

Manitoba Crop Pest Update

Issue 12: August 7, 2019



Summary

Insects: Grasshoppers continue to be of concern in some areas. Diamondback moth are at noticeable levels in some canola fields. There has been some insecticide applications for bertha armyworm in the Turtle Mountain area.

Diseases: Having been out surveying since last report, we have seen field infection rates of Fusarium head blight up to 3% in some spring wheat, low levels of bacterial blight and Septoria leaf spot in soybeans, and light infestations of Verticillium wilt in canola. We've had a couple of reports from agronomists looking at sunflowers and they, too, are seeing Verticillium wilt in that crop. The name pertains to the genera of the respective pathogens, but they are distinct and do not have overlapping host range. Both act by blocking water-conducting vessels so the disease compounds the impact of prolonged dry conditions.

Weeds: Harvest is underway. More buyers are expressing concerns about pre-harvest herbicide applications. Be very cautious about applying herbicides without consulting the purchaser, especially for human consumption markets whether that is food or beverages. Post-harvest may be a better time to address weed control issues.

Entomology

Diamondback moth on Canola: Some frequently asked questions regarding diamondback moth on canola are:

What Threshold to Use? Thresholds for diamondback moth are nominal. This means they are based on experience rather than research quantifying the impact of the insect on the crop. The threshold used for podded canola is if larvae exceed 20-30 per ft². Also consider whether they are feeding on the pods. Leaf feeding late in the season will likely be of minimal significance. Research has just begun at the University of Alberta to try to quantify the impact of diamondback moth feeding on canola.

How long does it generally take to go through the larval stages? Temperature and food quality will affect rate of development, so the length of time as a larva can vary. Generally, the larval stages last anywhere from ten to 21 days. They will be in the pupal stage anywhere from 5 to 15 days. Warmer temperatures move them through these stages quicker.

How long will diamondback moth be damaging to canola: Diamondback moth will feed on the pods of canola, particularly when they are young. If soil moisture is sufficient, canola can compensate well for feeding to buds and flowers. The pod feeding is generally what can be most economical. If there is still leaf material they may prefer to feed on that. When leaves senesce, larvae may remove the surface tissue from the stems and seed pods. At times larvae may also chew into seed pods and eat the developing seeds. So if you are noticing pod feeding, do some counts of larval numbers per square foot and determine if there is still a population of larvae that could do further economical damage.



Larva (left) and pupae (right) of diamondback moth on canola pods
Photos from Garth Johnston – Farmers Edge

How to monitor to make management decisions: The suggested monitoring technique for decision making is to assess levels on plants in an area measuring 0.1 square metre (about 1 foot square). Beat them on a clean surface, and counting the number of larvae dislodged from the plants. To obtain an accurate count, repeat this procedure in at least five locations in the field.

I have a beating sheet (piece of canvas on a frame) I sometimes take to the field that will sit on a denser canopy and plants can be shaken over. This is more practical than trying to take plants out of the field to assess. Something like an old cookie sheet or even stiff piece of cardboard may serve the same purpose, as long as it is not something that will get windborne on windier days. Scouting for this insect used to be easier when canola cultivars were smaller and less vigorous. It can now sometimes be a challenge to remove plants in a square foot, especially if the crop is podding and pods are intertwined with neighboring plants, and you are trying not to disturb plants to the point of losing larvae. If this is proving frustrating, remember your goal is to assess if you are on average near the suggested threshold. At times it may be easier to move some plants aside and shake roughly a foot square of plants over your sheet/tray without removing them from the ground. As with grasshopper monitoring, it is not

possible to be highly accurate with counts at times. The goal is to get a sense whether you are likely at or near the threshold and whether management is economical.

Plant Pathology

Here's a photo of the leaf symptoms of **Verticillium wilt in sunflower**. To confirm diagnosis in the field, cut stems of affected plants near the base and inspect for dark discoloration in the vascular ring – between the green outer portion and the lighter interior.



Photo from Ingrid Kristjanson
– Manitoba Agriculture.

Weeds

Tall Waterhemp

As you may have seen from this report in previous weeks or on twitter (or not), we have Tall Waterhemp issues in the province. Now is a good time to scout, here are some tips based on a factsheet from Ohio State University:

- Walk fields or use binoculars or a drone
- Scout field borders and adjacent roadsides, areas that flood or receive manure application
- Plants without mature seed should be cut off just below the soil surface, and burned or composted.

