Manitoba Crop Pest Update
Issue 10: July 26, 2023

Manitoba Agriculture

Summary

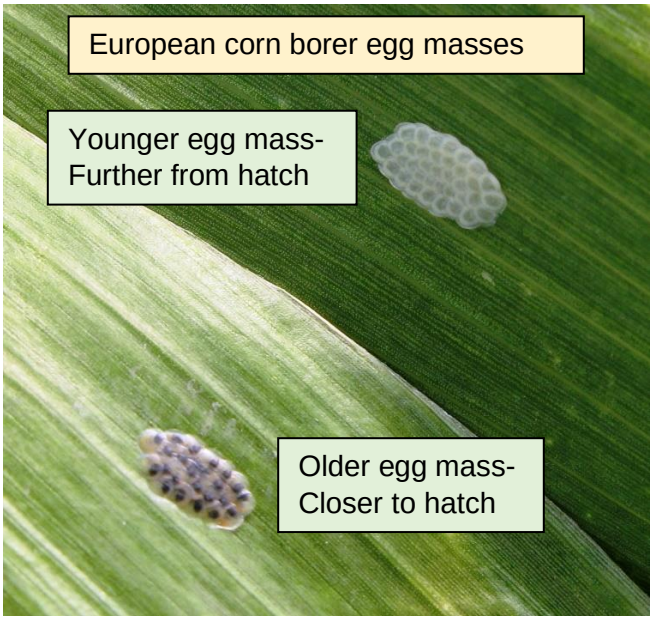
Insects: Some high populations of **aphids** have been reported in late-seeded wheat and oats. The higher aphid levels in the cereals don't appear restricted to any region, as this week there have been reports from all agricultural regions of Manitoba. A reminder that once small grain cereals reach the soft dough stage aphids will no longer be doing economic damage.
Some pastures have had insecticide applied for **grasshoppers**, and there are reports of wheat and barley in the Southwest region being treated for grasshoppers.
Armyworms are still being noticed in some fields, but in some areas they are no longer at economic level. There is also some evidence of parasitism of armyworm populations in some areas. Moderate levels of armyworm adults were noticed in one of the pheromone traps in the Teulon area recently, which could be the adults for the second generation emerging. The second generation is normally not as damaging to crops in Manitoba.
High levels of adults of **banded sunflower moth** were noticed in some sunflower fields in the Eastern region.
Flea beetle feeding, at times heavy in patches, has been reported from a couple of canola fields in the Eastern and Interlake regions.

Diseases: Fusarium head blight forecasting has wrapped up for the season. We are now surveying three major crops; wheat, soybeans and canola. So far, in the first 30 fields of wheat, we have seen 0 Fusarium head blight. Dry conditions prevail. In 1 of a dozen soybean fields, we have seen moderate bacterial blight, but so far only minor levels of other diseases.

Weeds: Weed escapes or late flushes of weeds are noticeable, particularly lamb's quarters and barnyard grass. If known resistant weeds like wild oats are present then patches should be mowed to prevent seed spread. Waterhemp continues to be found and is being hand-pulled or mowed to destroy plants. Poisonous plants like water hemlock and water parsnip are noticeable in ditches and sloughs and producers need to be careful when grazing or haying these areas.

Entomology

European corn borer: Now is a good time to be looking for the egg masses of European corn borer on corn, hemp, quinoa, potatoes and other crops that are hosts of European corn borer.



A **harmonized protocol** that can be used in multiple crops to assess European corn borer has been developed. Those monitoring for European corn borer can enter their counts of egg masses, larvae and feeding damage into a free Survey123 app (available for both desktop and mobile devices). Use of the harmonized protocol will generate data to compare European corn borer presence across all of Canada and across host crops. From this, levels of European corn borer on various hosts can be tracked. If you are scouting for European corn borer, consider using this harmonized protocol and enter your data using the Survey123 app. More details on the protocol for monitoring eggs and larvae of European corn borer can be found at: https://fieldcropnews.com/2021/06/nationwide-monitoring-pilot-project-for-european-corn-borer/
Data will be used to answer questions about the preferred host crops of European corn borer in Canada and its distribution and relative abundance across Canada.

I am also **looking for European corn borer egg masses or larvae** for a study on European corn borers by the University of Guelph. If anyone does notice a lot of egg masses or larvae of European corn borer, please let me know (see contact information for John Gavloski at the end of the update). Corn borer eggs or larvae collected will help us verify what strains of European corn borer are present in Manitoba, and determine if any resistance to Bt corn is developing in our Manitoba populations.

