

Manitoba Crop Pest Update

Issue 4: June 12, 2019



Summary

Insects: Flea beetles and cutworms continue to be the main insects of concern, although populations of the damaging stages are declining and the crops are becoming less susceptible. Some fields have had multiple insecticide applications for flea beetles. Grasshopper populations are being monitored along field edges and in areas with abundant green vegetation late last summer.

Diseases: Tan spot showed up – it's the first pathogenic disease to appear in wheat. Abiotic stresses were again the overriding impact on crop health. This week we release our first risk forecast for Fusarium head blight for 2019.

Weeds: Is it too hot or too cold? Frost maps and information for June 12 are being circulated. A reminder that many weeds will slow their growth and several herbicides are less effective 3 days after a frost. Patience may provide better weed control. Heat stress is also likely to reduce herbicide efficacy, so try to avoid spraying in the heat of the day.

Entomology

Cutworms – Much like flea beetles, some agronomists have commented that the cutworm levels are extremely high this year. There has been insecticide applications for cutworms in many crops, and in several instances people have reported fields that had to be reseeded because of cutworms.

How long will they be active? One of the common questions this past week was how long cutworms will be active. Some cutworms are turning to pupae, so the level of larvae is decreasing, and hopefully within the next week will start to get noticeably smaller in many fields. In some fields the stages are variable and it will take a bit longer for the larvae to get to the pupal stage. Cutworms move through their larval stages quicker at warmer temperatures. So this cooler weather could slow this progression a bit. When scouting and making decisions on cutworm management this time of year, consider the cutworm population, size of the cutworms, species of cutworm, and the plant stand and level of damage. If most of the cutworms are an inch or longer, they are getting close to pupating.



Redbacked cutworm and cut seedling.
Photo from Jason Voogt – Field 2 Field Agronomy

How long it takes to go through the larval stages depends on the species of cutworm, temperatures they are exposed to, and food quality is likely to be another factor. The table below shows how long it takes redbacked cutworm to go through their 6 larval stages at 2 different temperatures in a laboratory study. Part way through their last instar they will stop feeding and start preparing for their change into a pupa.

Mean Time (days) required for development of larvae of redbacked cutworm.

Larval instar	20°C	25°C
1	5.6	4.5
2	4.0	4.0
3	3.7	3.1
4	5.8	5.2
5	6.1	5.7
6	8.4	6.3
Total days as larva	33.6	28.8
Prepupae	5.6	3.2
Pupae	21.5	14.3

Source: Jacobson. 1970. The Canadian Entomologist: 102: 85-89

Plant Pathology

Tan spot, *Pyrenophora tritici-repentis*, is a fungal disease of wheat. Because tan spot thrives in cooler conditions, it is often the first pathogenic disease to appear on wheat each spring. This pictures show the classic symptoms of a well-defined necrotic spot surrounded by a yellow halo.



I could only find these on the first leaves. On second and third leaves, if you hold them up to a bright sky, you'll find proto-symptoms - faint lighter spots usually concentrated towards the leaf tip. Periods of leaf wetness of 6 hours or longer allow infections to move stepwise up the plant.

If you see signs of heavy tan spot infestation, should you consider an early fungicide application? This [item](#) that I wrote for the MB Wheat and Barley Growers might help in your decision-making.

On Friday, June 7th, our region experienced very hot, windy conditions. Temperatures soared into the upper 30s and winds were gusting above 70 km/h. Such conditions



proved challenging to the oat crop which had been growing well to that point. Early this week, the effects of those extreme conditions are evident. Upper leaves are necrotic and twisted giving the crop an overall stressed appearance.

Photo credit: Jason Voogt

Weeds

Assessing Herbicide Efficacy and Injury: It is important to scout 14-21 days after a herbicide application in order to ensure the herbicide did what was expected. There are certain chemistries that will show symptoms more quickly. Here are two examples of herbicide complaints:

1. Suspected Group 2 carryover:



Allison Rasmussen - Technical Sales Agronomist – Corteva

Group 2 symptoms would typically show up on the growing point with stunting, chlorosis and then purpling, roots can be stunted as well. Turns out this was: **CUTWORM damage** – 8-36 cutworms/m² were found in 25 counts that were conducted in the field. In driving up to the field, the visual symptoms did fit the pattern for herbicide carryover, but did look suspiciously patchy.



Allison Rasmussen - Technical Sales Agronomist – Corteva

2. Phytotoxicity from a herbicide application

This picture was submitted because of a concern about a herbicide causing leaf burn in oats. David had a similar question the same day, in the same crop but a different field with suspected leaf disease.

