

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.

To be placed on an E-mail list so you will be notified immediately when new Manitoba Insect Updates are posted, please contact John Gavloski at the address or numbers listed above.

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Recent Insect and Plant Pathogen Activity

Cereals

Root Rot: There have been a number of cases of root rot across the province this year. Most of these cases have been in wheat, but there have been reports in oat crops as well. At this crop stage, symptoms of root rot are showing up as premature ripening, white heads, as well as early senescence of the leaf tissue. In most of these cases these heads are not showing any grain fill. These severe cases are most likely caused by root rot in conjunction with heat sterility given the high temperatures most of the province has experienced in the last couple of weeks. There are different pathogens that can cause root rots, but *Fusarium* species thrive under warm temperature and dry to moist soil. In years where there is significant moisture available in the soil root rots will not cause as much damage. In drier years when the plant is already under stress even minimal damage from root rots will have an effect on the aboveground tissue. When scouting for root rots pull affected plants out of the ground and look for damage (necrosis) on the roots and crown. If plants pull up quite easily it is a good indication that the root system has been damaged. Keep in mind that there are other causes of premature ripening and white heads in cereals including *Fusarium* head blight, aster yellows, and environmental stress.



Figure 1. White heads caused by root rot. (Image: Kansas State University)



Figure 2. Necrosis of belowground tissue due to root rot (white arrow)

Canola

Lygus Bugs: Lygus bug numbers above the economic threshold in canola continue to be reported from many areas. One of the questions this week has been when is it economical to manage higher levels of Lygus bugs, and when is it too late. The most vulnerable stage is during the early seed development. When seeds in the lower pods are still translucent, Lygus bugs at high levels can do economic damage. When the seeds in the lower pods have turned green, Lygus bugs can still do economic damage, but the thresholds are higher. Once the seeds have ripened to yellow or brown, the cost of controlling lygus bugs may exceed the damage they will cause prior to harvest, so insecticide application is not warranted.

Stages of canola prior to pod formation can often compensate well for feeding by Lygus bugs, especially if growing conditions are good, and at lower levels of Lygus bugs overcompensation can occur. Research in Alberta found that low levels of Lygus bug feeding from bud to early flower stage induced greater branching and thicker stems compared to plants without Lygus bugs, and may increase seed yield.

Economic thresholds and information on Lygus bugs can be found at: <http://www.gov.mb.ca/agriculture/crops/insects/fad12s00.html>



Figure 3. Lygus bug on canola.

Bertha Armyworm: There have been some insecticide applications for bertha armyworm (*Mamestra configurata*) in canola in the southwest and central regions of Manitoba. Populations can vary considerably from field to field, so checking each field is important.



Figure 4. Various colour forms of bertha armyworm.

Bertha armyworm will feed on many broadleaf plants other than canola, although canola is usually the crop associated with higher levels and potentially economic damage. We did see a sample of bertha armyworms from potatoes this week. Some of the other crops they will feed on include flax, alfalfa, and for vegetable crops they will feed on cabbage and tomatoes (where they will feed on the fruit). Rarely do populations get to economic levels in these crops in Manitoba.

General Crop Scouting

Aster Yellows: Aster yellows, which is spread primarily by the aster leafhopper (*Macrosteles quadrilineatus*), is more abundant than normal this year. In field crops insecticides are generally considered of little value in management of this disease, since the little bit of research that has been done suggests single insecticide applications would have low probability of being of much value, and multiple applications (as done in horticultural crops) would not be practical in field crops. The symptoms of aster yellows can be very visible and stand out in many crops, so it is very easy to overestimate the amount of damage to across a field. So assess the crop carefully before concluding what the damage may be. In cereal crops it can be difficult to differentiate aster yellows from other pathogens in those crops.



Figure 5. Aster yellows in canola.



Figure 6. Aster yellows in flax



Figure 7. Aster yellows in barley.

More details on symptoms in canola can be found in the July 25th CanolaWatch:
<http://www.canolawatch.org/2012/07/25/lots-of-aster-yellows/>

In flax the severity of aster yellows can depend on the stage when plants become infected, as well as the number of leafhoppers carrying the disease. Symptoms can include yellowing of the top part of the plant, malformation of flowers, and stunted growth. Flower parts may be converted into small yellowish green leaves.

Surveys and Forecasts

Grasshopper Survey: Manitoba, Saskatchewan and Alberta have for many years surveyed grasshopper populations in August to predict the regional risk from grasshoppers the following year. The data is mapped, and this forecast is used by farmers, agronomists, and agricultural retailers to plan for the following season.

A reminder to farm production advisors and those involved in this survey, that counts are done during August, when the majority of grasshoppers are in the adult stage. Agronomists and farmers who would also be interested in estimating grasshopper numbers in the fields they are in and have this information included in the survey are encouraged to see the survey protocol for more details of the survey and where to send data. Estimates of grasshopper levels can be collected during regular farm visits. The grasshopper survey protocol is located at: <http://www.gov.mb.ca/agriculture/crops/insects/fad95s00.html>

Traps for moths of bertha armyworm: Some higher counts of moths were collected in the pheromone-baited traps earlier in July. Traps counts peaked a couple of weeks ago, and traps can now be removed.

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 have been decreasing in recent weeks. So it is likely that a very high percentage of moth emergence and egg laying is complete. Our focus now should be on scouting for the larvae.

Table 1. Highest cumulative trap counts for moths of bertha armyworm in Manitoba as of July 26, 2012

Location	Cumulative Trap count
Carberry	2,341
Inglis	1,094
Baldur	985
Carberry	806
Durban	756
Swan River	523
St. Claude	484

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. In some areas people have reported seeing dead bertha armyworms on the tops of plants. This could either be a type of virus known as a nuclear polyhedrosis virus, or a fungus that is killing the larvae. Based on the description given, and that some larvae appeared “melted” to the plants, it is most likely the virus in this case.

The full data set for adult counts of bertha armyworm, and a table on how to interpret the data, can be viewed at: <http://www.gov.mb.ca/agriculture/crops/insects/bertha/index.html>

Insect Identification Quiz

What are the 2 insects in the photos below, and are they related in any way.



Answer: These are both green lacewings. The photo on the left is an adult green lacewing, and the photo on the right is a green lacewing larva. They belong to a family known as Chrysopidae. There are about 25 species of green lacewings in Canada. The larva in the photo is eating an aphid; they will also eat small caterpillars and beetle larvae, as well as thrips, mites, and eggs of many insects.