



Merry Christmas and a Happy New Year to each and every one of you. We hope that you enjoyed some time with friends and family and are refreshed and ready for another exciting year. With a new year comes another edition of Hort Snacks. Enjoy.

First of all, thank you to all those of you that took time to participate and contribute to the Hort Snacks survey that was carried out over November and December. We appreciate the feedback and the input and will try and implement any and all improvements and suggestions in the coming months. It'll take a few days to comb through the responses, but all input is helpful.

In this edition of Hort Snacks, you'll find a refreshed article from the archives, a wide range of tidbits of information, as well as a brief, year in review article. Please note the tentative agenda for the perennial Alberta Farm Fresh School 2016, which will have a slightly different format this year, as it is being held jointly with Organic Alberta.

We look forward to seeing and hearing from you this year. There is a lot on the docket for this year, both in concept and already planned, so watch out. And, as always, any and all feedback, suggestions, ideas and comments are welcome, so feel free to send it in.

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**FEATURED WEBSITE**

**Vegetable Grafting Information Portal**  
<http://www.vegetablegrafting.org/>

**In this edition of Hort Snacks**

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## THINGS TO DO / THINGS TO THINK ABOUT THIS MONTH

- Register for relevant winter workshops
- Consider specific training courses for both yourself AND staff (e.g. First Aid, Advertising, Electronic bookkeeping, Record keeping, etc.) – Book it
- Are all of your licenses or certificates up to date?
- Review your insurance coverage. Do you have sufficient for your activities? Are all the things that happen on your farm covered? Has anything changed?
- Review your project to-do / wish list from the end of last season – What are some of the things that you identified?
- Start thinking about and planning your field layouts for the coming season. Does your current set up work for any new crops? Do you have sufficient space for everything you have planned (headlands, activities, parking, etc.)? Consider field orientation, irrigation systems, shelterbelts and traffic movement (foot, equipment, vehicles, etc.).
- Have you ordered the plant material that you will need for the next season? Planning and ordering in advance can save a lot of headaches in the spring.
- Are you ordering transplants? Growing your own? Cleaning up the greenhouse might also be in order.
- Update / tidy up / repaint sales sheds and signs

## 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.

## MENTAL SNACKTIME - Options

“Panic causes tunnel vision. Calm acceptance of danger allows us to more easily assess the situation and see the options.” – Simon Sinek

“In the game of life, less diversity means fewer options for change. Wild or domesticated, panda or pea, adaptation is the requirement for survival.” – Cary Fowler

“If children have the ability to ignore all odds and percentages, then maybe we can all learn from them. When you think about it, what other choice is there but to hope? We have two options, medically and emotionally: give up, or Fight Like Hell.” – Lance Armstrong

“Life is not a matter of chance...it is a matter of choice.” – Ka

“If you are faced with a mountain, you have several options. You can climb it and cross to the other side. You can go around it. You can dig under it. You can fly over it. You can blow it up. You can ignore it and pretend it's not there. You can turn around and go back the way you came. Or you can stay on the mountain and make it your home.” – Vera Nazarian

## In the News / Articles Worth Looking At

- [2015 Is The Year Of The Mobile Web -- Is Your Website Ready?](#) – Forbes Magazine article
- [Uniquely shaped edible ornamentals to conquer the world](#) – HortiDaily article
- [Is Lettuce Worse Than Bacon For The Planet? Well, It's More Complicated Than That](#) – Huffington Post article
- [Develop New Habits To Change Your Greenhouse Business](#) – Greenhouse Grower article
- [Imperfect Produce Scores A Second Chance](#) – Growing Produce article
- [NASA wants to grow potatoes on Mars](#) – SpudSmart article
- [Robotic Automation Meets Agriculture](#) – Engineering.com article
- [Top 5 Storage Diseases](#) – SpudSmart article

# Q&A

Q: What sorts of things do you do to stay connected with your customer during the off-season?

A: Nothing!

A: Set up your social media schedule in the winter. Be in your customer's face, so they will come see you.

