



Well, after weeks (to be honest, months) of waiting for spring to arrive, here it is. The snow piles are rapidly disappearing, the water levels are dropping (mostly) and things are moving quickly towards the start of the growing season. And with the season comes a new edition of Hort Snacks.

In this edition, you'll find many things. There are, of course, more "Things to Do", news articles to read, as well as some events to look forward to. You'll also see that there are a couple of programs to watch out for including FEAP and CAP.

Also in this edition, you'll find some quotes and poems to inspire you, some shared thoughts from your peers to inform you, and the results of the annual Alberta Direct Market Fruit & Vegetable Price survey to educate you (or inform you – you decide). At the same time, there are lots of bits of information on insect pests, diseases and related tools to prepare you or assist you in managing them.

As always, if you have any questions, comments, suggestions or ideas for future editions, or anything related to the success of your operation, please don't hesitate to give me a call, email or otherwise. Happy growing!!!

Rob Spencer, Commercial Horticulture Specialist
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FEATURED WEBSITES

WaterQual tool – water quality interpretation tool for irrigation of greenhouse and nurseries

<http://cleanwater3.org/wqi.asp>

World Crops Microsite – Vineland Research & Innovation Centre

<http://feedingdiversity.vinelandresearch.com/>

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.

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THINGS TO DO / THINGS TO THINK ABOUT THIS MONTH

Strawberries

- Light application of nitrogen as growth commences (end of April or early May – 10-20 lbs actual N/acre); make a heavier application if there was severe winter damage
- Foliar application of complete fertilizer once leaves fully developed; if regrowth is weak, weekly applications may be necessary
- Application of herbicides for grassy weed control prior to bloom (if required)
- Frost protection of June bearers at bloom if required
- Deblossom newly planted June bearers for season
- Deblossom newly planted Tristar Day-neutrals for 6 weeks
- Apply herbicide 4-6 weeks after planting new fields

Raspberries

- Complete cane thinning
- Remove dead cane tips down to active growth
- Make 2nd application of N (mid-May) – 20-40 lbs actual N/acre

Saskatoon Berries

- Commence 1st application of nitrogen and phosphorus during early-mid May (additional application June-end) – 15-25 lbs actual N/acre; 10-20 lbs P/acre – adjust rate when banding

Black Currants

- Apply nitrogen (end of April or early May) – starting in 3rd year – 50 lbs actual N/acre

Vegetables

- Pre-planting application and/or incorporation of herbicides (trifluralin, etc.) for registered crops in early part of month (if not completed previously)
- Seeding of most crops should be completed before month end
- Consider multiple planting dates to spread out harvest dates and reduce risk
- Transplant crops when risk of frost is past or protect crops using field or row covers or mini-tunnels
- Extending the early growing season in spring rather than fall has more sunlight benefit
- Consider try a few “new to you” varieties, to hedge your risk against the loss of “standby” varieties

General / Other

- Monitor soil moisture conditions and irrigate as required
- Install / repair outhouses, update signage, arrange washing facilities & drinking water locations
- If foliar feeding, application on slow drying days may increase uptake

Pest Monitoring / Management

- Continue insect and disease monitoring
- Watch out for unusual insects – often linked with weather
- Do not apply pesticides during full bloom

Vegetables

- Flea beetle adults emerge and begin egg laying towards mid-month – monitor for shot holes in cotyledons late month
- Consider the use of appropriate seed treatments in cool and/or wet seeding conditions

Strawberries

- If Botrytis fruit rot was a problem in the past, consider application of fungicides as growth commences; generally one early application and one late application should be sufficient.
- Monitor 1st blossoms for Tarnished Plant Bug activity and take control options as necessary
- Monitor for strawberry clipper weevils when temperatures exceed 18°C

Saskatoon berries

- Make applications of insecticides and fungicides based on label timing, with adjustments for weather conditions and scouting / monitoring activities (e.g. dryer conditions may allow you to skip a Entomosporium control application)
- Decis 5.0EC applied at green tip stage (flower bud break to tight bud cluster), early flowering (25-50% bloom) and after petal drop
- Fungicides with the active ingredient propiconazole (e.g. Topas/Tilt/Bumper, etc.) may be applied at white tip, petal drop and green fruit stages
- Adhere to Pre-Harvest Interval and Re-Entry Intervals for respective pesticides

Black Currants

- Apply insecticides against currant fruit fly at petal fall (repeat 7 days later)

OPEN FARM DAYS: SAVE THE DATE

August 18-19, 2018

The deadline for farms to register to participate is May 31. Similar to last year, farms can choose which day(s) they would like to participate (Saturday, Sunday, or both).

Open Farm Days is a catalyst for stimulating economic prosperity by promoting the Alberta agriculture story. Last year's event had over 20,000 visits and \$146,000 in on-farm sales at over 100 participating farms and 22 farm-to-table culinary events.

Interested farms can learn more by emailing openfarmdays@gov.ab.ca or by calling 780-638-4302. Online registration will open soon at www.albertafarmdays.com

IN THE NEWS

- [Opinion: Why the Floriculture Industry Must Be Willing to "Humble Brag" About Itself](#) – Greenhouse Grower article
- [Researchers Take Pesticides Out of Honeybees](#) – American Fruit Grower article
- [Organic Tomato Foliar Pathogen IPM](#) – eOrganics video
- [10 Ideas You Can Steal from California Farm Markets](#) – Growing Produce article
- [5 ways to fund your farm's expansion](#) – HortiDaily article
- [Two Simple Hydroponic Production Solutions That Generate Results](#) – Greenhouse Grower article
- [Maximizing Potato Yield Starts at Planting](#) – SpudSmart article
- [Biocontrol expanding in berry fields](#) – Fruit & Vegetable Magazine article
- [How to Get What You Need from Fertigation](#) – Growing Produce article
- [Preventive Learning About Pests Before Experience Takes Over](#) – eGro article (PDF)
- [Farmers Wanted for Life on Mars](#) – Growing Produce article
- [Plants 'hedge their bets' in germination: the route to better crop yields](#) – U of Birmingham article
- [Intercropping Insectary Plants without Losing Production Space](#) – Growing Produce article
- [Why Potato Virus Y Needs Your Attention](#) – Growing Produce article
- [Our world if the largest countries had the biggest population](#) – Fresh Plaza image – note – Canada would be where Pakistan is now
- [A Look Beyond the Hype of Vertical Farming](#) – Greenhouse Grower article
- [How to Decide Whether to Build a New Greenhouse Structure or Retrofit an Existing One](#) – Greenhouse Grower article

Upcoming Conferences / Workshops

May 2018

- **10th World Potato Congress**
May 27-31, 2018 – Cusco, Peru
<http://potatocongress.org/>