- Plants with mature seed should be cut off and bagged (at least the seedheads) or removed via any other method that prevents seed dispersal through the field.
- Do not harvest areas of the field infested with waterhemp, instead mow several times to prevent seed production
- Harvest previously infested field(s) after all other fields, and clean the combine thoroughly before further use.

When in doubt contact MB Agriculture for assistance with identification or check out the resources below:

Map on where distributed: <https://www.gov.mb.ca/agriculture/crops/seasonal-reports/pubs/waterhemp-distribution-map.pdf>

Information on waterhemp: <https://www.gov.mb.ca/agriculture/crops/seasonal-reports/pubs/tall-waterhemp-notice.pdf>

YouTube video on ID: <https://www.youtube.com/watch?v=hh4BqkVETNE&feature=youtu.be>

And the video from Crop Talk on August 7th:

<https://www.youtube.com/watch?v=LTUSRncby5g&feature=youtu.be>

Just as a reminder, tall waterhemp is a tier 1 weed and must be destroyed (all plant parts). For more information on the Act, Regulations, FAQs, see the following hyperlinks – [Noxious Weed Act](#) and [Noxious Weed Act Regulations](#), [Declaration of Noxious Weeds](#), [FAQs and Control of Noxious Weeds](#)

Damage to Sunflower Growing Points

There have been several fields reported with damage to growing points. In some of these instances, the most likely culprit is a late application of Imazamethabenz (Assert 300 SC or Avert) with subsequent dry conditions. I found research from 2007 and an article from North Dakota in February of 2010 that explains the potential for injury which seems consistent with the scenario. Just a reminder, labels are important for a number of reasons, in this case, crop staging is relevant to potential for crop injury. The label for Assert application on sunflowers is from the 2 to 8 leaf stage.



Damaged growing points on sunflowers. Photo credit: Daryl Rex – Research Agronomist, NSAC

Avoiding Crop Injury When Using 'Assert' for Mustard

Numerous producers have applied the postemergent herbicide Assert® to control infestations of wild mustard in their sunflower. And it works. Grower experience and university studies through the years have confirmed the effectiveness of Assert on mustard when applied at the proper stage of sun-

Below: Symptoms of Assert injury to a young sunflower plant.



Photo: Rich Zollinger / NDSU

flower growth and under the right environmental conditions.

For growers using a Clearfield or ExpressSun variety, Beyond and Express will do a good job of controlling wild mustard. With non-herbicide-tolerant varieties, however, the only option other than Assert is Spartan — and Spartan only suppresses mustard (40-50% control, according to NDSU).

While Assert is an important component of the sunflower herbicide arsenal, use of this product also carries risk of serious crop injury — particularly if applied under high temperature and high humidity. Variety, growth stage, weather conditions, humidity, spray volume and additives all can influence the herbicide's safety for sunflower. Damage can range from plant stunting to head deformation.

North Dakota State University advises applying Assert only when air temperature (Fahrenheit) *plus* relative humidity totals less than 150. NDSU also cautions against using Assert on sunflower that is under drought or heat stress.

Recent years' research by Brian Jenks, weed scientist with the NDSU North Central Research Extension Center at Minot, has investigated several facets of sunflower crop injury and yield after treatment with this herbicide. In 2009 specifically, Jenks looked at Assert when applied with NIS, compared to a tank mix with a grass herbicide (Select®) and oil adjuvant (MSO); at the influence of an early application (four- to six-leaf stage) versus a late one (10-leaf stage); and at the effect of spray boom height above the sunflower canopy. Study results can be viewed at www.ag.ndsu.edu/NorthCentralREC/weed-science-research. ■

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Forecasts

Entomology:

Grasshopper Survey: A reminder for those participating in the grasshopper 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 or around the fields they are in and have this information included in the survey are encouraged to see the survey protocol (at the link below) for more details of the survey and where to send data. Estimates of grasshopper levels can be collected during regular farm visits.

"Estimates" of grasshopper populations is stressed as it will not be possible to accurately count grasshoppers along a field edge or ditch area as they will be moving around as you get near the area of the count. But estimate of what is present gives us some idea of the relative numbers that are present in different areas.

Data from the survey, along with weather data during the egg laying period of the grasshoppers, is used to produce a forecast for 2020.

The protocol and data sheet for the grasshopper survey is at: <http://www.gov.mb.ca/agriculture/crops/insects/mb-grasshopper-survey.html>

Identification Quiz:

Question: These caterpillars were all found in a canola field. Are they in any way related, and what are they.



Answer: These are all larvae of bertha armyworm. This shows some of the diverse colour morphs this species can have.

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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.