don't panic, it is just 2 species that are potential crop pests here in Manitoba. At times there can be a lot of different species, mainly of non-pest species of leafhoppers, in the same areas where people do their early-season scouting for grasshoppers. The photo below shows a young grasshopper nymph and an adult leafhopper. They will both hop when

disturbed. Note the larger legs on the grasshopper. Do not mistake leafhoppers for young grasshoppers when doing your scouting for young grasshoppers.



Flea Beetle Management and Temperature – A reminder that if you do need to apply foliar insecticides for flea beetles, and are using a pyrethroid insecticide (where there are high temperature restrictions), the ideal day for control would be when it is between about 15 and 25°C, and not too windy. Don't be applying pyrethroids (Decis, Mako, Matador/Silencer/Labamba, Up-Cyde/Ship, Pounce/Perm-up/IPCO Syncro/Ambush) when the temperatures are in the high 20's or 30's.

Wireworms in cereals: Wireworm in wheat were reported this week from the Central, Northwest and Interlake regions. It is too late to do anything this year in fields where plant damage is noted, but good to take note of where these fields are for next year.



Photos by Logan Pizzezy –

In the second photo, note the bare patches in this wheat, from where wireworms were being found.

Plant Pathology

We are intrigued by John Gavloski's quiz this week focused on beneficial insects. In the coming weeks, David Kaminski and Kim Brown will be prepping for similar quizzes on beneficial microorganisms that act on plant pathogens or economic insect pests, and weeds that might have beneficial effects, at least when they are not competing with your field crops. Stay tuned.

We are gearing up to begin posting the daily **Fusarium Risk Forecast maps** so that they are available for any winter wheat fields that might soon be approaching heading. We realize that winter survival has been poor to fair and an open canopy, under dry conditions, should not be favorable for Fusarium Head Blight infection. Nevertheless, we know that things can change rapidly in Manitoba with respect to precipitation and soil moisture. Our target start date for the first maps is Monday, June 14th.

Weeds

What a week! Never thought I'd be talking about spraying after a frost and spraying in extreme heat within days of those occurrences, but here we go. Last week's frost hit some areas hard, affecting weeds and crops. When spraying after a frost wait at least a day to let plants recover, the harder the frost the longer the recovery time. Multiple frosts also mean a longer recovery time. We'd like to see at least 60% of leaf tissue alive and actively growing before we spray. Looking forward now we have extreme heat warnings and temperatures are not great for spraying in the upcoming days. Same as spraying after a frost, both weeds and crop need to be actively growing. We're risking poor weed control when spraying in hot, dry conditions and can see more crop damage as well. Weeds may be hardened off by the recent stresses from frost, wind, heat and dry conditions, and crops are growing under these same stresses. Spraying above 27-28 degrees is not recommended, check under "Effects of Growing Conditions" in the Guide to Crop Protection for product-specific temperature restrictions.

Weed ID:

Tough to identify grasses when they're just coming up, here's some pics. Is it barnyard grass? Green foxtail?? Yellow Foxtail??? Dig it up, look at the seed (if its there), bend that top leaf back and look for a ligule and/or auricles.



Based on the seed its not barnyard grass, and the hairs seem quite long and pubescent so I think this is yellow foxtail. Still hard to be 100% certain so I'll revisit these weeds in a few days, a bigger plant with another leaf or two will better show the definitive characteristics of yellow versus green foxtail.

Soil Fertility and Salts

Poor cereal stands from fertilizer injury

With such continued dry soil conditions we have been expecting to hear of seedburn from excessive seedplaced fertilizer. Those calls are just being received now – reports of spotty, uneven emerging stands. Upon digging a range of symptoms are observed ranging from lack of all root and shoot, to distorted shoots, leafing out underground, and perfect plants. Some photos received from agronomists are posted here:



Figures 1-2. Wheat seed with 25 lb N/ac seedplaced. (photos T. Drummond)



Figure 3-4, Wheat seed with 38 lb N/ac seedplaced. (photos B. Sigvaldason)



Figure 5-6, Wheat seed suffering seedplaced fertilizer in 2020. Favourable moisture ultimately produced a good yielding crop.