June 2018

- **U of S Fruit Program Annual Plant Sale**
June 1, 2018 – Horticulture Field Lab – Saskatoon, SK
www.fruit.usask.ca/extension.html
- **Haskap Alberta – Southern Alberta Growers Day**
June 9, 2018 – Picture Butte, AB
- **15th International Conference of the European Industrial Hemp Association (EIHA)**
June 12-13, 2018 – Maternushaus – Cologne, Germany
<http://www.eiha-conference.org/>
- **Greenhouse Canada Grower Day 2018**
June 20, 2018 – Holiday Inn – St. Catharines, ON
<http://www.greenhousecanada.com/grower-day/>
- **International Floriculture Expo**
June 25-27, 2018 – McCormick Place, Chicago, Illinois, USA
<http://www.floriexpo.com/>

July 2018

- **Haskap School at the U of Saskatchewan**
July 5, 2018 – U of S Campus – Saskatoon, SK
www.fruit.usask.ca/extension.html
- **Haskap Field Day at the U of Saskatchewan**
July 6, 2018 – U of S Hort Field Lab – Saskatoon, SK
www.fruit.usask.ca/extension.html
- **Cultivate 18 (Formerly OFA Short Course)**
July 14-17, 2018 – Greater Columbus Convention Centre – Columbus, OH
<http://www.cultivate18.org/>
- **102nd Potato Association of America (PAA) Conference**
July 22-26, 2018 – Boise Center – Boise, Idaho, USA
www.potatoassociation.org

FOR SALE:

Six John Deere 71 Flexiplanters (for vegetables) with discs and sprockets complete

- For mounting on a tool bar with 3 point hitch
- In very good condition
- Asking \$250 each

For more information:

Contact Peter Hofer
403-641-2463 ext. 120

Farm Energy Agri-Processing (FEAP) Program Open

www.agriculture.alberta.ca/feap

Program Description:

The Farm Energy and Agri-Processing Program shares costs with the agriculture and agri-processing sector on energy efficiency investments. The Program is designed to encourage energy management which will result in cost savings, energy conservation, and ultimately, reduced greenhouse gas emissions.

The Program offers financial support, subject to financial constraint, to Applicants who incorporate high efficiency equipment that is identified in the applicable Funding List in their construction and/or retrofitting projects.

Key Information:

- This program is RETROACTIVE to April 2016.
 - Applicants with eligible receipts dated April 2016 and later can apply.
 - Retroactive projects are subject to current eligibility criteria.
- 50% cost share on most items. See Funding List for full details.
- \$250,000 maximum grant per Applicant per year
- Funding Window is from now to Feb 2020
- Applications will be processed in a first complete, first served basis.
 - Incomplete applications will not secure a spot in line.
- Watch for emails from GMS. Grant_Management_System@agric.gov.ab.ca. They will notify you as your application moves through the steps.

Canadian Agricultural Partnership (CAP) PROGRAMS

Have a look at the new Canadian Agricultural Partnership (CAP) Program website (www.cap.alberta.ca). CAP is a five-year, \$3 billion federal-provincial-territorial investment in the agriculture, agri-food and agri-based products sector. It is the successor of the 2013-18 Growing Forward 2 (GF2) partnership.

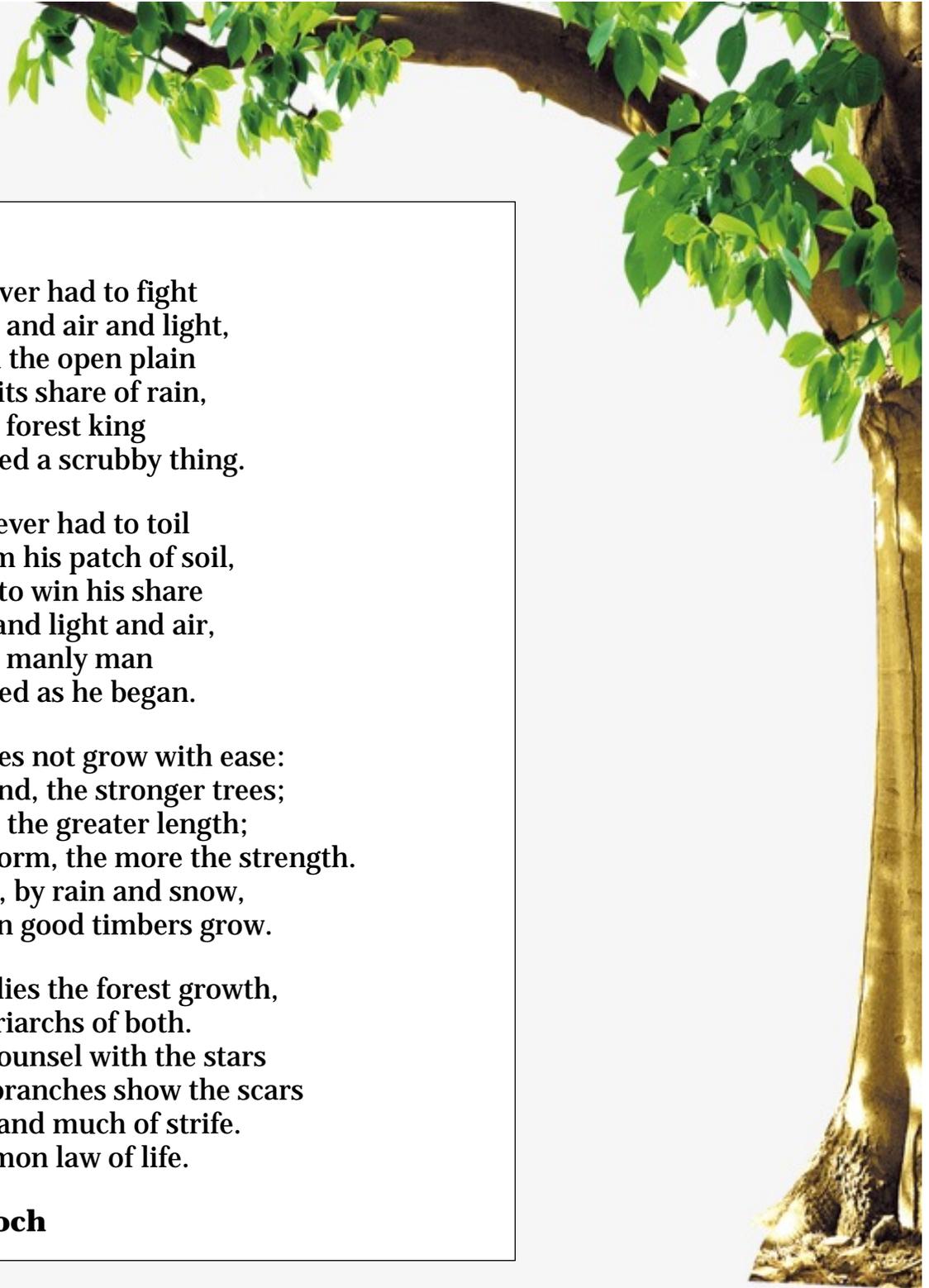
In Alberta, CAP represents a federal - provincial investment of \$406 million in strategic programs and initiatives for the agricultural sector. The roll-out of the CAP program suite in Alberta began in April, 2018, and will consist of a phased roll-out of 15 programs over the spring, summer and fall of 2018. Applications and program details consisting of cost-shares and eligible activities and/or items will be released with the opening of each program. The criteria for eligibility will be made available along with the program details.

