



Welcome to another edition of Hort Snacks. Dry conditions continue across lots of the prairies, with a bit of scattered showers to take the edge off. If you are lucky, they hit your once in a while. If not, you watch them blow by. Here's hoping that you get the rain you need when you need it.

In this edition, you'll find a number of pest-related articles, with 2 insect and 1 disease articles, as well as some good information on encouraging beneficial insects. There are lots of great workshops and extension events on the horizon. Don't lose sight of them. Otherwise, it is information business as usual, with bits and pieces of stuff for you to ponder about. Dive right in.

As you go through the summer, please take a moment to send a quick note to give us an update on crop progress, issues that you are encountering, as well as good things that are happening. We hope to see you this summer, whether at a field day or other event, or as we get out to visit. Take care. Good growing.

Rob Spencer/ Dustin Morton, Commercial Horticulture Specialists
 Alberta Ag-Info Centre, Alberta Agriculture and Forestry
 310-FARM (3276)

Website of the month
 Penn State Extension's "Start Farming"
<http://extension.psu.edu/business/start-farming>

In this edition of Hort Snacks

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MENTAL SNACKTIME – Hedging Bets

"The race is not always to the swift, nor the battle to the strong, but that's the way to bet." – Damon Runyon

"Often the difference between a successful person and a failure is not one has better abilities or ideas, but the courage that one has to bet on one's ideas, to take a calculated risk - and to act." – Andre Malraux

"We must have courage to bet on our ideas, to take the calculated risk, and to act. Everyday living requires courage if life is to be effective and bring happiness." - Maxwell Maltz

"If people sat outside and looked at the stars each night, I'll bet they'd live a lot differently." – Bill Watterson

THINGS TO DO / THINGS TO THINK ABOUT THIS MONTH

Strawberries

- Maintain good weed control – dandelion and chickweed infestations can contribute to Tarnished Plant Bug damage (issue in day-neutrals)
- Application of nutrients – primarily nitrogen –should be done as soon as June bearer harvest is complete → 50lb/ac N, P & K; Make 2nd application in mid-August → 15-20 lb/ac N (using calcium nitrate)
- Mowing old leaves of June bearing strawberries (only) at renovation should only be done if harvest and mowing can be completed by August 5
- Irrigation (if not supplied by rainfall) should be continued at this running stage of June bearers
- Day-neutral strawberries will require constant nitrogen feeding until end of August → 10-20 lbs actual N/ac/month → may be split into weekly or bi-monthly applications
- Field cooling of strawberries should be considered if temperatures exceed 30°C. Day-neutral flower bud formation ceases at 26-28°C
 - Failure to cool will result in the conspicuous absence of a crop a month later

Saskatoon berries

- Ensure any off-plant types (e.g. chokecherries) are pruned out of the Saskatoon berry rows prior to harvest
- Soil moisture can be reduced after harvest to encourage plants to harden-off
- Harvest at night or early morning to take advantage of fruit temperatures (reduces cooling requirements)
- Cool crop immediately after harvest to preserve produce quality
 - Ensure that there is airflow through the harvested product to cool more quickly
 - If freezing the graded crop, consider that smaller quantities or thin layers will freeze more quickly than bulk quantities – which will affect final quality of the frozen product

Vegetables

- Harvest product at appropriate stages, with consideration given to cost of harvesting versus total yield
 - Multiple harvests of each planting can increase total yield but quality (and returns) may be higher for early harvests of each planting
- Cool harvested product quickly to slow post-harvest degradation
- Final washes/rinses should be in potable water

Greenhouse ornamentals

- If holding plants for extended periods, ensure plants are kept healthy, fertilized and free from pests
 - Apply sufficient water, maintenance fertilizer, etc.
- Clear out older stock as quickly as possible

General / Other

- Adjust irrigation as soil moisture conditions and plant requirements change.
 - As plants begin to mature and fruit fills, moisture requirements typically increase.
 - Maintain soil moisture levels through harvest (particularly during fruit formation and filling)
- If June was particularly wet and you have sandy soils, it is possible that soil nitrogen levels may be depleted. Make light applications of nitrogen. Heavy applications of nitrogen can lead to soft fruit and plants

