

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.

June 8, 2012

Recent Insect and Plant Pathogen Activity

Oats

Bacterial blight: There have been a number of reports of bacterial blight in oat crops around the province. Symptoms of this disease include light green to water-soaked spots or stripes on the leaves (Figure 1). As the disease progresses the infected leaves turn brown, wither, and die off. Bacterial blight favours humid, wet weather. The warm, dry weather that most of the province experienced this week should halt further development of these symptoms. In fact, in most fields the symptoms were limited to the older leaves and new leaves were green and healthy. It is important to note that this disease is caused by a bacterium, not a fungus, and therefore fungicide applications will not provide any control. Warm, dry weather will allow crops to grow through these symptoms and it is unlikely to cause measurable yield losses.

Note: Bacterial blights can also affect other cereal crops such as wheat and barley, but the specific causal organisms differ between crops.



Figure 1. Early symptoms of bacterial blight in oats

General Crop Scouting

Aster leafhoppers: High populations of aster leafhoppers continue to be found in some cereal fields in Manitoba. While leafhoppers can be present in large numbers in field crops, and can potentially vector aster yellows to these crops, they can be most damaging in horticultural crops. There have been a few studies done on aster leafhoppers in field crops in the Canadian prairies. Attached are a few facts on leafhoppers and information from some of these studies that may be helpful.

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Species of leafhoppers:

There are at least 359 species of leafhoppers in Manitoba. Of these there are only 2 that are generally regarded as potential pests of crops in Manitoba; the aster leafhopper, and the potato leafhopper. This year we have higher than normal levels of aster leafhoppers, with some of the highest levels currently being seen in cereal crops.

Will they move into canola from the cereal crops?

When aster leafhoppers get blown in, they end up on many crops. Although they will feed on many crops, they do have preferences for what they will remain and reproduce in. For example, studies in Saskatchewan found that only adult aster leafhoppers could be found in canola. It appears that while they will temporarily feed on canola when they arrive in the field, they do not reproduce in canola, and likely move out after a brief period of feeding. The study concluded that “generally it appears that the aster leafhopper is not attracted by canola crops”. On average, the number of aster leafhoppers in cereal fields was three to seven times the number of aster leafhoppers in canola fields. So odds are they will not purposely move from cereals to nearby canola, although those that do end up in canola may move out of the canola to other crops such as cereals.

Is there an edge effect in small grain crops?

Research in Minnesota and North Dakota, where levels of aster yellows were assessed, showed that the pathogen was more prevalent in plants at the edges of fields compared to plants in the centre of the field. They suggested that the insect vectors were possibly moving into the fields from the perimeter areas. So as we suggest for many insects and plant pathogens, don't make conclusions regarding a field by sampling a field edge.

How serious are they in the cereal crops, and will applying an insecticide be economical?

These are tough questions with no real definitive answers. But here are some facts that may be helpful. Aster leafhoppers can spread aster yellows to cereal crops, which can reduce yields to some degree, although the damage is generally not regarded as being as serious as in horticulture crops.

Regarding will insecticides to control leafhoppers in cereals be economical, the short answer is we don't really know, but there are a few things to consider when making such a decision. Growers of higher valued horticulture crops, where aster yellows can be quite serious, will spray regularly for aster leafhoppers when the threat of aster yellows is high. They will often still have some aster yellows (it is nearly impossible to completely avoid having some in the crop) but the program of regular sprays does reduce the damage enough that it is economical in crops such as carrots. Such a spray program would likely be highly non-economical in cereal crops.

Regarding a one-time spray of an insecticide, such as a tank mix when applying herbicides – there is no evidence to suggest that there will be any economic return. The risk here, aside from insecticide cost, is that use of a general insecticide can make the crop more vulnerable to some insect pests later in the season, as some natural enemies of crop pests could be taken out in the process. So as the saying goes, choose your battles wisely.

A study on insecticides to control leafhoppers in barley was conducted by entomologists at Agriculture Canada in Winnipeg back in the early-1970's. Some of the insecticide treatments were spraying twice a week from the seedling stage onward for 8 weeks for a total of up to 15 applications for some insecticides. They did record some improvement in yield compared to the check plots, but “none of the treatments completely eliminated the disease” (Canadian Journal of Plant Science: 52: 177-182). So based on this and what we know from the spray programs in horticulture crops, it is hard to predict what reductions in aster yellows could be expected by a single application of insecticides in most field crops, but don't expect the risk to be gone.

Cutworms: Cutworms continue to be a problem in some fields. Although high populations can be quite localized within a region or field, they are not specific to any area of the province. This week, some high cutworm populations were reported from fields near Dauphin, Binscarth, Hamiota, Strathclair, Rivers, Cypress River, and Glenlea.

In some fields, the cutworm damage is very patchy, and there are situations where only patches are being reseeded or sprayed.

Please let me know as soon as possible if you are seeing high populations of cutworms. Someone will come to the field to collect cutworms for a research project on parasitoids of cutworms.

Surveys and Forecasts

Diamondback Moth Monitoring: Traps around Beausejour and Morris continue to have the highest counts, and all the higher counts continue to be in the eastern part of Manitoba. West of Carman the counts have all been low. Traps near Beausejour and Stead has fairly high counts (114 and 80 respectively) over the past week.

So far we have not had any reports of high levels of larvae of diamondback moth.

Table 1. Highest cumulative trap counts for diamondback moth in Manitoba as of June 7, 2012

Location	Cumulative Trap count
Beausejour	293
Stead	210
Morris (East)	194
Morris (West)	148
Altona	122
St. Joseph	74

The full data set for adult counts of diamondback moth can be viewed at:

<http://www.gov.mb.ca/agriculture/crops/insects/db/index.html>

Traps for moths of bertha armyworm: For those putting up traps to monitor the moth stage of bertha armyworm, traps can now be set up. Protocols for setting up the traps are available at:

<http://www.gov.mb.ca/agriculture/crops/insects/fad59s00.html?print>

Insect Identification Quiz

Question: You are noticing that emergence of your soybeans seems to be reduced in some areas of the field, and when you start digging around you find some seeds with feeding damage and other seeds with white maggots in them as in the photo below. What is the insect causing this type of damage to the soybean seeds, and now that the damage has been detected what can be done?



Photo courtesy of Maik Kort – Delmar Commodities

Answer: The insects in this photo are mainly larvae of the seedcorn maggots, however note the pupa on the right side of the photo. While we always have seedcorn maggot to some degree, and incidence of them in crops like corn, soybeans, and dry beans seems higher than normal this year. Once you do discover that they have done some damage in a field, there are no rescue treatments. Seed treatments can help reduce the damage in fields that are at higher risk.