Please note, there are some differences between CAP and GF2 programs, including many of the programs being merit-based (as opposed to 1st come/1st served), with specific intake periods staged throughout the year. Check each program for specifics.

In Alberta, CAP will deliver programs developed in consultation with stakeholders, and is organized under five themes: Environmental Sustainability and Climate Change; Products, Market Growth and Diversification; Science and Research; Risk Management; and Public Trust.

If you had subscribed to receive updates from the GF2 website, you will have to re-subscribe for updates from CAP. Click on the ORANGE button in the upper right, to subscribe.

www.cap.alberta.ca



Good Timber

The tree that never had to fight
For sun and sky and air and light,
But stood out in the open plain
And always got its share of rain,
Never became a forest king
But lived and died a scrubby thing.

The man who never had to toil
To gain and farm his patch of soil,
Who never had to win his share
Of sun and sky and light and air,
Never became a manly man
But lived and died as he began.

Good timber does not grow with ease:
The stronger wind, the stronger trees;
The further sky, the greater length;
The more the storm, the more the strength.
By sun and cold, by rain and snow,
In trees and men good timbers grow.

Where thickest lies the forest growth,
We find the patriarchs of both.
And they hold counsel with the stars
Whose broken branches show the scars
Of many winds and much of strife.
This is the common law of life.

Douglas Malloch

Q&A

Q: What new piece of equipment did you invest in the past 2 years? Why did you choose to invest in that equipment?

A: A mist sprayer, because we could not spray our corn; this new one is boomless

A: Bought a few pieces of equipment over the last 2 years. We'll pick our New Tec bagger/weigher for this question. We bought it to make better time & being more efficient at bagging a variety of crops. All boils down to saving time/labour = saving/making money. Hate this system of now having to monitor every second of your labour force because with the new changes our cost of labour is now an unbelievably HUGE deal.

A: Hoss 2-Wheel Hoe with attachments. We chose this since it was relatively low cost but a huge time saver in the garden.

A: Nothing, still using the old stuff.

A: Straw remover is the only piece I have bought in the past 2 year because I thought it would be a more efficient way to remove the straw from my strawberries. I sold it again as it didn't work for us.

A: Table Saw - I build beehives so purchasing a table saw makes straightforward sense, though, having the saw has allowed me to build my own propagation boxes for my backyard tree nursery.

A: A bedding plant transplanter, to save on payroll with the increase to minimum wage have to look at cost savings through mechanization.

A: Rotary tiller for weed control.

A: A refractometer or Brix Meter. It is a very good measure of plant health and quality

A: Between the row cultivator. We wanted to reduce our labour costs, and use of herbicide.

A: Bought an 8 wheel tractor to re-break reclaimed farmland (just received) and a skidsteer attachment tree spade to move, manage and market indigenous and introduced trees and shrubs on the farm. Also a mulcher, to provide mulch for resale and for use on the farm.

Next Month's ? → [What benefits have you observed from having a crop rotation?](#)

MENTAL SNACKTIME – Investment

- "An investment in knowledge pays the best interest." – Benjamin Franklin
- "Education is not only a ladder of opportunity, but it is also an investment in our future." – Ed Markey
- "Without investment there will not be growth, and without growth there will not be employment." – Muhtar Kent
- "Goodness is the only investment that never fails." – Henry David Thoreau
- "One can make no better investment than the cultivation of a taste for the beautiful, for it will bring rainbow hues and enduring joys to the whole life. It will not only greatly increase one's capacity for happiness, but also one's efficiency." – Orison Swett Marden
- "Friend, there's no greater investment in life than in being a people builder. Relationships are more important than our accomplishments." – Joel Osteen
- "The more you rely/trust and believe in your team and the bigger the investment you make in getting them to their greatness, the larger will be the commitment, engagement, and outright devotion they have when it comes to you." – Robin S. Sharma

Alberta Direct Market Average Berry & Vegetable Prices – 2017 / 2018

A number of farms contributed their pricing information, with a wide range in size, diversity and operational focus. As well, prices reported on producer websites were added into the pricing dataset, if they did not represent duplication.

Most prices are reported per pound (for fruit and most vegetables), however many fruit farms charge on a volume basis (often 4L pail or smaller containers for certain fruit e.g. raspberries) or on a per unit basis (for a number of vegetable crops – e.g. per head, per bag, per bunch). For the purposes of comparison, the price per pound was calculated assuming 5 pounds per pail for all fruit; however, the actual weight of fruit per volume can vary. In converting prices to a “per pound” basis, it was assumed that 1 pint is equal to 0.625 pounds. The price per pound varied according to the container size, with some producers offering a range of container sizes for some pre-picked fruit. In this case, an **average** price was generated to use in comparisons with other farms. In cases of vegetable pricing, producers reporting a price per pound for a product were compared with producers reporting similarly, whereas producers reporting in a price per unit were compared with other similar reported data. Data was not compared between reported weight and volume datasets. Where possible, the u-pick and the pre-pick (pre-picked on-farm sales and/or p-p farmer’s market sales, etc.) prices are reported.

Many producers offer a volume discount (sometimes with several different prices for different volumes) or include a price adjustment for customers bringing pails/containers or charge a fee for pails (either built into the price or charged on top). The most common charge for a 4L pail was \$1-2. Some producers also make some price adjustments for early or late crops, depending on the crop, or things like baby or mature crops (e.g. carrots or potatoes)

Not all of the data contributed could be reported, as there was insufficient data to create a quality range &/or average. The number of data points comprising a dataset is included (e.g. n=x). If three or more data points were available, both a range and an average were reported. The higher the N-value, the stronger the data set. While the prices reported represent a range, there may be significant variation within the range. As a result, the median value was also included (for the fruit crops only), which represents the middle value of the dataset. Producers should consider their individual, specific costs of production, as well as their customers and markets when setting their prices. **Use the prices as a guide only**, and do not make adjustments to price, simply because you are lower than the average. In a number of areas, prices appear to be reaching the limit of what the market will bear, for the time being.

For the 2018 season, a number of producers are considering price increases to account for increased costs of production (most often labour was cited, however other costs like taxes, etc. were considered). A number of producers are offering a range of prices and offerings, such as different volumes, fresh/frozen, washed/unwashed, delivered/pick up, etc., depending on the product.