Next Month's ? → [How do you care for your employees? What makes you a great employer?](#)

## Upcoming Conferences / Workshops

### January 2016

- North American Strawberry Growers Association (NASGA) 2016 Berry Conference  
Jan 7-9, 2016 – Savannah International Trade & Convention Center, Savannah, Georgia  
[www.nasga.org](http://www.nasga.org)
- Explore Local Webinar – The Bumble Bees Way  
Jan 12, 2016
- Hort Snacks @ Night – Human Resources  
Jan 12, 20, 27, 2016 – Okotoks/Grande Prairie/Wetaskiwin  
To register – 1-800-387-6030 – See [Coming Events](#)
- Pricing for Wholesale & Retail  
Jan 12, 14, 2016 – Leduc / Airdrie, AB  
To register – 1-800-387-6030 – See [Coming Events](#)
- Potato Expo 2016  
Jan 12-14, 2016 – Mirage Hotel & Casino – Las Vegas, Nevada, USA  
[www.potato-expo.com](http://www.potato-expo.com)
- Saskatchewan Fruit Growers Association (SFGA) 27<sup>th</sup> Annual Conference  
Jan 15-16, 2016 – Saskatoon Inn, Saskatoon, SK  
[www.saskfruit.com](http://www.saskfruit.com)
- Hort Snacks-to-Go Webinar – Customer Service  
Jan 18, 2016
- Agronomy Update 2016  
Jan 19-20, 2016 – Sheraton Red Deer – Red Deer, AB  
Ropin' the Web ([www.agriculture.alberta.ca](http://www.agriculture.alberta.ca)) – Coming Events
- Irrigated Crop Production Update 2016  
Jan 19-20, 2016 – Lethbridge Lodge – Lethbridge, AB  
Ropin' the Web ([www.agriculture.alberta.ca](http://www.agriculture.alberta.ca)) – Coming Events
- Water & Fertility Workshop for Greenhouses  
Jan 20, 2016 – CDC North – Edmonton, AB  
Contact the AGGA ([www.agga.ca](http://www.agga.ca)) for detailed and to register  
Register by Jan 15, 2016
- Marketing Made Easy workshop  
Jan 20, 2016 – Fort Saskatchewan, AB  
To register – 1-800-387-6030 – See [Coming Events](#)
- Farm Direct Marketing Forum  
Jan 21, 2016 – Stony Plain, AB
- Scotia Horticultural Congress 2016– “Partnering for Farm Success”  
Jan 25-26, 2016 – Old Orchard Inn Convention Centre – Greenwich, NS - <http://www.horticulturens.ca/scotia-horticultural-congress/>
- Manitoba Potato Production Days  
Jan 26-28, 2016 – Keystone Centre – Brandon, MB  
[www.mbpotatodays.ca](http://www.mbpotatodays.ca)
- 47<sup>th</sup> Annual Northwest Agricultural Show  
Jan 26-28, 2016 – Portland Expo Centre – Portland, Oregon, USA  
[www.nwagshow.com](http://www.nwagshow.com)
- FarmTech 2016  
Jan 26-28, 2016 – Northlands Expo Centre – Edmonton, AB  
[www.farmtechconference.com](http://www.farmtechconference.com)
- 18<sup>th</sup> Annual Pacific Agricultural Show  
Jan 28-30, 2016 – Tradex Exhibition Centre – Abbotsford, BC  
[www.agricultureshow.net](http://www.agricultureshow.net)
- 35<sup>th</sup> Annual Guelph Organic Conference & Expo  
Jan 28-31, 2016 – Guelph University Centre, Guelph, ON  
[www.guelphorganicconf.ca](http://www.guelphorganicconf.ca)

