# 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

### Sunflowers:

**Stages of Confection Sunflowers Susceptible to Lygus bugs**: When Lygus bugs feed on young, developing sunflower seeds the feeding can result in depressions and browning of the kernel in the area of the feeding. In research done in North Dakota, damage to sunflower heads was approximately twice as severe when infestations occurred at late bud and early bloom compared to stages when heads had completed flowering. So if Lygus bugs are numerous in crops that will be graded for quality, Lygus bug management should be initiated prior to or at the beginning of the bloom stage. Fields should be monitored for lygus bugs until flowering is completed to reduce incidence of kernel brown spot damage to confection sunflowers.

When flowering has finished (by R6) and the ray flowers are wilting, the seeds are probably too mature to sustain damage any longer. Concern is greater when heads are just beginning to flower and the seeds are immature. At that point, the feeding will injure the kernels and the destruction of the cells will result in the characteristic depressions and browning of the kernel. If the sunflowers will be crushed for oil than you do not need to worry about the brown spots caused by Lygus bugs. Most of the sunflowers in Manitoba will now be into at least the R6 or R7 stage, so the sunflowers are advancing beyond the stage of susceptibility to Lygus bugs. The following factsheet has some information on Lygus bugs in sunflowers.
http://www.gov.mb.ca/agriculture/crops/insects/fae02s00.html

Figure 1. Lygus bug on sunflowers

## Pulse Crops

**Grasshoppers on Soybeans**: Soybeans are not a preferred host plant for our pest species of grasshoppers, and we have seen instances where they move into a soybean field but are feeding on the weeds in the field and not the soybeans. So if you do see grasshoppers in soybeans, check to see how far into the field they have moved and whether most are still near the field edge. Also check to see how much feeding they are doing to the soybeans. There are no economic thresholds specifically for grasshoppers in soybeans, but there has been quite a bit of research on how different levels of defoliation affect soybean yields, and generalized defoliation thresholds have been developed which can be used for defoliators such as grasshoppers on soybeans.

| Soybean Development | Action Threshold |
|---|---|
| Pre-bloom (i.e. vegetative stages) | 30% |
| Bloom (R1) to Pod-fill (R4) | 15% |
| Pod-fill to maturity (R5-R6) (unless pod feeding observed) | 25% |

Soybeans are good at compensating for lower levels of defoliation. Note that for control to be economical the action thresholds would have to be the level of defoliation on average over the field, not just on the worst affected plants. Because our eyes are often drawn to the damage to plant tissue, rather than the healthy tissue it is easy to overestimate the level of defoliation. If it is helpful, take a chart such as Figure 2 (at the right on this page) to the field with you to help with estimating levels of defoliation.

A 40 percent leaf loss during any vegetative stage will result in a 3-7 percent yield reduction. Defoliation of 20 percent during the pod-forming and pod-filling stages will result in similar yield reductions.

Similar thresholds would also be used for green cloverworm.

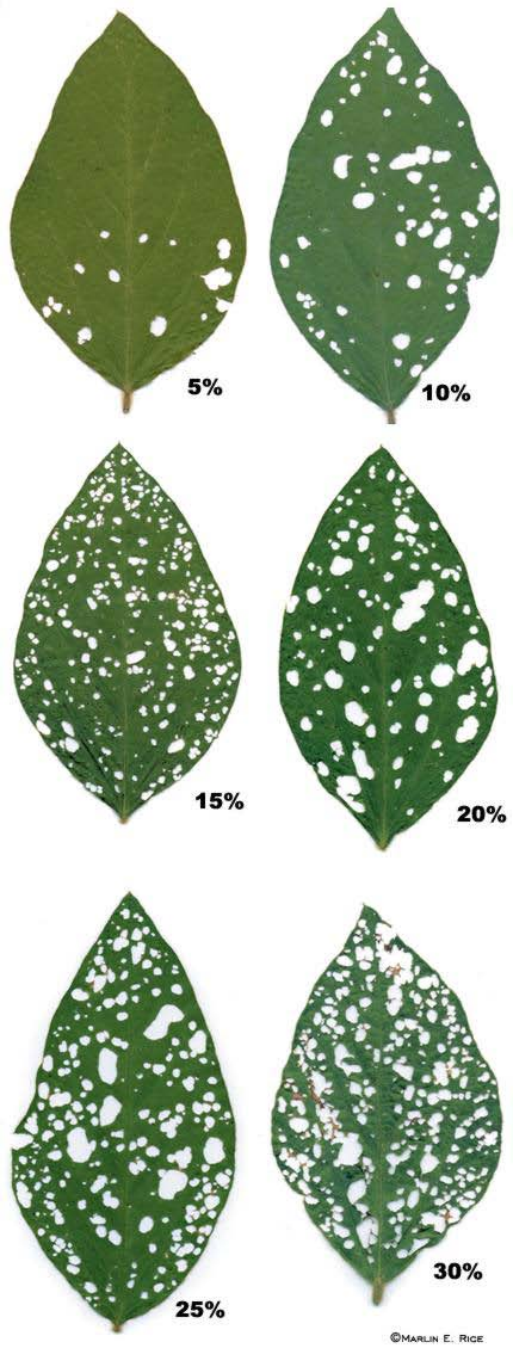


Figure 2. Levels of defoliation
Photo courtesy of Marlin E. Rice

## 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

### Insect Identification Quiz

These larvae can all potentially be found in the cobs of corn. What are they? Hint – only 2 species are shown in these photos.

A)

B)

C)

D)

**Answer**: Figures A), B), and C) are all corn earworm (*Helicoverpa zea*). Corn earworm is another type of caterpillar that can have several colour variations. It does not overwinter in Manitoba, but they migrate from Mexico and the southern United States and some years can become a concern for growers of sweet corn in Manitoba. This year there is a population that has arrived in Manitoba.

Figure D) is European corn borer (*Ostrinia nubilalis*). They will overwinter in Manitoba.

So the next time you find one of these while husking corn, you will be able to determine what species it is.