Fruit Prices

Strawberries

Marketing Generalities	Strawberries were often sold on a U-pick basis; however producers are also selling pre-picked berries at the farmers’ markets or on-farm. Volume of container was typically 4L pail/basket; however more, smaller container options are appearing (mainly for pre-picked product).								
	U-pick (n=13)			Pre-Pick (n=11)			Pre-Pick FM (n=6)		
	Range (price per pound)	Average (price per pound)	Median (price per pound)	Range (price per pound)	Average (price per pound)	Median (price per pound)	Range (price per pound)	Average (price per pound)	Median (price per pound)
	\$2.80 - \$8.00	\$3.87	\$3.35	\$4.00 - \$5.99	\$4.75	\$4.75	\$4.56 - \$6.50	\$5.76	\$6.00
Comments	There did not tend to be a huge difference in price between pre-picked product that was sold on-farm and Farmers’ market product.								

Raspberries

Marketing Generalities	Raspberries were most often U-picked, with some pre-picked (farm gate / farmer’s market) sales. A number of farms did not pre-pick raspberries.					
	U-pick (n=12)			Pre-Pick (n=5)		
	Range (price per pound)	Average (price per pound)	Median (price per pound)	Range (price per pound)	Average (price per pound)	Median (price per pound)
	\$2.60 – \$5.56	\$3.96	\$3.80	Too few reported		
Comments	Prices per pound varied with container size. The labour of picking raspberries for sale can be significant.					

Saskatoon Berries						
Marketing Generalities	Saskatoon berries were often sold U-picked, however many farms offer pre-picked fruit. Pre-pick prices most often were more than u-pick prices, depending on the operation and how they were packaged. It was not always reported whether pre-picked sales were fresh or frozen, although it can be assumed that immediate sales were fresh, with later sales certainly frozen. Prices varied with different volumes of product sold. Value added product was not included, but would feature prominently in most operations.					
	U-pick (n=11)			Pre-Pick (n=6)		
	Range (price per pound)	Average (price per pound)	Median (price per pound)	Range (price per pound)	Average (price per pound)	Median (price per pound)
	\$2.40 - \$5.00	\$3.18	\$3.00	\$3.75 - \$5.2	\$4.48	\$4.45
Comments	-					
Other Fruit						
Insufficient data was received for other fruit, such as sour cherries, haskap, chokecherries, apples, black currants, and rhubarb.						

Vegetable Prices

Beans	U-pick (n=3)		Pre-Pick (n=7)	
	Range (price per pound)	Average (price per pound)	Range (price per pound)	Average (price per pound)
	\$2.00 - \$4.00	\$2.77	\$2.80 - \$7.00	\$5.35
Comments	Prices did not seem to vary between colour or type of bean sold.			
Beets	U-pick (n=3)		Pre-Pick (n=8)	
	Range (price per pound)	Average (price per pound)	Range (price per pound)	Average (price per pound)
	\$1.5 - \$2.50	\$2.17	\$2.00 - \$3.50	\$2.55
Comments	-			
Broccoli	Pre-pick (per pound) (n=3)		Pre-Pick (per head) (n=3)	
	Range (price per pound)	Average (price per pound)	Range (price per unit)	Average (price per unit)
	\$1.50 - \$5.00	\$3.51	\$2.00 - \$4.00	\$3.00
Comments	-			
Brussels Sprouts	U-pick		Pre-Pick (n=3)	
	Range (price per pound)	Average (price per pound)	Range (price per unit)	Average (price per unit)
	Too few reports		\$2.00 - \$6.00	\$4.33
Comments	-			
Cabbage	U-pick		Pre-Pick (n=5)	
	Range (price per pound)	Average (price per pound)	Range (price per pound)	Average (price per pound)
	Too few reports		\$0.40 - \$1.00	\$0.69
Comments	-			

Carrots	U-pick (n=4)		Pre-Pick (n=17)	
	Range (price per pound)	Average (price per pound)	Range (price per pound)	Average (price per pound)
	\$1.75 - \$2.50	\$2.06	\$1.20 - \$6.00	\$3.00
Comments	Some price variation depending on time of year, product size (higher price for smaller) and package volume.			
Cauliflower	U-pick (n=4)		Pre-Pick (n=5)	
	Range (price per unit)	Average (price per unit)	Range (price per unit)	Average (price per unit)
	\$3.00 - \$4.00	\$3.25	\$3.00 - \$5.00	\$3.80
Comments	-			
Celery	U-pick (n=3)		Pre-Pick (n=3)	
	Range (price per unit)	Average (price per unit)	Range (price per unit)	Average (price per unit)
	\$2.50 - \$3.00	\$2.83	\$3.00 - \$4.00	\$3.50
Comments	-			
Corn, sweet	U-pick		Pre-Pick (n=6)	
	Range (price per dozen)	Average (price per dozen)	Range (price per dozen)	Average (price per dozen)
	Too few reported	-	\$8.50 - \$12.00	\$11.42
Comments	-			

Cucumber, Pickling	U-pick		Pre-Pick (n=9)	
	Range (price per pound)	Average (price per pound)	Range (price per pound)	Average (price per pound)
	Too few reported		\$2.00 - \$3.50	\$2.79
Comments	-			
Cucumber, slicing	U-pick		Pre-Pick (n=4)	
	Range (price per unit)	Average (price per unit)	Range (price per unit)	Average (price per unit)
	Too few reported		\$1.00 - \$3.00	\$1.80
Comments	-			
Garlic (head/bulb)	U-pick		Pre-Pick (n=4)	
	Range (price per unit)	Average (price per unit)	Range (price per unit)	Average (price per unit)
	Too few reported		\$2.99 - \$4.00	\$3.58
Comments	-			
Greens, mixed	U-pick		Pre-Pick (n=3)	
	Range (price per unit)	Average (price per unit)	Range (price per unit)	Average (price per unit)
	Too few reported		\$2.00 - \$3.50	\$3.00
Comments	-			
Herbs, misc.	U-pick		Pre-Pick (n=3)	
	Range (price per unit)	Average (price per unit)	Range (price per unit)	Average (price per unit)
	Too few reported		\$2.00 - \$3.00	\$2.40
Comments	-			

Lettuce, bagged	U-pick (n=4)		Pre-Pick (n=6)	
	Range (price per unit)	Average (price per unit)	Range (price per unit)	Average (price per unit)
	\$2.00 - \$3.00	\$2.50	\$2.50 - \$5.00	\$3.50
Comments	-			
Lettuce, Romaine	U-pick		Pre-Pick (n=4)	
	Range (price per unit)	Average (price per unit)	Range (price per unit)	Average (price per unit)
	Too few reported		\$3.00 - \$5.00	\$3.63
Comments	-			
Onions	Onions, Storage - Pre-Pick (n=6)		Onions, Sweet, Spanish - Pre-Pick (n=3)	
	Range (price per pound)	Average (price per pound)	Range (price per pound)	Average (price per pound)
	\$1.00 - \$2.50	\$2.04	\$1.00 - \$2.99	\$2.16
Comments	-			
Onions, Green	U-pick		Pre-Pick (n=8)	
	Range (price per unit)	Average (price per unit)	Average (price per bunch)	Average (price per bunch)
	Too few reported		\$1.90 - \$5.00	\$2.86
Comments	-			
Parsnips	U-pick		Pre-Pick (n=6)	
	Range (price per pound)	Average (price per pound)	Range (price per pound)	Average (price per pound)
	Too few reported		\$2.50 - \$7.00	\$4.31
Comments	-			