Pest Monitoring / Management

- Continue to monitor disease and insect pest development and make appropriate controls (adhering to PHI and REI restrictions)
- Remove / prune out diseased plant material
- Check out PMRA website for most recent info on registered pesticides
- Abandonment (ploughing under) of an annual crop can sometimes be more cost effective than trying to salvage a heavily infested crop with chemical sprays (weeds, insects, disease)
- Consider cultural pest control practices such as exclusion, using such technologies as row covers, netting, etc.
- **Raspberries**
 - Monitor for spider mites and control if necessary
 - Examine primocane growth on floricanes for spur blight infection
 - Plan post-harvest fungicide spray if identified
- **Saskatoon berries**
 - Continue to monitor for Entomosporium and apply fungicides with short Pre-harvest interval if necessary
 - Ensure that you do not exceed seasonal maximum number of applications
 - If Woolly Elm Aphids have been or are an issue in your orchard, application of Orthene, Alias or Admire is permitted on bearing and non-bearing plants
 - Apply as close to peak aphid migration as possible – early to mid-July to mid-August (depends on crop and season)
 - Apply after harvest in bearing plants, although Alias / Admire may be applied with a short PHI window (14 days)
- **Greenhouse ornamentals**
 - Monitor for spider mites and aphids, as well as foliar diseases such as powdery mildew
 - Correct situations that encourage fungus gnats

Fruit & Vegetable Field Days

#1 / #2 / #3

July 21 (Erdmann's) /

August 10 (Solstice) /

September 1 (Hidden Valley)

The plan for this year:

- Evenings (starts at 5:30pm)
- Single farm locations
- Focused / Specific topics

Watch www.albertafarmfresh.com OR
AAF [Coming Events](#) for event details.

Equipment for Sale:

Little Burnt Farms (Saskatoon/Chokecherry farm)

- Weed badger model 2030 (similar to model 4000) with tillage header and also mower header – paid \$ 9800) Asking \$6900 CDN
- Saskatoon (Blueberry) destemmer – \$7500.00 CDN Good shape
- Single row transplanter – \$200

Little Burnt Farms

Pat & George Monner

PO Box 756 Fairview, AB T0H 1L0 Ph: 780-596-3944

Equipment Wanted:

Looking for various carrot packing line equipment as follows:

- bin dumper
- receiving hopper
- barrel washer
- sizer
- bagger

In addition to packing line equipment we are also looking for a carrot harvester/top puller.

Please send details to themellows@live.ca or call 403-330-7480

Upcoming Conferences / Workshops

July 2015

- Cultivate 15 (Formerly OFA Short Course)
July 11-14, 2015 – Greater Columbus Convention Centre – Columbus, OH
<http://cultivate15.org>
- Organic Alberta - Healthy Soils Workshop w/ Jill Clapperton
July 16, 2015 – Holborn Hall – Parkland County
- Hort Snacks in the Field (Vegetable/IPM focus)
July 21, 2015 – Erdmanns Gardens & Greenhouse – Vimy, AB
<http://www.albertafarmfresh.com/> or AAF [Coming Events](#)
- 99th Potato Association of America (PAA) Conference
July 19 -23, 2015 – The Doubletree Hilton – Portland, Maine, USA
www.potatoassociation.org <http://www.paaannualmeeting.org>

August 2015

- NAFDMA Advanced Learning Retreat 2015
Aug 8-11, 2015 – Alstede Farms – Chester, New Jersey, USA
<http://www.farmersinspired-2015alr.com/>
- Hort Snacks in the Field (Saskatoon berry/Processing focus)
August 10, 2015 – Solstice Berry Farm – Crossfield, AB
www.albertafarmfresh.com
- North American Strawberry Growers Association (NASGA) Summer Tour
August 11-12, 2015 – Maryland, USA area
www.nasga.org
- Hort Snacks of Wheels – Greenhouse Bus Tour
August 24-25, 2015 – Sherwood Park, AB to Saskatoon, SK and back
- Farwest Show
Aug 27-29, 2015 – Oregon Convention Centre – Portland, OR
<http://www.farwestshow.com/>