Corn Rootworm Monitoring Network: Northern and western corn rootworm are beetles whose larvae feed on corn roots, and only corn roots. In fields where corn is rotated with other crops, they should not be present. The problem comes when corn is not rotated, and planted in the same field for multiple years in a row. Such fields are at higher risk of corn rootworm becoming an economical problem. If root feeding is severe enough, plants lodge, continue to grow, and end up with curved stems. This can make harvest difficult if it is common. Yellow sticky cards can be put in the field to monitor

what the levels of northern and western corn rootworm adults are like, and determine if measures to address corn rootworm should be taken.

The protocol is simple: set up a transect of 4 traps in a field of interest, count the number of western and northern corn rootworms (separately) on each sticky trap once per week, and repeat this process for 4 weeks. Results from the trapping are compiled by a multi province/state network of entomologists and agronomists working on corm rootworm called the Corn Rootworm Monitoring Network. We ask volunteers to give us some background information on the field and either report their data in an online system called Survey123, or submit it to John Gavloski and I can get the data entered.

Anyone with or scouting fields for corn with a long history of being in corn can contact John Gavloski at the Email address or phone number at the bottom of this report, and I can provide traps, instructions, or get traps placed if in the vicinity of Carman.

Insecticide Update – Emergency Registration: An emergency registration has been granted for Carbine for the control of Lygus bugs on confection sunflowers. This emergency registration is effective from July 21, 2023 to July 20, 2024.

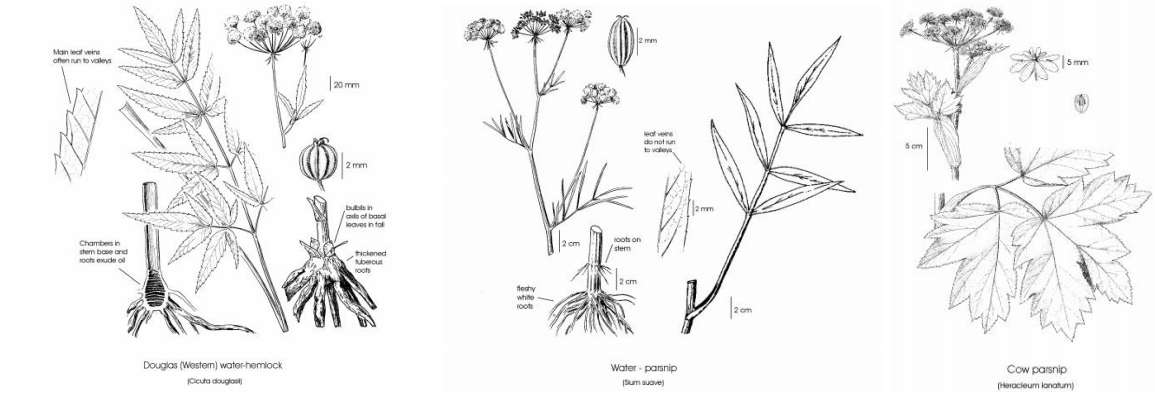
Lambda-cyhalothrin (Matador, Labamba), and the combination insecticide Voliam Xpress (lambda-cyhalothrin + chlorantraniliprole) were previously registered for Lygus bugs in sunflowers. With the removal of sunflowers from the lambda-cyhalothrin label, there were no remaining registered insecticides for Lygus bugs in confection sunflowers, which was the reason for the application for the emergency registration for Carbine for this purpose.

Carbine is a selective insecticide, and will kill some sap feeding insects. It will not kill chewing insect pests of sunflower seeds such as banded sunflower moth or larvae of seed weevils.

Weeds

Water Hemlock and look-alikes: Dry conditions have dried up sloughs and marshy areas, while these areas are not normally used for hay or pasture they can be a source for feed. Toxic plants can be in these areas and it's crucial to be able to identify these plants and avoid them.

Members of the Parsley family tend to grow in wet or marshy areas. They are hollow – stemmed herbs with alternate leaves, the base of the stalk is usually enlarged or swollen. Flowers are small, white or yellow, in umbels (looks like an upside down umbrella). Plants in this family are hard to distinguish from one another, and many are poisonous or have toxic qualities. Water hemlock, also called Western water hemlock, is one of the most poisonous plants in North America. All parts of water hemlock are extremely poisonous, particularly the base of the stalk and the tuberous roots. Water parsnip is very similar, but the leaves are smaller with less serrated margins, and has a fibrous root system. In water hemlock the veins in the leaves end in the notch, or valley, whereas in water parsnip the veins are less prominent and tend to run to the tip of the leaf. While water parsnip is less toxic than water hemlock, it is still poisonous and should be avoided. Cow parsnip is usually a much larger plant and has a different leaf shape. Cow parsnip is not poisonous but it causes photosensitization, potentially causing rashes, skin blistering and burning. Water hemlock, water parsnip and cow parsnip all have white flowers. Wild parsnip has yellow flowers and is thought to be similar in toxicity to cow parsnip. Water hemlock and water parsnip grow in the wettest areas, while cow parsnip and wild parsnip prefer slightly drier environments.