Peas	U-pick (n=3)		Pre-Pick (n=5)	
	Range (price per pound)	Average (price per pound)	Range (price per pound)	Average (price per pound)
	\$2.00 - \$4.00	\$2.75	\$2.00 - \$7.50	\$5.42
Comments	-			
Potatoes, mature	U-pick (n=3)		Pre-Pick (n=6)	
	Range (price per pound)	Average (price per pound)	Range (price per pound)	Average (price per pound)
	\$0.80 - \$2.00	\$1.43	\$0.80 - \$2.00	\$1.48
Comments	-			
Potatoes, baby	U-pick (n=3)		Pre-Pick (n=9)	
	Range (price per pound)	Average (price per pound)	Range (price per pound)	Average (price per pound)
	\$1.75 - \$2.00	\$1.92	\$2.00 - \$3.00	\$2.72
Comments	-			
Pumpkins	U-pick (n=4)		Pre-Pick (n=3)	
	Range (price per unit)	Average (price per unit)	Range (price per unit)	Average (price per unit)
	\$1.25 - \$25.0	\$7.69	\$1.5 - \$3.00	\$2.42
Comments	Price varies widely with size.			

Radish, bag/bunch	U-pick		Pre-Pick (n=3)	
	Range (price per unit)	Average (price per unit)	Range (price per unit)	Average (price per unit)
	Too few reported		\$2.00 - \$2.25	\$2.08
Comments	-			
Rutabaga	U-pick		Pre-Pick (n=5)	
	Range (price per pound)	Range (price per pound)	Range (price per unit)	Average (price per unit)
	Too few reported		\$0.50 - \$1.50	\$1.15
Comments	-			
Spinach	U-pick		Pre-Pick (n=5)	
	Range (price per unit)	Average (price per unit)	Range (price per pound)	Average (price per pound)
	Too few reported		\$3.00 - \$9.20	\$6.14
Comments	Weight of product (packaged) varied widely			
Squash	U-pick		Pre-Pick (n=4)	
	Range (price per unit)	Average (price per unit)	Range (price per unit)	Average (price per unit)
	Too few reported		\$2.75 - \$4.00	\$3.19
Comments	Range of different types of squash grown – they did not appear to be priced differently based on type			
Swish Chard	U-pick (n=3)		Pre-Pick (n=8)	
	Range (price per unit)	Average (price per unit)	Range (price per unit)	Average (price per unit)
	\$2.00 - \$5.00	\$3.00	\$2.00 - \$ 5.00	\$3.38
Comments	-			
Zucchini	U-pick		Pre-Pick (n=8)	
	Range (price per pound)	Average (price per pound)	Range (price per unit)	Average (price per unit)
	Too few reported	-	\$1.00 - \$3.00	\$1.68
Comments	-			

2018 Growing Season – Prices Changes / Adjustments

For the 2018 growing season, many producers are increasing their prices slightly, typically due to factors such as increased input costs, labour costs, taxes, etc. Price changes for some producers are as much as 10-20 percent, however not all producers are making changes at this time. Similar to previous years, price increases (or lack of increase) were scattered across the province and varied considerably. Some producers shift prices throughout the growing season, as influenced by supply, demand and/or rarity of a particular product, particularly in reference to early harvests.

Producers continue to vary in how they charge for fruit, with many charging per pound, but a fair number charging a flat rate for a fixed container (volume) size, typically small volume containers (e.g. pint). Price per pound was more common in the vegetables; however it depended very much on the type of vegetable. U-pick was less common than pre-pick in the data reported again this year. Per unit pricing of vegetables was likely due to simplicity of marketing and packaging, rather than having to deal with wide ranges of weights. It was more common for producers to report charges for pails / containers or to list some other sort of fee for u-pick situations. It was mentioned regularly that a charge for containers would be added for u-pickers (noted on numerous websites). Some of the u-pick operations priced based on the number of pails picked/purchased and vegetable sale prices were usually dependant on the quantity purchased.

The number of Community Shared Agriculture (CSA) operations continues to increase, with many direct market operations offering this as an option in addition to their other direct market delivery channels (e.g. u-pick, FM). In many cases, this is the only option that is provided.

It is evident that great care and attention must be given to input costs, cost of labour, transportation and to what prices the market will bear, related to other producers, retail pricing, etc.

Tarnished Plant Bug (a.k.a. Lygus Bug)

Lygus lineolaris (& other species)

Crops Affected: Wide host range – many fruit, vegetable, field and forage crops and weed species

Life Cycle:

- One of the most serious & widespread of strawberry pests
- Sucking insects that pierce flower buds, blossoms, and developing fruits and plant parts
- Adult has distinctive triangle or "V" mark on back; strong fliers
- Overwinter as adults in leaf litter or under debris and migrate into fields in spring or fall to feed on weeds and crops
- Lay eggs in spring in plant tissues
- Young (nymph) resemble aphids without cornicles (tail pipes) and move more quickly; hatch & feed on developing blossoms & fruit
 - Nymphs feed through May and June, maturing in late June to early July
 - Most of damage results from nymphal feeding
- Adults feed on developing fruit
 - Leave with fruiting complete in June or July (strawberries)
 - May have 2-3 generations per year (depending on season length)
- Due to the fact that day neutral strawberries are flowering when TPB numbers are high, damage potential is higher

Symptoms:

- Presence of insect life stages
 - Range of damage to vegetables: reduced fruit set in bean, pepper & eggplant; blemishes on tomato fruit; necrotic spots on florets & curd of broccoli, cauliflower and heads of lettuce; dead leaves on potatoes; foliar injury on cucumbers; gummosis on zucchini
 - Raspberries (most damage occurs after petal fall)
 - Feeding on flower blossoms & developing fruit = crumbly berry
 - Reduced plant vigour
 - Saskatoon berries
 - Yellow, aborting flower buds; droplets of brownish liquid may exude from newly pierced buds
 - Fruit deformation
 - Strawberries
 - Feeding by nymphs – Nubbins or deformed fruit / Apical seediness
 - Adult feeding – CATFACING
- NOTE: Catfacing can be caused by other factors, producing identical symptoms**
- Feeding also reduces plant vigour due to removal of plant nutrients

Monitoring:

- Be aware of neighbouring crops that might be a host or that might release a large number of adults when cut (e.g. alfalfa or canola)
- Crop should be monitored for the number of nymphs in flower blossoms. Sweep nets can determine adult numbers
 - Scout the field perimeter in new fields or entire established fields
 - Start monitoring in overwintered fields when they are uncovered onward
- Blossoms may be sampled from across the field, counting the number of nymphs and adults present
 - Survey the field from pre-bloom until green fruit stage (strawberries)
 - Tap plants or shake fruit clusters over a non-metallic pie plate
 - Count the number of nymphs per 100 clusters
 - Strawberry Economic threshold = 1 nymph or adult per 8 blossoms

Management:

- Careful monitoring of TPB populations
- Remove weeds (especially leguminous species)
- Ensure alternate host crops are not planted too close (e.g. alfalfa)
- Make careful and timely chemical control applications
 - Controls are available with application timing restrictions
 - Chemical control is challenging due to continuous flowering and fruiting of day neutral strawberries
 - Only products with short Pre-Harvest Intervals (PHI) may be used
 - Do not apply products when bees are actively working

[Tarnished Plant Bug – A Major Pest of Strawberry](#) – OMAFRA article



Tarnished Plant Bug damage



Tarnished Plant Bug damage - catfacing

[Tarnished Plant Bug – Video](#)

Fireblight

Causal Organism(s): *Erwinia amylovora*

Crops Affected: Wide host range – all plants with the Rosaceae (apples, crabapple, pears, mountain ash, cherries, Saskatoon berries, hawthorn, cotoneaster, etc.), caneberries (raspberry, etc.)

Disease Cycle:

- Bacterial pathogen
- Overwinters on the edges of branch cankers
- Disseminated by crawling or flying insects, including pollinators as they move from blossom to blossom
- Also spread through rain splash, wind, and physical transfer by pruning or other tools
- Bacteria enter through natural plant openings (within flowers, vegetative growing points, etc.) or through wounds (mechanical, insect, etc.)
- The pathogen multiplies rapidly, depending on weather, however it may remain in an epiphytic (not attacking) state for a period of time before starting to infect and cause typical symptoms

Symptoms:

- Plant parts and foliage develops a scorched (burned) appearance
- Sudden wilting & browning of blossoms
- Infected plant parts may become purplish black and water-soaked lesions may develop
- Wilting of new shoots in characteristic “Shepherd’s Crook”
- Raspberry canes may be girdled
- Young fruit may turn brown or black
- Infected raspberries do not mature, become brown, dry up, become very hard and remain on pedicel
- Bacterial ooze may be seen during periods of high humidity
- There is a strain specific to raspberries that will not infect apples
 - apple strain will affect raspberries

Conditions Favouring Disease Development

- Presence of bacteria from overwintering cankers on diseased plant material
- Warm / moist / humid / rainy conditions favour infection
- Prolonged host flowering due to cool, wet conditions
- Succulent host tissue
- Damaged tissue can allow entry of pathogen

Management:

- Avoid succulent growth and injury to tissues
- Pruning can take place either during dormant season or when disease is observed in season
 - Prune out infected shoots 25-45 cm below the lowest point of infection (woody plants – e.g. apple, crab, pear, etc.)
 - Prune out infected raspberry canes
- Disinfect pruning equipment between cuts
- 2 biological products are registered for suppression of fire blight in Saskatoon berries, caneberries & non-bearing apples (nursery stock)
- There are essentially no chemical products registered for control of fire blight

Saskatoon berry orchard – heavily infected with Fireblight

Photo from Lloydminster area



Fireblight on Saskatoon berry – note – scorched tissues

Photo by Robert Spencer



Late blight Update (all crops)

Over the last several 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*. 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 2018, this disease continues to be a risk for all Solanaceous crops (potato/tomato family) grown in Alberta.

About the Disease

When the pathogen is present and weather conditions are favourable for disease development, commercial potato and market garden crops are at risk from Late blight, as are all other plantings of potatoes and tomatoes. There is also a risk of spread into greenhouse tomato operations. The risk of introduction comes from either infected transplant material (tomatoes or other host crops) or infected seed potato stock (either imported or carried over). During the season, if spore loads build up, there is a risk of introduction of the pathogen via wind-blown/storm carried transfer.

Late blight is a serious plant disease caused by the fungus-like microorganism, *Phytophthora infestans*, and is found in most potato and vegetable-growing areas of Canada, although historically it does not occur every year on the Prairies. Late blight is most damaging on tomatoes and potatoes, but may also affect eggplants, peppers, petunias and some related Solanaceous weeds, such as nightshade and wild tomato. Late blight is an aggressive disease that, if left unchecked, can cause significant and rapid crop losses in gardens, greenhouses, fields and in controlled environment storages, e.g. potato bins.

Symptoms & Disease Spread

Initial symptoms of Late blight are typically noted on older leaves, appearing as dark, water-soaked areas (lesions), sometimes with yellow edges, that move in from leaf tips/margins, becoming brown and brittle within a couple days. Late blight lesions are not contained by the leaf veins, as they are with another common foliar disease called early blight (caused by the fungus *Alternaria solani*). Lesions may also develop on plant stems and on potato tubers and tomato fruit. A small amount of sporulation (observed as white, fluffy growth on the edges of lesions) may be visible in some cases on the underside of affected leaves at the edge of lesions. Late blight develops most quickly in warm, wet/humid conditions and can spread very rapidly through plantings. Plants may be rapidly defoliated, die and yields can be significantly reduced.

Potato tubers may be infected by spores produced on the foliage which are subsequently washed into the soil. Infected tubers may have irregular, sunken lesions that are often first found around the eyes. Tomato fruit and potato tuber rot can penetrate into skin of the fruit or tubers, causing rot and discolouration of the internal tissues. The rot often has a reddish-brown colour. Late blight can spread from diseased

to healthy fruit and tubers in stored tomatoes, in potato piles in storage and on seed potato pieces.

On the Prairies, Late blight does not form an overwintering spore, as this requires two different mating types, one of which is not present. Rather, the pathogen overwinters on living tissues. The disease will only survive without a living host for 5-7 days. The disease is carried forward from one season to another on infected seed potatoes, cull piles, volunteer potatoes or living host plants (e.g. tomato transplants).

In-season spread is by spores (sporangia) produced on infected tissues (infected transplants, volunteers, weeds and diseased crop debris). Spores spread within the fields by rain or water splash. Sporangia may also move short distances in soil water and spores may move between fields on equipment. Spores can move considerable distances on the wind

Management

The priority for Late blight management should centre around efforts to reduce the introduction of the disease into plantings, either by avoiding overwinter survival or by monitoring for infected plant materials that might be brought in from other areas. Leaving potato cull piles or diseased materials in the open can lead to infection of healthy plants. Volunteer potato plants and Solanaceous weeds, such as nightshade and wild tomato, should be controlled. The use of LB-resistant tomato varieties in market and home gardens may assist in reducing disease levels.