September 2015

- 2015Canada's Outdoor Farm Show
Sept 15-17, 2015 – Woodstock, ON
www.outdoorfarmshow.com
- Hort Snacks in the Field (Saskatoon berry/Processing focus)
Sept 1, 2015 – Hidden Valley Gardens – Sylvan Lake, AB
www.albertafarmfresh.com
- Explore Horticulture (for prospective growers)
Sept 12, 19, 26, 2015 – Grande Prairie, Red Deer, Lethbridge
See AAF [Coming Events](#)
- Hort Snacks-to-Go Webinar
Sept 21, 2015

NEWSLETTER USE RESTRICTIONS

Please feel free to share all or portions of this newsletter with other interested parties.

If you want to use content from this newsletter in other media, please request permission before doing so.

HortSnacks on Wheels

August 24 and 25, 2015



Cost: \$100 +GST (includes all meals)
Hotel room cost paid for by participant

**Bus leaves at 7:30 AM from
Salisbury Greenhouse in
Sherwood Park on August 24.**

Tour stops include:

**Kathy's Greenhouse, Kitscoty
Solar Gardens, Saskatoon**

**Wilson's Greenhouse and Garden Centre, Saskatoon
Dutch Growers Garden Centre, Saskatoon**

All aboard for a whirlwind tour of four fantastic greenhouses in eastern Alberta and Saskatchewan! This tour will visit four unique ornamental producers to find out what they're doing that sets them apart from the pack in terms of production and marketing. Opportunities for networking and expanding your operation abound on this jam packed tour into our neighbour to the east!

**To register please call 1-800-387-6030
or for more information call Dustin Morton at 403-742-7571**



HortSnacks in the Field



JULY 21

(Rain date July 28)

Erdmann's Gardens and Greenhouses (Vimy, AB)

Ron and Wendy Erdmann and their family have been growing vegetables for over 30 years in Westlock County. Ron will be discussing their Integrated Pest Management (IPM) program and their cooperation with Alberta Agriculture and Forestry's current horticultural pest surveillance project.

AUGUST 10

(Rain date August 17)

Solstice Berry Farm (Crossfield, AB)

Marsha and Rick Gelowitz jumped into saskatoons in 2003 and have become a force to be reckoned with. Their state-of-the-art processing line has enabled them to put their product in a number of different markets and they'll be sharing their successes and failures in this business.

SEPTEMBER 1

(Rain date September 8)

Hidden Valley Garden (Sylvan Lake, AB)

Growing crops since 1994 on their land just outside Sylvan Lake, Jim and Lesley Hill have been working on developing their soil health and quality for 20 years. Jim will be speaking to his cover cropping techniques and his use of tillage radish to decrease erosion and increase soil health on his farm.

To register call 1-800-387-6030

Sessions begin at 5:30 p.m.

Light supper provided.

Growing Forward 2 

A federal-provincial-territorial initiative

Alberta 
Government

Canada 



Explore Horticulture!



Horticulture is a broad and diverse industry full of opportunities! This workshop will look at different methods of production and marketing with Agriculture and Forestry specialists. The workshop(s) will consist of a half-day in the classroom, followed by a tour of local farmers' markets and producer operations.

September 12

(Grande Prairie Provincial Building)

September 19

(Red Deer Recreation Centre,
Sportsmans Room)

September 26

(Lethbridge Exhibition Park,
Saddle Room)

To register call 1-800-387-6030

Cost: \$15 + GST per person (includes lunch)

8:30 a.m. Start

Growing Forward 2 

A federal-provincial-territorial initiative

Alberta 
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Canada 

Check your Elm Trees for Dutch Elm Disease (DED) Symptoms

By Janet Feddes-Calpas

Please help us prevent Dutch elm disease (DED) in Alberta. It is that time of year to be checking your elm trees for DED symptoms. A confirmed DED tree must be removed immediately to prevent further spread.