## Upcoming Conferences / Workshops

### February 2016

- 31<sup>st</sup> Annual North American Farm Direct Marketing Association (NAFDMA) Convention  
Jan 31 – Feb 6, 2016 – Abbotsford, BC  
<http://www.farmersinspired.com/Convention/>
- Social Media Bootcamp  
Feb 2, 4, 2016 – Lethbridge / Grande Prairie, AB  
To register – 1-800-387-6030 – See [Coming Events](#)
- Explore Local Webinar – Track & Measure for Improved Performance in Your Market  
Feb 9, 2016
- Getting Into Farmers Markets  
Feb 10, 2016 – Peace River, AB  
To register – 1-800-387-6030 – See [Coming Events](#)
- Ontario Berry Growers Association Annual Meeting  
Feb 16, 2016 – Niagara Falls, ON  
[www.ontarioberries.com](http://www.ontarioberries.com)
- Ontario Fruit & Vegetable Convention  
Feb 17-18, 2016 – Scotiabank Convention Centre – Niagara Falls, ON  
[www.ofvc.ca](http://www.ofvc.ca)
- Hort Snacks-to-Go Webinar – On-Farm Field Trials  
Feb 22, 2016
- Alberta Farm Fresh School 2016  
Feb 25-26, 2016 – Pomeroy Inn & Suites – Olds, AB  
[www.albertafarmfresh.com](http://www.albertafarmfresh.com)
- International Potato Technology Expo  
Feb 26-27, 2016 – Eastlink Centre - Charlottetown, PEI  
[www.potatoexpo.ca](http://www.potatoexpo.ca)

### March 2016

- Potato Health Management for Fresh Potatoes  
Mar 1, 2, 3, 2016 – Coast Lethbridge / Lacombe Memorial Centre / Executive Royal Hotel (Leduc) TBD  
Call 1-800-387-6030 to register
- 2016 Manitoba Direct Farm Marketing Conference  
Mar 11-12, 2016 – Portage-la-Prairie, MB  
[www.directfarmmarketing.com](http://www.directfarmmarketing.com)
- 94<sup>rd</sup> Canadian Horticultural Council (CHC) Annual Meeting – “Growing a Better Tomorrow”  
Mar 8-10, 2016 – The Westin Ottawa – Ottawa, ON  
[www.hortcouncil.ca/](http://www.hortcouncil.ca/)
- Canada Blooms 2015  
Mar 11-20, 2016 – Direct Energy Centre – Toronto, ON  
[www.canadablooms.com](http://www.canadablooms.com)
- Hort Snacks to Go Webinar – Encouraging Beneficial Insects  
Mar 21, 2016

### SAVE THE DATE

The [Alberta Farm Fresh School](#) is set for February 25-26, 2016 at the Pomeroy Inn & Suites in Olds, AB (on Olds College campus)

This will be a joint conference of AFFPA and Organic Alberta, with complimentary session over the entire conference. It is jam-packed with interesting sessions, with lots of people to meet and interact with.

Watch [www.albertafarmfresh.com](http://www.albertafarmfresh.com) for details.

## Alberta Farm Fresh School 2016 – Tentative Agenda

Thursday, February 25, 2016 – Day 1				BUSINESS / CONVERSATION ROOM	TRADESHOW	NEW VENTURE CONSULTATIONS
STREAM 1	STREAM 2	STREAM 3	STREAM 4 – On Campus			
8:00 – 8:45 am REGISTRATION		8:45 – 9:15 am ICE BREAKER ACTIVITY				
9:15 – 10 am PLENARY - How to Make a Small Farm Successful						
10 - 10:30 am – COFFEE BREAK & TRADE SHOW						
10:30 – 11:55 am						
Strawberry Production – Soup to Nuts	Packaging Options and Regulations	Pasture Pork	Co-design of sustainable farming systems	TBD		
12 noon – 1:30 pm – LUNCH & Annual General Meetings (AFFPA / OA)						
1:30 – 2:25 pm						
Strawberry production on plasticulture	Culinary Trends	EXTRA TIME FOR OA AGM		TBD		
2:30 – 3:25 pm						
Weed Control Options	The Skinny on Distribution	Meat Packaging – Cuts that appeal	Green Manures: Ask an Expert	TBD		
3:30 – 4:00 pm – COFFEE BREAK & TRADE SHOW						
4:00 – 4:55 pm						
Pest ID – Know your enemies	How to Make Your Farm Customer Friendly (HORT/MEAT)	Meat Regulations	Grain Buyers Panel	TBD		
5:00 – 5:30 pm						
PLENARY – Local Food – Where is it going?						

