Manitoba Crop Pest Update
Issue 8: July 13, 2022

Manitoba Agriculture

Summary

Insects: Economic populations of pea aphids on field peas have been reported from the Southwest and Central regions, and some insecticide applications have occurred. Grasshopper levels continue to be a concern in some areas.

Diseases: There is now a LOT going on in the disease world: bacterial blights in oats and peas, blackleg on lowermost leaves of canola, Septoria brown spot on unifoliate leaves of soybean, as well as higher risk of Fusarium head blight in small grain cereals and potential risk of Sclerotinia in canola.

Weeds: Warm weather over the past week has advanced crops rapidly, and unfortunately the weeds aren't slowing down. The majority of herbicide spraying is done, with a few last applications to late seeded canola or a second spray in corn or soybeans. Warm season weeds like green and yellow foxtail and redroot pigweed are taking off and there are some reports of poor control of these. Warm temperatures and frequent rain have made ideal growing conditions for all C4 plants, both crops and weeds. Late flushes after herbicides were applied would not be controlled, and if weeds were bigger and toward the end of optimum staging then control could be less than optimum.

Entomology

Pea aphids

Pea aphids are being found at economic levels in some areas of the Southwest and Central regions. Early flowering is a good time to look for aphids in peas, either by using a sweep net, or counting aphids on plant tips.


Pea aphid on alfalfa

Timing of scouting for aphids in peas: Field Peas should be checked for aphid levels at the beginning of flowering. Take 180° sweeps or check at least 5, 8-inch (20 cm) plant tips along four well-spaced stops in the field. Counts should be at least 50 m (150 ft.) apart and observations should be made well into the centre of the field.

Economic thresholds for pea aphids: The economic threshold in peas is 2 to 3 aphids per 8-inch (20 cm) plant tip, or 9 to 12 aphids per sweep, at flowering. If the economic threshold is exceeded, a

single application of insecticide when 50% of plants have produced some young pods will protect the crop against yield loss and be cost-effective. Research in Manitoba has shown that insecticides applied when pods first form protects pea yield better than earlier or later applications. Control at the early pod stage provides protection through the pod formation and elongation stages, which are very sensitive to aphid damage.

The following table relates the yield loss in peas for average aphid counts per sweep or per 20-cm tip of a field pea stem when about 25 percent of the crop has begun to flower.

Aphids per sweep	Aphids per tip	% yield loss
7	1	3.4
10	2	4.9
12	3	6.1
15	4	7.1
16	5	8.0
18	6	8.8
20	7	9.6
21	8	10.3

More information on aphids in pulse crops can be found on the factsheet “Pea Aphids on Peas, Fababeans and Lentils”:
https://www.gov.mb.ca/agriculture/crops/insects/aphids-on-peas.html

Plant Pathology

Bacterial blight (L) was evident on the oat-on-oat stubble demo at last week’s Crop Diagnostic School. The picture above though is from a bundle of Camden oats brought to me by a company rep who was attending the school. Larger lesions have the characteristic reflective glint. This occurs where bacteria have oozed out onto the leaf surface, after rainfall or heavy dew, and then dried in the sun. The symptoms in this case were from top (flag) to bottom. Of course fungicides will not limit further development. Unfortunately, “what you see is what you’ve got.”

On the unifoliate leaves of our soybeans (R), the brown spots with slight yellow haloes are Septoria Brown Spot. These soybeans were planted May 17th and are now at R2 stage. It was in these same plots, where Laura Schmidt (agronomist with MPSG) also found soybean aphids.

Finally **blackleg** is “out there” on canola (mostly) lower leaves. Photo on the left is from Westar – an old variety no longer grown commercially, but still used as a check in blackleg nurseries for testing new genetics. Photo on the right is field symptoms on an R-rated variety, grown 2 years after the last canola crop.

On the underside of a blackleg lesion, you might see the evidence that its moving down the petiole toward the stem. I hope many of you caught Dane Froese’s excellent presentation at CDS on **major gene resistance,** which some seed companies have begun to show on seed bag labels.

Quiz from 25th Manitoba Crop Diagnostic – Sclerotinia & Fusarium Head Blight

Here is a quiz that we offered in the Disease Section at Crop Diagnostic School 2022. Participants completed it on the basis of our discussion concerning the two most important “returning disease concerns,” now that the prolonged “dry period” of 2018-2021 has broken. You will have to answer it *cold*, without the benefit of instruction. However, you can find the answer key at the end of the quiz.

Sclerotinia (and Blackleg)

1. **In which crop are you most likely to find apothecia?**
   - Canola on soybean stubble
   - Soybean on corn stubble
   - Flax on oat stubble
   - Cereal on canola stubble
2. **In sunflowers, what are the ways the crop can be infected with sclerotinia? (more than 1 answer)**
   - Head rot vis ascospores
   - Ascospores landing on lower leaves

- Direct root infection by mycelium
- Mid-stalk rot from ascospores and physical injury

3. **Are these apothecia?**

- True
- False

4. **What 2 diseases are evident on these leaves?**
   - Downy mildew
   - Blackleg
   - Sclerotinia
   - Alternaria

5. **What is the diagnostic feature of a blackleg infection?**

Fusarium Head Blight

1. **In which cereal are symptoms of FHB infection <u>least</u> obvious?**
   - Wheat
   - Oats
   - Barley
   - Corn
2. **What are the ideal weather conditions for FHB infection?**