If an elm tree is infected with DED the leaves initially become wilted and soon will curl up, turn yellow and then brown. This is also referred to as flagging. Leaf symptoms are usually accompanied by brown staining under the bark. Symptoms begin in late spring or any time during the growing season. Suspicious elms must be tested in a STOPDED recognized lab for the presence of the fungus. Lab costs are covered by STOPDED.

This fatal fungus, which affects all species of elm trees in Alberta, clogs the elm tree's water conducting system and will cause the tree to die, usually within one or two seasons. The fungus is primarily spread from one tree to another by three species of insect vectors, the smaller European elm bark beetle (SEEBB), the native elm bark beetle (NEBB) and the banded elm bark beetle (BEBB). The beetles are attracted to weak and dying trees, which serve as breeding sites for the beetles. Once the beetles have pupated and turned into adults they leave the brood gallery and fly to healthy elms to feed, thus transporting the fungus on their bodies from one tree to the next. STOPDED monitors annually for the vectors throughout the province and both the SEEBB and BEBB have been found in various locations.

For this reason, it is important that elm firewood not be transported into or within Alberta as the wood may be harbouring the bark beetles. Firewood is confiscated at all the Alberta-Montana border crossings.

All elm trees that are showing DED symptoms must be reported immediately. To report symptoms or for more information call the toll free provincial STOPDED hotline by dialling 1-877-837-ELMS (3567). You can also visit our website at www.stoppeded.org.

Q&A

Q: How are you minimizing your risk related to severe weather?

A: Most producers have more than one type or variety of crop, which spreads risk somewhat, but doesn't remove it entirely. The use of technology, such as hail netting, plasticulture, row covers, etc. can also help to either offer some protection from some of the more direct physical damage or might help crops move past severe weather.

The purchase of crop insurance can be worth it, especially if you are prone to losses from severe weather. AFSC has expanded their crop insurance options for minor crops (such as horticulture), without the historic regional location restrictions. Maybe have a look at it.

Next Month's ? → [If you do on-farm sales, do you consider yourself an agritourism operation? How does that affect what you do?](#)

CleanFARMS 2015

CleanFARMS will be running obsolete pesticide & livestock medication collections in October of 2015 as follow:

- Southern Alberta (Red Deer to border)
- Northern Saskatchewan (Davidson north)

The program is free and ag-retail collection locations/dates will be released in early summer. The program is delivered by CleanFARMS and its members in each province/region of the country every three years.

Visit www.cleanfarms.ca for more information.

NOTE: Can you please re-distribute this note to all your organizations and members so it gets as wide a distribution as possible? Thanks!

Encouraging Beneficial Insects

Everybody is familiar with ladybugs and lacewings as voracious, pest consuming beneficial insects. But fewer are familiar with how natural enemies such as hover flies, ground beetles, and even yellow jacket wasps contribute to a healthy integrated pest management (IPM) plan by reducing pest numbers. Through augmentation, conservation, and introduction of natural enemies, producers can not only increase their populations in their fields, but also benefit from a healthier, better producing crop.

According to the classic “Natural Enemies Handbook” (ISBN 978-0-520-21801-7) by Flint and Dreistadt, use of beneficial insects or natural enemy populations is based on three basic principles in agriculture today; conservation and enhancement, augmentation, and classical biological control or importation. All three of these relate to the principles of bio-controls which were introduced previously (Predation, Parasitism, Herbivory, Antibiosis, and Competition), but vary in their use in the industry.

Greenhouse producers are perhaps most familiar with the concept of augmentation where a crop is either inoculated with a natural enemy or inundated with it. In an inoculation situation, beneficial insects that were reared in a lab or collected in a field are introduced to an area such as a greenhouse or field. Typically the goal of these insects is to breed and increase in population over the course of the program, (hopefully) resulting in control throughout the season. Most commonly, inoculation is used after an event which has decimated the native population such as a pesticide application, a weather event or may be done in a space where natural enemies are typically absent (i.e. a greenhouse situation).