6:00 – 7:00 PM – Informal Mixer / Cash Bar / EVENING MEAL

7:00 – 7:30 PM – Awards Presentations - Alberta Farm Marketer of the Year, etc.

7:30+ PM – Informal Mixer / Social

Friday, February 26, 2016 – Day 2				BUSINESS / CONVERSATION ROOM	TRADESHOW	NEW VENTURE CONSULTATIONS
STREAM 1	STREAM 2	STREAM 3	STREAM 4 – On Campus			
8:00 – 8:30 am REGISTRATION		8:30 – 8:55 am PLENARY – TBD				
9:05 – 10 am						
Practical IPM	Rotational Crop Planning	Better housing and pasture systems for poultry (small flock and commercial)	Producer Panel – Crop Rotation Design	TBD		
10 - 10:30 am – COFFEE BREAK & TRADE SHOW						
10:30 – 11:55 am						
Newer Fruit Crops - Sour Cherry & Haskap/Blue Honeysuckle Production	Getting into Retail	Building the Next Generation of Farmers	Soil Health and Soil Biodiversity	TBD		
12 noon – 1:00 pm – LUNCH & TRADE SHOW / Farm Safety – Dean Dyck / Kenda Lubeck?						
1:00 – 1:55 pm						
Spotted Wing Drosophila (& Other New Threats)	Transitioning to Organics – HORT/MEAT	Taste and Marketing	Weed Management	TBD		
2:00 – 2:55 pm						
Basic to Fancy Post- Harvest Handling and Storage	Innovations (in Organics and other) – HORT/MEAT)	12 Acres Farm / 7K Ranch	Best Organic Management Practices	TBD		
3:00 – 3:30 pm – COFFEE BREAK & TRADE SHOW						
3:30 – 4:25 pm PLENARY – A great feel-good story – Fibreshed						

4:30 PM – Conference ends



## HortSnacks-to-Go: 2015/2016 Webinar Series



To register call Dustin Morton at  
403-742-7571 or email at  
[dustin.morton@gov.ab.ca](mailto:dustin.morton@gov.ab.ca)

### September 28 (3 PM MST) –

**Dustin Morton, Alberta Agriculture and Forestry**  
Dustin will be discussing the results of an Alberta Agriculture and Forestry project looking at greenhouse energy and material efficiency and how best to manage these in your greenhouse operation.

### October 19 (3 PM MST) –

**Dr. Chieri Kubota and Mark Kroggel, University of Arizona**

Long popular in Japan and Europe, hydroponic strawberry production has largely been ignored in North America. Chieri and Mark are looking to change this with their research and will discuss some of what they've discovered along the way.

### November 16 (3 PM MST) –

**Grace Fedak, Serviceberry Farms**

Grace Fedak has been growing some of the best strawberries in Alberta for over 20 years on her heavily treed Strathmore area farm. As her shelterbelts have aged, Grace has begun to switch them to eco-buffers and will talk about her successes and failures along the way.

### December 14 (3 PM MST) –

**Dr. Jim Faust, Clemson University**

Jim is an associate professor of Floriculture at Clemson University and an expert in the area of diagnostics. Over the hour webinar, he'll be running an interactive "Name that problem" with some bedding plant and greenhouse issues he has seen over his career.

### January 18 (3 PM MST) –

**Christie Pollack, Christie's Gardens and Greenhouses**

As owner of Christie's Gardens and Greenhouse in High Prairie, Christie Pollack is passionate about customer service. She'll discuss how to engage even your most problematic clients without alienating and provoking them.

### February 22 (3 PM MST) –

**Dr. Laura Van Eerd, University of Guelph**

Laura is an associate professor at the University of Guelph in the area of soil fertility and cover crops. A proponent of on-farm trialing, she will tell you what you need to set up your own on farm trialing so you get the biggest bang for your buck from new products and techniques.