Foliar injury can occur when there is a high surfactant load or if there high temperatures especially with contact herbicides (such as bromoxynil, or bentazon). With the high temperatures, there were high winds so hopefully no one was spraying herbicides. Anything over 15 km/hour or 9 miles/hour is when we need to wither stop spraying or make adjustments to minimize the risk of drift. Also, with herbicide phytotoxicity, there will be evidence of increased injury in areas of overlap (headlands, turning areas) and potentially a miss or two (I call that an unsprayed check). SO was it herbicide damage...check out David’s comments for the answer.



Allison Rasmussen - Technical Sales Agronomist – Corteva

Forecasts

Entomology:

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.

Table 1. Highest cumulative counts of diamondback moth (*Plutella xylostella*) in pheromone-baited traps for five agricultural regions in Manitoba as of June 12, 2019.

Region	Nearest Town	Trap Count
Northwest	Bowsman	273
	Bowsman	229
Southwest	Brookdale	15
	Shilo	10
Central	Roland	28
	Elm Creek	27
Eastern	Steinbach	123



Delta Trap baited for diamondback moth

	Tourond	58
Interlake	Teulon	33
	Selkirk	20

Diamondback moth levels are generally still low, however some traps in the Northwest and Eastern region have some higher numbers. Of particular note, 2 traps in the Bowsman area have cumulative trap counts over 200 moths. So when canola in this region is being scouted make sure to look for diamondback moth larvae.

Plant Pathology:

Fusarium Head Blight Forecasting for 2019: Until this past weekend, it looked as though there was little chance that we’d see the coincidence of heat and humidity that is the most important factor in the risk of head blight infection in cereals. Suddenly, that has changed. There are regions of the province where the risk has jumped significantly. The model that we employ in Manitoba looks at **two key weather variables over the last seven days:**

- hours where the temperature was between 15 and 30C (T15307), AND
- hours where measurable rainfall has occurred (DPPT7).

This last weekend did not produce general rain throughout southern Manitoba, but there was some rainfall at all stations and temperatures zoomed up into the ideal range. By Monday, there were even pockets where risk was mapped as ‘extreme.’ Remember though that *actual* risk depends on the presence of a susceptible host and fields of commercial winter wheat, which are few and far between, are not yet at the susceptible crop stage (the onset of flowering).

How do 2 numbers (DPPT7 and T15307) get translated into a single value representing risk? First, 50 location-years of data have established that the maximum values for each are 39 and 168, respectively. Next, measured values are plugged into this formula: $(DPPT7 / 39) \times (T15307 / 168) \times 100$
 e.g. at Beausejour, as of June 10th the numbers were **23** and **100**.

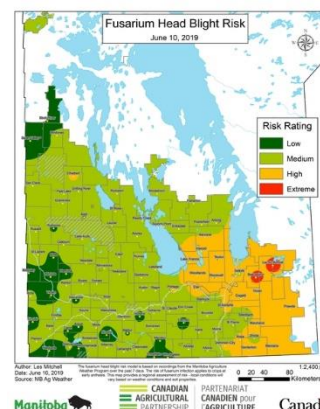
$$(23/39) \times (100/168)$$

$$(.59 \times .60)$$

$$(.35) \times 100 = 35$$

The risk categories have previously been established as:

- < 12 = low (dark green)
- 12-22 = moderate (light green)
- 22-32 = high (yellow)
- > 32 = extreme (red)



Finally, the 100+ values are dropped into a mapping program that interpolates between neighbouring stations to generate the 4-colour map that we post. Because the process

uses modelling and interpolation, it is a guideline for **estimating** risk *when your crop is at a susceptible stage*.

We started running the model last Friday and will do so until the majority of the spring wheat has headed and flowered, usually mid-July). Each weekday, you'll see a new [risk forecast map plus an animation](#) that shows how the risk has changed over the previous 7 days.

The risk forecast reflects a dynamic situation and, as such, is constantly in flux. For example, with no new precipitation since Saturday, the first patches of extreme risk have dropped away.

.Identification Quiz:

Question: A couple of agronomists commented this week on seeing a lot of these butterflies around. What is this butterfly, and is there an agricultural connection?



Answer: This is the painted lady butterfly. The caterpillar stage of this butterfly is called the thistle caterpillar and likes to feed on thistles. They will also feed on some crops like soybeans and sunflowers though. Their feeding is usually not economical but highly visible in these crops. Enjoy the free thistle biocontrol we should get should the larval populations be numerous.

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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.