

Manitoba Insect and Disease Update

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To report observations on insects or plant pathogens that may be of interest or importance to Farmers and agronomists in Manitoba, please send messages to the above contact address.

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July 20, 2012

Recent Insect and Plant Pathogen Activity

Canola

Lygus Bugs: Lygus bug numbers have been above the economic threshold in some canola fields in the Central and Eastern regions of Manitoba. This is an insect that you need to use the sweep net for to determine levels in canola. The following link includes tables to help determine economical levels of Lygus bugs in canola:
<http://www.gov.mb.ca/agriculture/crops/insects/fad12s00.html>



Figure 1. Lygus Bug on Canola.

A study by entomologists at Agriculture and Agri-Food Canada in Winnipeg found that samples taken along the edge of commercial fields and at various distances into the field all gave similar estimates of Lygus bug densities (The Canadian Entomologist. 1998: 837-851). Thus when canola stands get more difficult to walk through, this is one insect that you can potentially get away with sampling near the edge of the field if it is otherwise hard to get into the field.

If populations are above economic threshold and the decision is made to control the insects, preharvest intervals are one of the factors to consider when deciding what insecticide to use. The following table lists the preharvest intervals, which are how many days must pass between application and swathing, for the insecticides registered for Lygus bugs in canola.

Insecticide	Preharvest Interval
Decis	7
Matador / Silencer	7
Lorsban / Citadel / Pyrinex / Nufos	21

Make sure to allow the appropriate number of days before swathing. Aside from the safety aspect, risk of jeopardized trade is another potential consequence of not following preharvest intervals.

Bertha Armyworm: Bertha armyworm (*Mamestra configurata*) have been hatching and are starting to be noticed in some fields, although currently not at economical levels. One of the questions that some have asked is how long it takes the bertha armyworm to go through its larval stages. While some factsheets suggest it takes 6 weeks, this is only likely to be the case under very cool conditions. The following table shows how long it takes the bertha armyworm to go through the egg and larval stages at different temperatures.

Mean duration in days of the egg and larval stages of bertha armyworm at constant temperatures

Stage	Temperature (°C)			
	16	20	24	28
Egg	10.5	7.1	4.8	3.4
Larval Instar 1	7.6	4.9	3.2	4.1
Instar 2	4.8	3.5	2.3	1.6
Instar 3	5.0	3.4	2.3	1.8
Instar 4	5.0	3.7	2.3	2.0
Instar 5	5.4	3.9	3.0	2.5
Instar 6	15.1	10.4	7.9	6.0
Total Larval stage	42.9	29.8	21.0	18.0

From: Bailey, C.G. 1976. The Canadian Entomologist. 108: 1339-1344.

When temperatures are averaging in the mid 20's, about 3 weeks is a more realistic length of development that can be expected. If egg laying was staggered you may see larvae in the field for a longer period. Also note that although the last larval stage (instar 6) can be quite long, for a few days at the end the larvae will not be feeding as they get ready to pupate.

When they are fully grown, larvae of bertha armyworm are about 4 cm (1.5 inches) long. One of the things that can make scouting confusing is that there can be 3 main colour forms of bertha armyworm; black, brown or green. Figure 2 below show the various colour forms of bertha armyworm.



Figure 2. Various colour forms of bertha armyworm.

Blackleg: Just a reminder for agronomists and growers to be scouting for blackleg in canola fields as they begin to mature. There have been cases of basal stem lesions in canola fields this year in which plants are falling over due to this girdling of the stem base. Some fields will see significant yield losses from these symptoms. Plants that have been wounded from hail, extreme winds, or insects are more susceptible to blackleg infection. When scouting look for both leaf and stem symptoms and cut open the base of seemingly healthy stems to check for discolouration of the vascular system. Scouting at this stage is important for future management decisions regarding variety selection and crop rotation.



Figure 3. Leaf symptoms of blackleg in canola. Note pycnidia (pepper spots) within the lesion.



Figure 4. Stem symptoms of blackleg as they appear in a cross section. Note vascular discolouration.

General Crop Scouting

Green Cloverworms: Larvae are now starting to turn to pupae. So you may see holes in the upper leaves of some soybean plants and not find caterpillars present. Feeding should be decreasing. In many fields there are small holes in some of the upper leaves, but overall feeding is well below economic threshold.



Figure 3. Green cloverworm Larva



Figure 4. Green Cloverworm pupae.

Armyworms: Armyworms (*Mythimna unipuncta*) are now starting to turn to pupae in some regions as well. They have been at economic levels in cereal crops and forage grasses in many parts of Manitoba this summer. Populations should start declining as they turn to pupae.



Figure 5. Armyworm Larva



Figure 6. Armyworm pupa.

Surveys and Forecasts

Traps for moths of bertha armyworm: Some higher counts of moths have been occurring in the pheromone-baited traps for bertha armyworm. Highest counts have been in the western and central regions of Manitoba. In many traps the counts peaked during the weeks of either June 25th–July 1st, or July 2-8, and the weekly counts are now decreasing. So it is likely that a high percentage of moths have emerged.

Table 1. Highest cumulative trap counts for moths of bertha armyworm in Manitoba as of July 19, 2012

Location	Cumulative Trap count
Carberry	2,333
Inglis	1,039
Baldur	951
Carberry	794
Swan River	505
St. Claude	484
Fork River	457

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The following table relates the cumulative moth counts with the risk of larval infestation.

Cumulative Number of Moths/Trap		Larval Infestation Risk Level
From	To	
0	300	Low - Infestations are unlikely to be widespread, but fields should be inspected for signs of insects or damage.
300	900	Uncertain - Infestations may not be widespread, but fields that were particularly attractive to egg-laying females could be infested. Check your fields.
900	1200	Moderate - Canola fields should be sampled regularly for larvae and for evidence of damage.
1200	1500+	High - Canola fields should be sampled frequently for larvae and for evidence of damage.

Factors such as how successful the moths were at mating and laying eggs, and the effects of predators, parasitoids and pathogens will determine the level of larvae that we see in the fields. Trap counts suggest that there is potential for localized areas with higher and possibly economic populations, particularly in the western and central regions of the province. Make sure fields get scouted for the larvae, which are the potentially damaging stage.

Note also that high trap counts do not mean the particular field where the trap is placed is at a higher risk. Sometimes in fields where the trap counts were high the level of larvae that are found may be low (we have seen this happen frequently). But if several traps in a region have high counts the risk of some economic populations in that region is increased. Hence this is a regional monitoring program, and not designed to try to predict what will happen in individual fields.

The full data set for adult counts of bertha armyworm can be viewed at:
<http://www.gov.mb.ca/agriculture/crops/insects/bertha/index.html>

Insect Identification Quiz

This week's question will test your skills at identifying Lepidoptera larvae. This caterpillar was found feeding on onions. Hint – It is not the thistle caterpillar that has been abundant in some areas this year.



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This is the saltmarsh caterpillar (*Estigmene acrea*). It has a very broad host range. There have also been reports of them feeding on canola, but only in very small patches. Usually they are not economical, but highly visible on the plants. There can have many colour variations, which can sometimes make identification tricky. They can crawl rapidly, and will become a tiger moth.