### March 21 (3 PM MST) –

**Dr. Ken Fry**

Ken is a world renowned entomologist and is passionate about the role of beneficial insects in cropping systems. He'll be talking about how to encourage these natural enemies in your horticultural crops to improve your crop health and ultimately your bottom line.



## Human Resources **Price: FREE**

Kristen Cumming of Cantos Performance Management is passionate about agriculture and small business human resources in Alberta. She'll be looking at current trends in goal setting, providing feedback and generating engagement in your business.

- **January 12, 2016 – Chinook Honey, Okotoks, AB Start Time: 7 p.m.**
- **January 20, 2016 – Green Island Garden Centre, Fairview, AB Start Time: 7 p.m.**
- **January 27, 2016 – Arber Greenhouses, Wetaskiwin, AB Start Time: 7 p.m.**

## Greenhouse Energy and Material Efficiency **Price: FREE**

Toso Bozic, Bioenergy/Agroforestry Specialist with Alberta Agriculture and Forestry, will discuss this recent project looking at ways to make Alberta's greenhouse industry more efficient and what you can implement in your own operation.

- **March 29, 2016 – Grande Prairie Provincial Building, Grande Prairie, AB Start Time: 7 p.m.**
- **March 30, 2016 – Thiel's Greenhouse, Bruderheim, AB Start Time: 7 p.m.**
- **March 31, 2016 – Red Hat Co-op, Redcliff, AB Start Time: 3:30 p.m.**

# Registration: RSVP to 1-800-387-6030

## 2015 – A Year in Review

It is always challenging to attempt to sum up a year, since it tends to be one-sided and biased towards the experiences of the writer. That being said, it is always good to reflect on the year and what happened, if only to gain perspective on your individual situation.

2015 was a year of challenges, with a number of new things to deal with or adapt to, in some cases collectively as an entire (horticulture) industry, and in others, specifically in a particular sector.

- The dry conditions that were fairly universal across the province were a major obstacle to deal with if you were growing anything in the field. If you had access to water, you were in better shape, as the dry conditions reduced disease pressures fairly significantly. Otherwise, lack of water set back plant development, weakened stands and reduced yields, while increasing worries of many producers, along with costs. Some producers were fortunate to get some relief, but most people didn't get moisture until later in the season.
- Some crops were supposed to be excellent this season, notably a number of producers reporting that their Saskatoon berry crops were very good. It wasn't universal, but if moisture was such that the fruit set was decent, quality was also excellent.
- Proposed changes to minimum wage levels definitely caused a blip on most producers' radar, as it has the potential to impact producers' bottom line.
- Severe weather events were also a challenge for a number of areas, although it wasn't something that came up a whole lot in calls over the season (thankfully). Hail seems to be the (bad) flavour of the day this year, with few severe, heavy rains or wind storms reported.
- Some of the diseases that we've been concerned about in recent years, particularly Late blight of potato and tomato, were not reported or discovered in any major way this season, partly due to the dry conditions (which help reduce the pressure) and partly due to improved monitoring and management in crops. There weren't many other common diseases reported in any horticulture crops this season, which is good.
- Monitoring for problem and/or invasive insect pests has been ongoing for the last several seasons and 2015 saw one pest, Spotted Wing Drosophila (SWD), discovered at all of the monitoring sites across Alberta. SWD is a major problem across North America, and seeing it increase somewhat in Alberta is worrisome. It was found in several crops, but our main concern is still day neutral strawberries (fall production) and raspberries (especially fall-bearing types). Levels of SWD were not such that you might be looking at significant inputs for control/management, but that is a potential need in coming years.
  - Other insect pests, such as Brown Marmorated Stink Bug (BMSB) and Swede Midge, weren't picked up this year, at least not in traps in horticulture crops.
- Changes to Farm Safety legislation caused varying amounts of concern across the industry depending on the sector. Hopefully most producers took time to provide input in person or online and will continue to participate in the process of developing regulations as things progress. Trying to stay abreast of changes and updates can be challenging, but is important.
- On the extension programming side of things, we were busy as beavers this year, planning many different events and activities for producers of the various horticulture sectors. We tried out different delivery methods (bus tours, webinars, recorded stuff, etc.), timing (evenings vs days), locations and topics. There were several field days, a greenhouse bus tour, trade show appearances, evening sessions, webinars, and other workshops, in addition to talking to many people on the phone or via email. It was a rewarding year and we hope that we were able to help out in a positive, impactful way.