Additional pictures of symptoms and more detailed explanation can be seen at:

[Injury Symptoms from Seed-Placed Fertilizer](#) (PDF 960 KB)

Some of the worst injury reported this spring is where fall traffic left the soil harder and compacted. Last year some wheat stands were damaged to below 45% of a “unfertilized check area” (Figures 5-6), but stands were still above 18 plants/sq foot and timely rains produced a high yielding crop. Today farmers seldom leave such check areas, so it just makes it harder for agronomists to identify and then convince farmers of this self-inflicted injury.

Other soil causes of uneven, injured cereal stands

Some of these spotty stands may be due to salts, not necessarily from seedplaced fertilizer. These photos (Fig 7-9) below of the uneven emergence on headlands – droughty, compacted, cloddy or salts? Closer inspection shows some salt accumulation on surface and those indicator weeds – kochia and oak-leaved goosefoot. The cereals will struggle but establish here. Corn and soybeans are much less tolerant and we’d expect barren headlands.



Figures 7-9. Poorer wheat establishment on salty headlands.



Nutrient deficiencies in dry weather

The nutrient most thwarted by dry, cold soils is potassium. Potassium is taken up by root hairs via diffusion from the soil solution coating soil particles. Under dry conditions this film is thinner and the path to root hairs is more tortuous or “crooked”. This slows uptake – as does cold soils. So the dilemma – we don’t wish to use more salty fertilizer like potash (KCl) in the seedrow, yet these tend to be the very conditions when cereals respond to potassium (K), even in high K testing soils.

Perhaps due to our dry spring we saw some canola swath syndrome` (potassium deficiency) showing up this year in winter cereals like wheat or triticale. That’s where the crop under the previous years canola swath is slightly more K nourished than crop between swaths. It will be apparent in winter cereals now, in spring cereals in a couple weeks and in soybeans in August. It’s a heads up to get some fall soil sampling done and potash or manure applied.



Figure 10. Canola swath syndrome in winter wheat – photo from R. Storoschuk

Finally – John Heard’s favourite bug!

Well of course the one that helps identify patches of potassium (K) deficient soybeans – the soybean aphid (Figures 11-12). She prefers to feed on the sap of K deficient soybeans plants and reproduces faster on them. If you are scouting later in the summer and come across such patches of soybean aphids (your pants will be sticky from the sap they leave on the leaves), plan to revisit in the fall for some soil testing.



Figure 11-12. Soybean aphids and potassium deficiency symptoms on soybeans.



Forecasts

Bertha armyworm traps: A reminder for those setting up traps for bertha armyworm that traps should be set up next week, June 6-12.

Model simulations to May 30, 2021 showed that pupal development for bertha armyworm was 45-60% complete across the prairies. Ideally, traps for bertha armyworm should be placed in fields when pupal development is approximately 80%. This is projected to happen June 6 in Winnipeg, and June 8 in Brandon, with adult emergence projected to begin June 16 in Winnipeg and June 17 in Brandon. Recent warm conditions will result in rapid development of bertha armyworm pupae. Thus, setting the traps for bertha armyworms up next week, June 6-12, is ideal.

Diamondback moth. A network of pheromone-baited traps are monitored across the Canadian prairie provinces in May and June to determine how early and in what levels populations of diamondback moth arrive. In spite of some strong winds from the south, note that trap counts generally have been low so far. Some slightly higher counts started to show up in the Eastern region last week.

Table 1. Highest cumulative counts of diamondback moth (*Plutella xylostella*) in pheromone-baited traps for five agricultural regions in Manitoba as of June 2, 2021.

Region	Nearest Town	Trap Count
Northwest	The Pas	8
	Dropmore	2
	Shell Valley	2
	The Pas, Russell, Merridale, Grandview	1
Southwest	Douglas	1
	Douglas	1
	Rest of traps with 0	
Central	Altona	2
	Austin	1
	Rest of traps with 0	
Eastern	Beausejour	17
	Hadashville	12
	River Hills	12
	Tourond	8
Interlake	Selkirk	5
	Arborg	2
	Stonewall, Warren	1
	Clandeboye, Vidir	1

Still only 2 moths in total out of 24 traps reporting in Southwest.

Just 3 moth out of 30 traps reporting in the Central region

← Highest cumulative count

Highest counts 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/diamondback-moth-forecast.html>

Armyworms (*Mythimna unipuncta*). As a new monitoring program this year in Manitoba, 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. All counts have been low so far.