Late blight can be managed in commercial crops using protective fungicidal sprays (with rotating chemistries), applied at regular intervals when conditions favour disease development. The use of cultural practices, such as drip or furrow irrigation and the adjustment of plant stand density, can be effective in reducing the risk or rate of disease development in alternative crops or smaller stands.

Infected plant material should be disposed of as soon as possible after detection, either by burying or freezing. If infected crop debris is composted, it should be covered with a tarp or soil until it has frozen to minimize the risk of spore survival and distribution. Killing potato tops can help to minimize tuber infection, as this encourages tuber skin set and stops top growth. Tubers can be harvested a couple of weeks after the tops are killed. Tubers should be heavily graded and culled before storage in an attempt to prevent entry of the disease into storage.

Robert Spencer

Commercial Horticulture Specialist
Ag-Info Centre – 310-FARM (3276)

Dr. Mike Harding

Plant Pathology Research Scientist – CDC South
403-362-1338

Dr. Michele Konschuh

Potato Research Scientist – CDC South
403-362-1314

“Late blight is a community disease”

For more information on Late blight, see the following resource:

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

If you think that you might have Late blight, please contact 310-FARM (3276) for assistance with diagnosis and management

LATE BLIGHT OF POTATO & TOMATO

Lesions may have a yellow edge



Potato leaf lesions

In humid conditions, fluffy white growth may be visible on leaf undersides at lesion edges



Photo by Dr. K. Al-Mughrabi, Govt of NB



Photo by Dr. K. Al-Mughrabi, Govt of NB

Dark, water-soaked lesions (spot)

Lesions are not contained by leaf veins

Lesions become brown & brittle within a couple of days



Lesions on tomato leaves



Photo by Dr. K. Al-Mughrabi, Govt of NB

Plant foliage may die back rapidly

Disease develops rapidly under warm & wet/humid conditions

Lesions may also develop on stems, tomato fruit or potato tubers



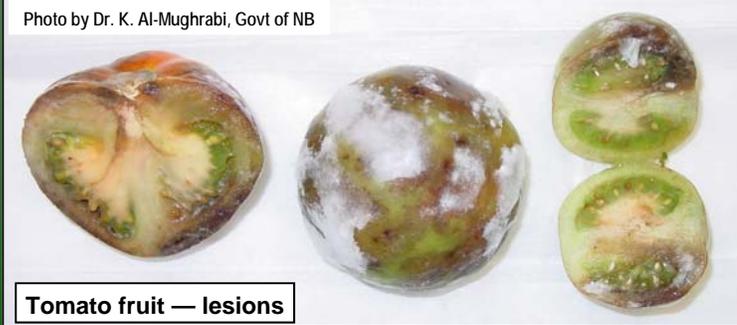
Potato foliage

Tomato fruit & potato tuber rot may have reddish-brown lesions

Disease may spread from diseased to healthy tomato fruit & potato tubers in storage & between potato seed pieces

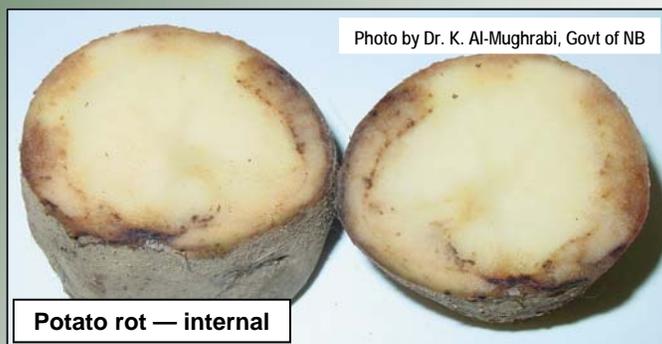
Rot can penetrate the skins of tomato fruit & tubers — causes rot & discoloration of the internal flesh

Photo by Dr. K. Al-Mughrabi, Govt of NB



Tomato fruit — lesions

Photo by Dr. K. Al-Mughrabi, Govt of NB



Potato rot — internal

Late blight in Greenhouse Crops

Over the last several 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 fungus-like microorganism called *Phytophthora infestans*. The excellent conditions for disease development, combined with the presence of the pathogen, has resulted in continuing 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. In recent years, a specific strain (US23) of Late blight, which is particularly virulent on tomatoes, has become more prevalent, increasing the risk for greenhouse tomato growers. In 2013, Late blight advanced across southern Alberta, coming close to greenhouse tomato areas. For 2018, this disease continues to be a risk for all Solanaceous crops (potato/tomato family) grown in Alberta.

Greenhouse Crops and Late blight

While most of the attention and focus is placed on field-grown crops, due to the size and scale of the industries that may be affected (e.g. commercial potato, market gardens, etc.), greenhouse producers of tomatoes or tomato transplants, as well as eggplants and petunias, should be concerned about their ability to potentially impact other industries or be adversely affected by Late blight.

Producers should monitor for Late blight in their crops, from the perspective of buyers, sellers and producers of plants. As buyers, producers are at risk of receiving infected plants from other regions, which may significantly affect their own production. As buyer/sellers, receiving infected plants creates the possibility of introducing diseased plants into areas where it could easily spread to other crop industries, which can start the disease cycle locally. As producers, if the disease is introduced in the province, there is the potential of having their crops infected as the season progresses, either affecting production or furthering the spread into other crops.

While potatoes and tomatoes are generally considered the primary crops that are affected by Late blight, crops like petunias, peppers and eggplants may also be infected and/or can spread disease to other, more common host crops (e.g. tomatoes), particularly if they are housed in the same greenhouse. Spread between multiple host crops can certainly occur in greenhouse situations.

It has been suggested that crops such as petunia are not likely to be entirely wiped out by Late blight, unless they are young seedlings (highly sensitive). However, older plants can serve as inoculum for the spread of disease within and out of a greenhouse environment.

Growers and sellers of greenhouse ornamentals and vegetable bedding plants might consider the production and/or sale of one or more of the limited number of Late Blight-resistant varieties, including *Mountain Magic*, *Defiant PHR*, *Mountain Merit*, and *Iron Lady*. These varieties may reduce the development of disease in home and market gardens.

What to Watch for in Greenhouse Crops

Scouting / monitoring can be done at the same time as plants are monitored for insect pests and other diseases.

Initial symptoms of Late blight are typically noted on older leaves, appearing as dark, water-soaked lesions, sometimes with yellow edges, that move in from leaf tips/margins, becoming brown and brittle within a couple days. Late blight lesions are not contained by the leaf veins. In crops such as petunias, lesions may not develop as rapidly and may resemble other foliar leaf diseases, depending on the stage of the crop at infection and the level of infection.