## The Art of Telling Your (Farm's) Story

In the global marketplace there are literally millions (and probably billions) of different businesses in existence. They come in all shapes and sizes. Most are completely different from your operation and will have little or no impact on your success or failure as a business. Most will not be competing for your customers.

As you shift the focus inward and downward, to a continental, national, regional, and then local scale, you will start to see more and more operations that have similar interests and products. You will certainly see some degree of overlap in the customer base. In many ways, this depends largely on the items or products that you produce. The reality is that there are a finite number of customers in a given area for you to sell your product(s) or experience(s) to.

Basic economic principles suggest that the demand for something can be tied to the supply of that same something. With changes in supply, demand changes accordingly. Assuming that one variable is fixed, as supply decreases, demand may increase and vice versa. The only way to fix this is to either A) adjust supply to meet demand, B) create more demand, or C) create a different demand stream entirely.

Option C actually has two separate streams or options. You could produce something different from others, thus entering a different demand group or, alternatively, you could differentiate yourself from the others in your demand group, at least enough to stand out in some way from the others around you.

So, how do you differentiate yourself from other operations? How do you create that connection with your potential customers? In direct marketing channels, it hinges, in large part, on how you tell YOUR story.

In basic terms, a story is made of approximately five main components, including plot, character, setting, point of view and theme/style. The different parts of a story are combined together to grab and hold the attention and interest of the audience. Good stories resonate with the audience, both because of their content and the way that they are presented or delivered.

If you are going to tell your story, you first have to BUILD your story. You know your operation. Who are you? What do you do? What is your history? How did you come to be? What do you offer? These are the basic framework elements of your story, probably representing the plot and maybe some of the character elements of the story. All of these things, and more, go into your story.

Look deeper. What makes you special or unique? Look for additional character elements, those traits that make you stand out from the crowd. What about your setting? Where are you located? What about thematic or style elements? All of these add meat to the bones and spice to the pudding and will draw and keep the interest of your audience (existing and potential customers). They create a mental picture for the customer and will help to form a personal interest or connection with them.



From this point, you have to TELL your story. There are two angles to this. One side relates to the TOOLS that you use to tell your story. The other side relates to the WAY that you communicate the elements of your story to your audience.

Initial contact tools are meant to create visibility and to catch the attention of the audience. Think of them as “sparkly bits”. These may include websites, promotion / advertising, or personal contact and communication. Further contact is required to build on that initial contact and create more solid and stable ties. These may include newsletters, social media, as well as continued advertising and personal contact in various settings. They also include the experiences that customers have with you and your products. Use a variety of tools to make visual and mental connections with your audience.

When it comes to HOW you tell your story, you are trying to capture your audiences' attention and then hold that interest. You are targeting different parts of your customer's personality. You might use humour or other social-based elements (heart), build on truth, knowledge or interest (head/mind), link up with common interest themes (heart/mind) or try and establish personal connections and relationships, which engender loyalty (heart). Depending on the method that you are using, and the audience, you could use passion, interaction, or interest.

Repetition of core elements imprints your story in the minds of your customers. This can be even more effective if you tie your description to visual or mental cues, such as logos, symbols or a central theme which is representative of your story. Since every listener (customer) in the audience (market) is different, it is best to use variety as you tell your story. At the end of it all, you want people to remember some element of your story, so they come back for more.

This entire process is creative and entirely subjective and isn't something that can be done according to a plan or a checklist, hence the reason for it being the “art” of storytelling, rather than the “science”.

### From the Great Lakes EXPO 2015:

#### Some points from “*Telling Your Story – Developing Your Historical Narrative* – by Matt Schuld”

While attending GLEXPO 2015, I sat in on a presentation by a fellow that was all about creating and utilizing a farm's history to build identity and increase a connection with customers. Here are some of the key points I took in.