3. **In the picture to the right, the orange spore mass is sexually produced.**
    - True
    - False

4. **At what stage is fungicide application most effective? (more than 1 answer)**
    - 20% flower
    - Flag leaf
    - Heads ½ emerged
    - Onset of flowering
5. **What is a general name for toxins present after harvest?**

Crop Pathology Quiz Answers

Sclerotinia

1. Cereal on canola stubble
2. Head rot via ascospores, Direct root infection by mycelium, Mid-stalk rot from ascospores and physical injury
3. False
4. Sclerotinia and Blackleg
5. Pycnidia within a circular lesion, sometimes with a yellow halo

Fusarium Head Blight

1. Oats
2. High relative humidity, Moderate temperatures, Frequent rainfall
3. False
4. Heads ½ emerged, Onset of flowering
5. Mycotoxins – DON, NIV

Weeds

Post –spray scouting to assess weed control is crucial, especially following glyphosate application. Regular weekly scouting after spraying is recommended to gauge herbicide performance, depending on the weed species and size at spraying determines how quickly they die. We need to be aware of any weed that isn't completely dead after it was hit with glyphosate. Some weeds will die quickly, others more slowly, and some may look like they're dying but end up coming back. There could be multiple reasons why there are survivors post-glyphosate, rule out mechanical issues (spray misses,

plugged nozzles, etc), hard water, weeds emerging after application, weeds sprayed beyond staging, inappropriate rate for the weed species, etc. If these reasons are eliminated then we should suspect glyphosate resistance, and act accordingly. Do not respray with glyphosate, there's no point. Any weeds escaping glyphosate must be controlled by other methods and we can't let them go to seed. Pull weeds and remove them from the field, and/or mow patches – the amount of crop lost is small compared to the potential future losses from resistance weeds.

Test for glyphosate resistance to know what we're up against. Kochia can be sampled in-season and sent to the PSI lab Pest Surveillance Initiative (PSI) (mbpestlab.ca) in Winnipeg for glyphosate-resistance testing. Contact me for any pigweeds with suspected-glyphosate resistance, we are working with the University of Manitoba and a lab in Ontario to test pigweed samples in-season. For all other weeds with suspected resistance - save some seed at harvest and it can be sent away to be grown out and tested. There are currently 56 weed species resistant to glyphosate world- wide and we are dealing with wide-spread kochia resistance in MB. We need to be watching for species like waterhemp, Palmer amaranth, Canada fleabane and downy brome as these weeds are glyphosate-resistant in neighboring states and provinces.

Forecasts

Armyworms (*Mythimna unipuncta*). Larvae of armyworms can cause significant feeding injury to cereals and forage grasses when levels are abundant. Adult moths of armyworms migrate to Manitoba in the spring from overwintering sites from the southern US. A network of pheromone-baited traps are being monitored at 11 locations from early-May until mid-July to determine how early and in what levels populations of armyworms have arrive. Some moderate counts have occurred from traps in Eastern and Central Manitoba. The highest cumulative count is 88, from a trap near Beausejour in the Eastern region. So far there have been no reports of larvae of armyworms being found in Manitoba.

Table 2. Highest cumulative counts of armyworms in pheromone-baited traps for agricultural regions in Manitoba as of July 12, 2022.

Region	Nearest Town	Trap Count
Northwest	Grandview	3
	Silver Beach	0
Southwest	Brandon	16
	Brookdale	9
Central	Rosenfeld	63
	Halbstadt	35
	Rosebank	18
Eastern	Beausejour	88
	Dominion City	65

← Highest cumulative count

	Lac du Bonnet	55
	Randolph	1

Highest counts in each region of Manitoba and a monitoring summary are updated weekly on the Insect Page of the Manitoba Agriculture website at: https://www.gov.mb.ca/agriculture/crops/insects/pubs/true-armyworm-trap-results-july12-2022.pdf

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".

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 48 locations in Manitoba this year. 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. All the cumulative counts in Manitoba are currently in the low risk category. The highest cumulative trap count so far is 51 near Glenboro in Southwest Manitoba.

Table 1. Highest cumulative counts of bertha armyworm (*Mamestra configurata*) in pheromone-baited traps for five agricultural regions in Manitoba as of July 12, 2022.

Region	Nearest Town	Trap Count
Northwest	Durban	48
	Birch River	24
	Dropmore, Minitonas	19
	Shell Valley	11
Southwest	Glenboro	51
	Boissevain	31
	Miniota	30
	Killarney	29
Central	Belmont	24
	Rosenort	19
	Altona, Horndean	14
	Baldur	13
Eastern	Whitemouth, Beausejour	6
	Stead	5
	Ste.Anne	4
Interlake	Arborg	2

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 weekly on the Insect Page of the Manitoba Agriculture website at: https://www.gov.mb.ca/agriculture/crops/insects/bertha-armyworm-forecast.html

Identification Quiz:

Question: What do the three beetles in the photo below all have in common?

Answer: These are all species of blister beetles. The two species on the left belong to the genus *Epicauta*, the young of which specialize on feeding on grasshopper eggs. The species on the right is the Nuttall's blister beetle, *Lytta nuttalli*.

Blister beetles get their name from a toxin called cantharidin found in their body fluids. When the adult beetle is disturbed, “blood” containing this toxin is exuded from the leg joints. The fluid can cause blisters when it comes in contact with the skin. There are 46 species of blister beetles in Canada, and 19 species in Manitoba. They belong to a family of beetles called Meloidae.

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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.