In a similar vein, the inundative approach to augmentation introduces a species of beneficial insect but uses it to treat a ‘hot spot’ or problem area, effectively overwhelming the pest in numbers. This population is often short lived and while it may maintain a base level, natural enemy populations will commonly drop alongside the pest population as it can no longer sustain it. While both of these techniques are commonly used in greenhouse situations, they are less applicable to field growers, as most beneficial insects used in this way aren’t typically capable of overwintering. Furthermore, they can be an expensive prospect for field growers given how mobile many of these controls tend to be.

Classical biological control or importation generally involves looking at a pest’s native range, finding a natural enemy of it there and importing it into its adopted range. This type of biological control has historically been controversial as it often involves importing a foreign species which can itself potentially become a pest. Nowadays, this research is often undertaken at a federal level with a substantial amount of due diligence and consideration. However, successful Canadian examples do exist in the control of St. John’s wort and leafy spurge. Given how risky this process can be, it is more commonly reserved for invasive species which present a substantial threat to native plants and ecosystems, making it out of reach for the average grower.

The final method, conservation and enhancement, is where most field growers will see real benefit in their operation. Most fields generally have much larger populations of beneficial insects than pests; however these can be substantially reduced in the process of killing pests. In some cases this can actually exacerbate the problem by removing barriers to another pest becoming a problem, resulting in a secondary wave.

Many sources will often treat natural enemies as “livestock”; just as a cow needs water, feed, and shelter, so do the beneficial insects in a producers field. So how best to keep your livestock happy? One of the easiest ways is to avoid the use of pesticides that may harm them. Using selective pesticides, selective applications (i.e. applying only to areas of concern) or timing applications to a time when they’re not active such as early morning can help mitigate losses of beneficial insects. Similarly, minimizing cultural practices like soil disturbance, burning, and timing irrigation better can also all go a long ways to making a field more hospitable to natural enemies.

Feed and water for these beneficial “livestock” can come in many forms; small pools of standing water, other insects, and pollen and nectar from a diversity of plants. Shelter for natural enemies can often be found in areas with increased plant diversity such as headlands and surrounding trees and shrubs. Similarly, for soil dwelling insects, excessive heat can interrupt lifecycles and decrease activity. Cover crops can not only work to alleviate this heat but will ensure further plant diversity and increased diversity amongst beneficial controls.

As with most topics, knowledge is power. The more that a producer knows about their native natural enemies, the better they can manipulate the environment to make it more inviting for these ravenous little beasts. By incorporating a few new techniques into their operation, growers can ensure happy, healthy ‘livestock’ and a crop yield that reflects it.

Constant Vigilance – Watch out for Late Blight

Over the last few years, there has been a great deal of concern in Alberta surrounding a serious disease called Late blight that affects mainly potatoes and tomatoes. This disease is caused by a fungal pathogen called *Phytophthora infestans*. In those years, the favourable conditions for disease development, combined with the presence of the pathogen, have resulted in multiple outbreaks of Late blight in commercial, market garden and urban potato and tomato crops throughout parts of Alberta. A number of different strains of the pathogen have been identified in different years, each being more or less aggressive on either potatoes or tomatoes. For 2015, this disease continues to be a risk for all Solanaceous crops (potato/tomato family) grown in Alberta.

Although the hot and dry conditions that have been observed in most parts of Alberta this year (so far) will help to reduce the potential for this disease, irrigation and rain showers can create favourable conditions in localized fields and plantings. Certain strains of *Phytophthora infestans* are also more tolerant of warmer/drier conditions than others, which increases risk.

