

Manitoba Crop Pest Update

Issue 2: June 1, 2022

Summary

Insects: Flea beetles have been noted on volunteer canola and cruciferous weeds, but with the late seeding there has been no economic damage reported from them to date. Wireworms have been observed by some checking seeding depth in the Central region, but so far not at economic levels.

Diseases: All regions of Manitoba have been affected by excess moisture in the month of May. The immediate implications for planted crops are both the environmental stress of saturated soils, and the likelihood of root rot pathogens taking hold because of that stress. Most root rot organisms can live in the soil in the absence of living crops (saprophytically), just lying in wait for a susceptible host and an environment conducive to infection.

Weeds: Weeds are really starting to grow across the province due to the abundance of rain, with little competition coming from late-seeded or as-yet unseeded crops. Early weed control in all crops is crucial. It's been difficult to apply pre herbicides, either burn-off or with residual, due to the wet conditions and the rush to seed. Winter annual, biennial and perennial weeds are growing well due to the abundance of moisture last fall and this spring. Annual weeds are emerging rapidly and many are approaching or at the stage they should be sprayed. If spraying post-seed but pre-emergent, make sure to get on the field soon as crops will emerge quickly with warm temps and lots of soil moisture.

Entomology

Rain in April and May, How Might it Affect Grasshoppers? The potential pest species of grasshoppers don't hatch on the Canadian prairies until typically May 25 to June 15. This year the hatch may be delayed a bit because of cool spring conditions. Spring rains prior to late-May will have little impact on the number of eggs that hatch. Each egg has a nearly waterproof shell (called a chorion). In research where grasshopper eggs were completely immersed in water for days, this did not kill the eggs or slow subsequent growth.



If moist conditions keep the ground cool, egg development and hatch may be delayed. Research on clearwinged grasshopper found that a higher percentage of eggs hatched in moderately damp soil than under very wet or very dry soil conditions. Bottom line – don't assume all the rain in April and May will have killed most of the grasshopper eggs. Still make grasshopper scouting a priority. Excess moisture once the eggs hatch would likely decrease the population, but we don't want to wish for that at this point. Next week we will discuss the impact of excess moisture on newly hatched grasshoppers.

Model for estimating flea beetle activity needing testing: Ukko Agro has developed a weather-based model for estimating current and forecasted levels of flea activity in canola fields. The model needs people who are out doing regular early-season crop scouting in canola to test and provide feedback on this model. If you are interested in being involved in this project, please contact John Gavloski (see bottom of report for contact information). We can then add the location of the field you will be monitoring with the other data.



“Re-gift your cutworms: Several hundred live cutworms are required for a couple of research trial on controlling cutworms. If you come across a field with a lot of cutworms, and don't mind some of them being taken from the field, please contact John Gavloski (see bottom of report for contact information) so a sample can hopefully be collected for the project.

Plant Pathology

Root Rots That Predominate in Flooded and Saturated Soils

It has been a struggle for many growers to complete seeding this spring due to flooding and soils that are still saturated.

What happens where crops were seeded, they emerged, and were subsequently submerged under water?

The main consideration is that crop under water, or even in a saturated soil, is already under stress. Plants require adequate moisture, yes, but they also require oxygen in the pore spaces surrounding the roots. Plants that are under stress from anaerobic (or oxygen-deprived) conditions are also more vulnerable to the onset of pathogenic disease.

One root rot pathogen that actually thrives in oxygen deprived conditions is **Pythium**. This fungus releases zoospores which have tiny “hairs” known as flagella. These allow zoospores to “swim” through waterlogged soils and move towards developing roots. Pythium species found in field soils attack both grassy and broadleaved crops. Their point of attack is the fine “feeder roots” that support plants early on. The outer layers of these roots turn brown, become soft, and “slough off.” To recover, the plant

needs to generate new feeder roots. It will be difficult for the plants to recover until standing water dissipates and pore spaces begin to drain.

Another fungus in the same family, known commonly as the “water moulds,” is **Phytophthora**. It, too, is more likely to take hold in wet conditions, even moving up the stem later in the season. While Pythium is fairly non-specific, Phytophthora species are much more host-specific. For example, *Phytophthora sojae* is the species most likely to attack soybeans. And as a group, Phytophthora fungi are most damaging on pulse crops (legumes).

What are the crops’ chances of survival when infected with these diseases?

Because of how, where and when they attack, Pythium and Phytophthora cannot be managed with a post-emergent fungicide. Seed treatments are the only defense and their protection is not indefinite, typically lasting 3 to 4 weeks post-planting. In depressional areas (potholes) where water is very slow to disappear there will still be symptoms (yellowing, stunting, and necrosis) after the water is gone, despite the best seed treatments available. Many seed treatments now contain 3 (or even 4) active ingredients with different modes of action. Seed treatments which contain a Group 4 active ingredient are more effective against these water moulds.

Weeds

Given the wet conditions so far this year we are seeing some different weeds, especially compared to the last couple of years.



Broad-leaved plantain (*Plantago major*):



Curled dock (*Rumex crispus*):

If wet conditions persist we may see weeds like marsh yellow cress, purslane speedwell and lanceleaf sage. We will go into these weeds in more detail as they appear.

Forecasts

Diamondback moth. A network of pheromone-baited traps are being monitored across Manitoba in May and June to determine how early and in what levels populations of diamondback moth arrive. So far, diamondback moth has been found in 24 traps. Levels are generally very low, with the exception that some moderate counts have occurred in the Eastern region, particularly over the past two weeks. The highest cumulative trap count so far is 50 from a trap near Hadashville in the Eastern region.

Table 1. Highest cumulative counts of diamondback moth (*Plutella xylostella*) in pheromone-baited traps for five agricultural regions in Manitoba as of June 1, 2022.

Region	Nearest Town	Trap Count
Northwest	Makaroff,	4
	Grandview	3
	Inglis, Grandview	2
Southwest	All traps with 0 so far	
Central	Gnadenfeld	9
	Altona	8
	Belmont	6
	Halbstadt	5
Eastern	Hadashville	50
	Stead	25
	Beausejour	18
	Whitemouth	12
	Ste. Anne	6
Interlake	Arborg	1

← Highest cumulative count

Identification Quiz:

Question: These tiny beetles can often be seen very actively moving around when looking through the soil this time of year. What are they?



Answer: This is a rove beetle. Rove beetles are a very large family of beetles (called Staphylinidae), with 1,774 species having been recorded from Canada. Their wing covers (elytra) are much shorter than the abdomen, resulting in over half of the top surface of the abdomen being exposed. In the photo above, the light-brown area is the front wings (elytra), and the black area behind it is exposed segments of the abdomen. They may raise their abdomen when disturbed.

Rove beetles are not crop pests, and many species are beneficial. Most rove beetles feed on other insects, and some species feed on decaying organic matter. Some rove beetles in the genus *Aleochara* are good natural enemies of root maggots, with adults being predaceous on root maggot larvae and eggs, and larvae being parasitic of root maggot pupae.

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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.