In high moisture/humidity situations, a small amount of sporulation (observed as white, fluffy growth on the edges of lesions) may be visible on the underside of affected leaves. Other diseases will likely form spores much more rapidly than the Late blight pathogen (e.g. *Botrytis cinerea*, the gray mold pathogen). Late blight develops most quickly in wet/humid conditions and can spread very rapidly through tomato plantings or very young petunia seedlings. Plants may be rapidly defoliated and die.

Specific strains of *Phytophthora* are more aggressive on tomatoes (US 23), and will often attack the fruit readily; therefore, producers should watch plants for both foliar and fruit symptoms. Infected fruit may have irregular, sunken lesions. Tomato fruit rot can penetrate into skin of the fruits, causing rot and discolouration of the internal tissues. The rot often has a reddish-brown colour.

Management Strategies

Careful monitoring of incoming, growing and outgoing plant material is one of the best strategies for managing Late blight within a greenhouse. Producers should consider separating different host plants as much as possible, particularly if there is a risk of disease on one of the crops. Consider culling poorer quality plants or carefully screening for potentially infected material.

Dispose of diseased material by burial, burning or freezing. Dying plant material can still transfer spores to living plants, continuing the disease cycle.

The Late blight pathogen thrives in warm, wet and/or high humidity conditions; therefore, careful ventilation can help to keep humidity at reasonable levels and can prevent condensation and prolonged periods of leaf wetness. Overhead watering will increase disease spread; this should be addressed if there is a risk that disease is present.

Protective applications of registered fungicides are appropriate in high risk situations; however, applications are not curative.

Late blight is a community disease. It will require effort on the part of all industries to return Alberta to a Late blight-free status. If you want to know more about Late blight or have questions or concerns, please call 310-FARM (3276) for assistance.

For more information on Late blight identification and management, see the Frequently Asked Questions document – [Late blight in Potatoes and Tomatoes](#)

LATE BLIGHT OF POTATO & TOMATO

Primary Hosts

- ◆ Potato
- ◆ Tomato



Secondary Hosts:

- ◆ Eggplant
- ◆ Pepper
- ◆ Petunia
- ◆ Solanaceous weeds
 - ◆ Nightshade
 - ◆ Wild tomato



Photo by Dr. K. Al-Mughrabi, Govt of NB

Potato leaf lesion



Lesions on tomato leaves

SYMPTOMS

- ◆ Dark, water-soaked lesions (spots)
- ◆ Lesions are not contained by leaf veins
- ◆ Lesions may have a yellow edge
- ◆ Lesions become brown & brittle within a couple of days
- ◆ Disease develops rapidly under warm & wet/humid conditions
- ◆ Plant foliage may die back rapidly
- ◆ Tomato fruit & potato tuber rot may have reddish-brown lesions
- ◆ Rot can penetrate the skins of tomato fruit & tubers — causes rot & discoloration of the internal flesh



Photo by Dr. K. Al-Mughrabi, Govt of NB

Tomato fruit — lesions



Infected tomato foliage



Potato rot — internal

HOW THE DISEASE SPREADS

- ◆ **ONLY** overwinters & survives on **LIVING** plant tissue (seed potatoes, volunteers, potato cull piles, living plants, etc.)
**NOTE: applies to Prairies
- ◆ Spreads by spores (sporangia) between plants in fields by rain or water splash or short distances in soil water
- ◆ Spores may be carried long distances (100+ km) on wind or in storm fronts
- ◆ Disease may spread from diseased to healthy tomato fruit & potato tubers in storage & between potato seed pieces

HOW TO PREVENT / MANAGE

- ◆ Avoid introducing the disease - only plant healthy potato tubers & tomato transplants
- ◆ Scout for infection early, regularly and thoroughly
- ◆ Rigorously cull out all infected or suspect material
- ◆ Do not leave infected plant material in the open – bag, bury or compost (covered) or freeze all infected material
- ◆ Top kill or remove tops of infected potatoes to reduce risk of spread to tubers

CERTIFIED SEED POTATOES = QUALITY CROP

(Information provided by Deb Hart, Potato Growers of Alberta)

1. If you are growing in excess of 5 acres, or packing and selling potatoes, you must be licenced by the Potato Growers of Alberta.
2. Under the Alberta Pest Act, Certified seed is the lowest class authorized for planting crops in Alberta. If you are found to be planting uncertified seed you could be receive a fine from the province or be asked to destroy your crop.
3. Source your seed early to prevent disappointment.
4. Build a relationship with the seed grower.
5. Ask for and make sure you receive the field inspection and post-harvest test results for the seed lot you are planting.
6. Make sure the area where you store the seed before planting, and after the crop is harvested, is clean and disinfected. Equipment used for planting and harvesting should be included.
7. Don't plant or harvest too early or late.
8. Scout and rogue your fields for pests, weeds and disease.
9. Grade potatoes going into storage to prevent issues later.

Have confidence you have a quality product to sell to your customers!

Contact Information:

Deb Hart
Seed Coordinator - Potato Growers of Alberta

Located at:

Crop Diversification Centre North
Alberta Agriculture and Forestry
17507 Fort Road
Edmonton, AB T5Y 6H3
Office: 780-415-2305
Email: deb@albertapotatoes.ca
www.albertapotatoes.ca

PrairieSaskatoon-QMOD

Manage Entomosporium Leaf and Berry Spot Disease Effectively and Predict Harvest Times

Protect your berry yields and predict harvest date with this disease model tool which has been extensively evaluated across the prairies.

This model is a useful tool to help predict the pathogen *E. mespili* (Leaf and Berry Spot Disease) which affects the majority of saskatoon crops and serve as an operations planning tool for producers across the prairies.

This program should help producers' bottom line and may also have environmental benefits as there is the potential for reduced fungicide applications. Customers should be more confident in the quality and consistency of saskatoon fruit.

Simply enter into the model:

- Daily min and max temperatures from budbreak until fruit harvest (or Aug.1)
- Rainfall events during flowering
- Various plant growth stages (bud break, 50% flowering, fruit harvest)

The model will generate your orchard spray schedule and predict harvest date. The first fungicide spray of Topas 250E or Mission 418EC or Jade occurs after the first rain event that occurs 4 days after flowering.

What do you need: 1) MIN/MAX Thermometer in your orchard
 2) Topas 250E or Mission 418EC or Jade fungicide
 3) Access to the internet.

For new users the program is accessed through: <http://prairiesaskatoon.com/signup>
**FOR 2011 (and later) MODEL USERS: If you had an account before try using the same login/
password, and visit www.prairiesaskatoon.com, or sign-up again.**

For more information please contact your respective provincial horticulture specialist:

Alberta: Robert.Spencer@gov.ab.ca Saskatchewan: Forrest.Scharf@agr.gov.sk.ca

Manitoba: Anthony.Mintenko@gov.mb.ca

www.agriculture.alberta.ca/horticulture