- Farmers are the best resource for preserving the history of agriculture – you are ambassadors\
- Benefits to you:
  - Enhances your identity
  - Adds value to your community offerings – people want to be a part of an ongoing tradition or cultural activity
  - People want to reconnect with their (now more distant) farm roots
- Basic rules:
  - Historical content must relate to what farm visitors are seeing and experiencing (it's got to be connected)
  - The story is what makes history fascinating (not just names, dates and general info)
  - Don't be afraid to use historical material to ask thought-provoking questions
  - Keep history relevant and meaningful to the life of the visitor
    - Keep things positive – avoid framing things as “the good ol' days” or the opposite

## Chokecherry Fruit Gall Midge

*Contarinia virginiana*

Crops Affected: chokecherry and Saskatoon berry

### Life Cycle:

- Adults are tiny flies (midges)
- Adults emerge from overwintered pupae in late spring (May) and begin to lay eggs in host flowers
- Eggs hatch and multiple, distinctive bright orange maggots feed within the developing fruit
- Feeding causes the fruit to become enlarged and discoloured (creating a swollen gall) and the developing seeds abort
- Larvae feed inside the gall until late July and then exit to drop to the ground to pupate
- The hollow fruit will drop off the plant before the berries are fully ripe
- There is one generation per season

### Symptoms:

- Infected fruit become a swollen and distorted gall, often pear-shaped and bright red (although it will be green initially)
- Galls may be 4-5 times the size of normal, uninfected fruit
- Galls are hollow and will contain many small, orange maggots in the cavity
- The number of infected fruit can range from one in hundreds of fruit to severe infestations where almost all of the fruit are infected

### Monitoring:

- Watch plants for gall development

### Management:

- Remove and destroy infected galls when they are detected, prior to larvae exiting the fruit
  - This may reduce survival and keep populations from increasing
- No registered insecticides are available



Entire cluster is infested

Swollen galls are 2-5 times the size of healthy fruit and green to bright red



Opening gall reveals hollow cavity full of bright orange maggots

Photos by Robert Spencer



# DISEASE OF THE MONTH

## Fusarium Dry Rot

**Causal Organism:** *Fusarium sambucinum*, *F. solani* var. *coeruleum* and *F. avenaceum*

**Crops Affected:** Potatoes

**Disease Cycle:**

- Inoculum found in contaminated soil or in infected tubers (main source)
- Requires wound or entry points for infection of tubers
- After infection, disease develops within infected tubers throughout the storage period
- Does not spread between tubers in storage

**Symptoms:**

- Slightly darkened, shallow lesions become apparent within a month of infection
- Infected tissues become sunken and somewhat wrinkled, with concentric rings of discoloured tissue radiating from the initial point of infection
- Rotted tissues are dry, with cavities lined with mycelium and spores
- Tubers may become completely shrivelled as rot advances and tissues dry out

**Management:**

- Avoid wounding tubers at any stage of production
- Adjust all equipment adequately to minimize wounding – during planting, harvest and post-harvest handling
- Maintain good sanitation during pre-planting (seed preparation, planting, etc.) and post-harvest activities
- Ensure adequate skin set prior to harvest (top killing)
- Ensure that there is an adequate curing period to promote wound healing prior to long-term storage
- Fungicide applications at bin loading are relatively ineffective, as contact between infected areas and control products is difficult to achieve – although it may help to protect wounded tubers initially until wounding healing can occur
  - Fungicide resistance is also very prevalent in Western Canada
- Maintaining a low storage temperature can help to slow the development of this disease in storage (adjust according to type of potatoes being grown)



Early (wet) stages of Fusarium Dry Rot, progressing towards internal cavity rotting

Photos by Robert Spencer

Fusarium Dry Rot of potatoes

Photo by MAFRI

[Pest Management  
Regulatory Agency  
\(PMRA\) –  
Electronic Label Search  
Engine](#)

Search the database for  
electronic labels