Since these plants may be easily confused with one another you should treat them all as if they were the most toxic plant, water hemlock. Try to avoid contact with any of these plants, if you have a few and want to pull them to get rid of them be extremely careful, you must wear gloves (not leather). Spraying may be an option, spot spray with glyphosate (minimum 360 g ae/acre), 2,4-D amine (0.6-1.6 L/acre of 600 g formulation) or MCPA amine (0.9L/acre of 500 g formulation). Do not allow grazing for 2-3 weeks after spraying or until the plants are completely dried out. Concentration of the toxins drop during the process of curing but may remain a problem in contaminated hay. The toxin levels drop during storage so the longer the contaminated hay is stored the lower the risk, but avoiding cutting these plants while haying is by far the safest strategy.

Plant Feature	Weed Species	
	Spotted Water Hemlock	Water Parsnip
Life Cycle	Perennial, reproduced by seed	Perennial, reproduces by seed
Roots	Tuberous	Fibrous
Stems	Hollow with basal 'chambers'	Hollow
Leaves	- Narrow, lanceolate leaves that are pinnately compound or twice pinnately compound - Leaflets have toothed margins with veins that end **in the notch between teeth** 	- Narrow, lanceolate leaves that are pinnately compound - Leaflets have toothed margins with veins that end **in the tip of the tooth** 
Flowers	- Small white flowers in compound umbels - No or few leafy bracts at base of umbels	- Small white flowers in compound umbels - Leafy bracts at the base of umbels

Forecasts

Bertha armyworm: Cumulative counts are still all in the low risk range in the traps for bertha armyworm, except for a trap near Waskada, which had moved into the uncertain risk range. The highest cumulative trap count so far is 411 near Waskada 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 26, 2023.

Region	Nearest Town	Trap Count
Northwest	The Pas (East)	219
	Durban	122
	The Pas (West)	107
	Inglis	99
	Minitonas	79
Southwest	Waskada	411
	Miniota	178
	Cypress River	122
	Minto	118
	Pierson	110
Central	Lowe Farm	165
	Emerson	91

← Highest cumulative count

	Greysville	38
	Barnsley	20
	Gretna, Horndean	19
Eastern	Whitemouth	113
	Stead	92
	Beausejour	69
	Ste. Anne	30
	Tourond	14
Interlake	Teulon	126
	Stonewall	69
	Meadows	63
	Ashern	61
	Hodgson	54

0-300 = low risk
300-900 = uncertain risk
900-1,200 = moderate risk
1,200+ = high risk

The adult monitoring for bertha armyworm is now complete, and traps can be removed from fields once counts for this week (July 23-29) are done.

Information on the biology of bertha armyworm and monitoring larval levels can be found at: https://www.gov.mb.ca/agriculture/crops/insects/pubs/bertha-armyworm-factsheet-revised-may2023.pdf

Identification Quiz:

Question: These clusters of flies were dead and attached to the top of the stems in a barley field. What would cause this to occur? Why would they all be at the top of the plant? And stuck to it? The answer is better than a good sconce fiction short story.

Photo by Christine Kilpatrick, Field 2 Field Agronomy

Answer: These are flies infected with the fungus *Entomophthora muscae*, a close relative to the fungus that kills grasshoppers, *Entomophthora grylli*. The fungus is transmitted by airborne spores that germinate

and penetrate through the adult fly's exoskeleton once the spore settles on the fly. Once inside the fly, the fungal hyphae grows causing the membranes between the fly's abdominal segments to stretch giving the fly a striped appearance. Once the hyphae reaches the fly's brain, it causes changes in behaviour. Infected flies crawl upwards to the highest point of the plant they are on and attach themselves to the plant by their mouthparts aided by glue-like materials secreted from the hyphae. Before it dies, the fly spreads out its legs and wings and angles its abdomen away from the surface. This position combined with the elevated location improves the chances of the new fungal spores infecting other flies. Most flies die a few hours before nightfall when there is typically there higher humidity the fungus requires. However, if the appropriate conditions do not occur the fungal holdfasts ensure the dead insect will remain hanging there for awhile and the pathogen can persist in the infected host until conditions improve.

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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.