It is recommended that ALL growers of potatoes and tomatoes be extra vigilant to try and catch any diseased material early on, before a significant outbreak can occur. In the early season, growers should watch for:

- Tomato transplants and newly emerged potato shoots with water-soaked leaf lesions
- Plants that develop lesions early on in the season or as the season progresses, particularly if conditions are moderate and wet/humid

If you find plants showing suspicious lesions, it is recommended that you can contact 310-FARM (3276) to determine if further testing is required and to discuss management. Please do not hesitate to report an incidence, as early awareness will help to prevent and contain an outbreak and can help others to protect their crops.

While undertaking identification, producers should dispose of infected material as quickly as possible, removing disease parts (small scale) or killing out plants so disease cannot develop further. Protective fungicide applications can be made if conditions favour disease (and if disease is known to be present in the province)

Information on Late Blight

[FAQ – Late Blight of Potatoes and Tomatoes](#)

Rob Spencer, BSA, MSc, P.Ag. **Commercial Horticulture Specialist**

robert.spencer@gov.ab.ca

Alberta Ag-Info Centre

310-FARM (3276)

FAX: 403-742-7527

In the News / Interesting Articles

- [Shelters for predatory mites sometimes more effective than extra food](#) – Wanginen UR article
- [10 Digital Marketing Ideas for Garden Centers](#) – Greenhouse Grower article
- [Build A Better Business Plan For Your Farm](#) – Growing Produce article
- [Online tools to help you estimate production costs](#) – MSU article
- [Jellyfish barge: Floating greenhouse enables self-sufficient farming](#) – International Business Times article
- [Light as a crop protection product?](#) – HortiDaily article
- [Managing Cruciferous and Solanaceous Flea Beetles in Organic Farming Systems](#) – eXtension article
- [Tips To Prevent Theft At Your Farm Market](#) – Growing Produce article

Maple Leafcutter

Paraclemensia acerifoliella

Crops Affected: Saskatoon berries in western Canada; Red Maple and sugar Maple in eastern North America.

Life Cycle:

- Adult is a tiny metallic blue moth; larva is a tiny cream-colored caterpillar
- Adults emerge in late May to mate and lay eggs.
- Caterpillars hatch in mid-June and mine the leaves for about two weeks
 - Caterpillars then cut small ovals from leaves and use them as a "shield" or covering
- Larvae live under the shield and skeletonize the leaf (stripping away the green tissues) at the edge of the shield, leaving a characteristic curved or ringed shape
- Caterpillars drop to the ground and turn into small, dark pupae by mid-August.
- They overwinter in the soil, and change into moths the following spring
- Single generation per season

Symptoms:

- Leaves may appear brown from a distance in mid-July until leaf drop in the fall
- Leaves have pieces cut from them, with small rings of brown – due to characteristic feeding practice of the caterpillars
- Brown rings may coalesce or merge, if many caterpillars are present
- Tiny adult moths are metallic blue and fly in late June during the daytime.

Monitoring:

- Watch for evidence of leaf mining activity in early July.
- Watch for evidence of oval holes and skeletonization rings from mid-July until leaf drop

Management:

- Currently no insecticides are licensed for control of leaf cutter caterpillars
- Because the caterpillars are concealed within the leaves, or under a shield of leaf material, contact insecticides would not be effective
- Because the damage occurs so late in the season, after berry production, this species is not considered a serious threat



Maple leafcutter adult moth

Photo by S. A. Gosche



Brown damage on leaves – NOTE feeding skeletonization rings & leaf cut outs



Brown rings, oval holes; shield pieces covering larval stages



Larval stage – covered & exposed

Exposed larval stage of leafcutter – multiple leaf shield sizes are visible, evidence of growing insect

Photo by Greg Pohl



Photos by Robert Spencer

INSECT OF THE MONTH

Spruce budworm

Choristoneura fumiferana

Crops Affected:

White spruce, Balsam fir, black spruce, tamarack, etc.