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

Region	Nearest Town	Trap Count
Northwest	0 in all traps so far	
Southwest	Boissevain	4
	Fairfax	3
	Minto	2
	Elgin	1
	Remaining 6 traps in southwest all reporting 0	
Central	All 7 traps reporting counts of 0	
Eastern	Lac du Bonnet	3
	Beausejour	1
Interlake	Trap reporting 0	

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". Those within the Manitoba government wanting to access this website, you may have to do it from your phones, as we seem to be blocked from accessing it on our computers.

Publication Update

Addendum for Guide to Field Crop Protection: The addendum to the Guide to Field Crop protection is now posted on the Manitoba Agriculture and Resource Development website. This is published each spring, and provides an update on new products, label expansion and changes that have occurred since the guide was produced in the winter. The full Guide to Field Crop Protection, including the addendum, is available at the following link:

<https://www.gov.mb.ca/agriculture/crops/guides-and-publications/index.html>

Identification Quiz:

Tuesday June 8 is National Insect Appreciation Day. Although we do need to manage some insects on our crops at times, overall insects still add great value to our farms, yards, etc. through their services as pollinators, predators, parasitoids, decomposers, improving soil health, etc. To acknowledge some of these beneficial roles, and reasons we should appreciate insects, three of our summer students at Manitoba Agriculture and Resource Development have prepared a special Identification Quiz this week, highlighting their favorite beneficial insects. See how well you do.

Question 1 – From Shelby Orchard, Entomology Summer Student.



What are these insects with the lacy wings in this photograph?

Answer: This is a green lacewing. The picture above shows the adult stage which is identified by looking at the green lacy wings and gold eyes. As pretty as the adult stage is, the larval stage is the stage of greatest interest to farmers. The larvae are light brown and alligator-like in shape, closely resembling lady beetle larvae (another beneficial insect). These voracious little larvae are known to feed on many crop pests including aphids, thrips, mites, small caterpillars, and insect eggs. The adults, on the other hand, usually just feed on nectar and pollen. The eggs of green lacewings are also quite unique. White eggs are laid singly on hair-like stalks on the underside of leaves. Keep an eye out for all 3 of these distinct stages when out scouting!

Question 2 – From Vanessa Alexander, Weeds and Cereals Summer Student

This is a multiple choice question.
The insect in the photo below is:

- A) A bee
- B) A wasp
- C) A hover fly
- D) None of the above

Hint: How many wings can you see?

Answer: This is a species of hover fly. There are 539 species of hover flies in Canada. Adult hover flies resembles bees or wasps, however unlike bees and wasps, which have two pairs of wings, hover flies only have one pair. Their abdomen typically has yellow and black stripes, while some can be red and black or even a vibrant green. Other features that tell them apart from bees are their large eyes, short antenna, wide waist, as well as no stinger. The hover flies are very beneficial in their adult stage where they are seen hovering around flowers, feeding on pollen and nectar, making them very effective pollinators. The hover fly larva on the other hand are small, green or brown maggots that feed on aphids and small caterpillars. This larva stage is also beneficial because they can control aphid populations, which can be common insects found in cereals, soybeans and many other crops. This makes hover flies an excellent way to control aphids and pollinate crops. Look out for these friendly bee imposters who won't hurt you, only the aphids!

Question 3 – From Brynne Riehl, Plant Pathology Summer Student

What is the metallic beetle in this photo?

Answer: This beetle belongs to the genus *Calosoma*. It is a genus of ground beetles that are very large in size, and typically are found within crops or gardens. These beetles hide under the soil, or under rocks and mulch. They can live for up to four years, and spend their winters in the soil. This beetle is beneficial because it typically hunts for caterpillars that will cause damage to the crop. These beetles will also eat grubs, cutworms, fly maggots, other beetles, earthworms as well as other small insects that live within the soil. These beetles can easily eat their body weight daily! Keep an eye out for these metallic beetles in your fields!

Note – The beetle in this photo was kept as a workplace pet, named Peter, and consumed several cutworms or grubs a day. It was a challenge to keep it supplied with food.

Compiled by:

Manitoba Agriculture and Resource Development Pest Management Specialists:

John Gavloski, Entomologist
Phone: (204) 750-0594

David Kaminski, Field Crop Pathologist
Phone: (204) 750-4248

Kim Brown, Weeds Specialist
Phone: (431) 344-0239

John Heard, Crop Nutrition Specialist
Phone: (204) 745-8093

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.