Life Cycle:

- 1 year life cycle
- Larvae
 - Multiple larval instar stages
 - Overwinters as 2nd instar larvae, emerging in late April-May
 - Larvae range in colour throughout their development
 - Young larvae have yellowish bodies and dark brown heads and thoracic shields
 - Mature larvae have reddish brown bodies with lighter sides and black heads (when mature), with a brown thoracic shield divided from the head by a thicker white line. A double line of paired white dots are visible along the back
 - Larvae can reach up to 1 inch (25mm) in length at maturity
 - Larvae mine needles, unopened buds and male flowers and feed within expanding shoots, focussing on terminal branches and upper crown, in the new growth
 - Larvae tie together several shoots to create a tunnel to feed within
- Pupae form in June and are attached within the feeding tunnel
- Adults
 - $\frac{3}{4}$ inch (20mm) variable coloured grey/brown adult moths emerge in late June-July
- Eggs are laid in groups of 15-60+ on the underside of host tree needles in July
 - Eggs hatch in approximately 10 days
- Newly hatched larvae spread through the foliage on threads, forming overwintering structures under bark scales
- Pest can be dispersed over a large area on silken threads as young larvae or as adults, making eradication/control difficult

Late stage instar larva

Photo by: planetnatural.com



Spun together needles, frass and webbing indicative of an infestation of spruce budworm

Photo by: msue.anr.msu.edu

Symptoms:

- Larvae feed at the base of needles
 - Leaves damaged needles
 - Foliage will dry out and turn a reddish-brown colour until the needles fall off
- Shoots may be tied together with silk
- Tree crowns may appear reddish-brown due to the combination of dried/chewed needles, dead buds and frass held together with silk threads
- Branch defoliation and lack of radial growth may be observed with short term feeding
- Heavier, prolonged feeding (3+ years) can result in reduced vigor, as well as branch death, leader death, etc.
- 5-7 years of outbreaks can result in tree death

Monitoring:

- In forest settings, pheromone trapping can be used to monitor populations
- Watching for defoliation and damage symptoms can be useful in detecting population build up

Management:

- Later larval stages may be controlled through the application of registered insecticides
 - In outbreak situations, control may be difficult
- In small/local areas, with limited budworm populations, streams of water may be used to dislodge and disrupt larvae

DISEASE OF THE MONTH

Septoria Leaf Spot (Poplar)

Septoria spp. (anamorphs = Mycosphaerella spp.)

Crops Affected: balsam poplar, hybrid poplars, aspens

Disease Cycle:

- Fungal pathogens
- Pathogen overwinters on infected dead leaves from the previous year
- As warmer spring conditions occur, ascospores are produced in the lesions
 - Ascospores are dispersed by the wind
- Emerging leaves are infected by spores
- Secondary infections can develop rapidly from these initial infections in favourable conditions, as conidia are produced and spread
- Heavy secondary infections can cause premature leaf loss
- Tree death is rare from infection

Symptoms:

- In early summer, a distinct tan circular spot with black margins and small black fruiting bodies in the center may be observed
- As the season progresses, irregularly shaped brown to black spots coalesce into large areas
- Infected leaves often fall prematurely, with trees losing leaves as much as 1 month early
- In wetter climates, cankers have been known to develop on twigs and main stems

Conditions Favouring Disease Development:

- Wet conditions and 21-24°C (70-75°F) temperatures encourage sporulation

Management:

- Sanitation can be an effective management tool.
 - Fall removal of infected leaves, twigs and branches can reduce the amount of disease the following spring
 - Rake and destroy infected leaves
- Keep leaves as dry as possible to reduce disease incidence
 - Adjust irrigation to speed up leaf drying
 - Space trees apart to reduce humidity
- Fungicide sprays are not normally needed but if applied early enough, may help prevent disease development
- Monitor bark for darker patches, which may be indicative of the development of cankers
 - This sort of diseased tissue should be removed



[Pest Management
Regulatory Agency](#)

[\(PMRA\) –](#)

[Electronic Label Search
Engine](#)

Search the database for
electronic labels

Septoria leaf spot on poplar – left
= early infection with individual
lesions – right = later infection,
with lesions coalescing
Photos by www.ext.colostate.edu

Septoria leaf spot on poplar
Photo by www.extension.umn.edu