

Fall colours, fall festivals and events, a dramatic upswing in harvest activity, as well as a shift in daylength and daytime (and nightime) temperature are all pretty good indications that summer is drawing to a close and fall (and then winter) are upon us. And so, here is another edition of Hort Snacks.

In this edition, you will find many different conference and event options to choose from, as extension season picks up. If you can't find a workshop, webinar, conference or event to suit your needs, you aren't trying hard enough. You'll find a report of a past event, as well as the usuall rogues gallery of disease and insect of the month.

There are a number of areas that aren't at saturation for a number of horticulture crops, and the horticulture industry isn't immune to the chronic problem of aging. As a result, we are putting on a workshop for anyone interested in getting into Horticulture (geared to direct market fruit and veg, mainly). If you know someone that is new and interested or that is thinking about making a switch from boring field crops, direct them to Explore Hort.

As you roll into and through harvest, feel free to fire off any suggestions for any sort of information that you might like to see in the coming months, as well as further afield, as this is the time when we do a bit of planning for the next year. If you want to share a bit about how your season went, with regards to various crops, we'd love to hear about it.

Have a safe harvest.

Rob Spencer/Dustin Morton, Commercial Hort Specialists Alberta Ag-Info Centre Alberta Agriculture and Rural Development 310-FARM (3276)	In this edition of Hort Snacks Featured Website 1 Things to Do / Things to Think About 2
FEATURED WEBSITE Farm Hack www.farmhack.org Worldwide community of farmers that share their equipment builds or modifications (a.k.a. "hacks") with others	 Mental Snacktime – Change / Adjustment2 How Much Straw?2 Upcoming Conferences / Workshops3 Q&A3 Save the Date – AB Farm Fresh School 20163 Hort Snacks-to-Go Webinar series4 Explore Horticulture workshop series5
<u>NEWSLETTER USE RESTRICTIONS</u> 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.	 CleanFARMS program6 Hort Snacks on Wheels – An Educational Adventure7 In the News / Articles of Interest8 Insect of the Month – Wireworm9 Disease of the Month – Pink Rot10

THINGS TO DO / THINGS TO THINK ABOUT THIS MONTH

Strawberries

- Apply herbicides prior to freeze-up and incorporate with water (see pesticide labels for details)
- Straw mulch application is also a requirement for good winter survival of strawberries
- Strawberry plants will shift into dormancy after 3 to 5 frosts in the -5°C range. A protective layer of straw can be applied at this point. Temperatures of -7°C can cause some crown or bud damage therefore straw should be applied prior to these temperatures.
 - Clean wheat or rye straw should be applied at a 10-15 cm (4-6 inch) thickness over the rows
 - Producers having difficulty finding wheat or rye straw can substitute barley, oat or flax, if necessary.
 - Straw is often applied in late October or even early November – however recent experience suggests that an earlier application (perhaps mid-October), with careful monitoring of temperatures, may be better than following a general calendar rule.

Raspberries

- Complete spent cane removal of floricane raspberries
- Remove weeds from within row area
 Saskatoon berries
- Remove weeds from within row area
 Vegetables
- Complete harvest of any unharvested crops
- Consider the quality of the produce that is being placed into storage – frozen, damaged, diseased produce will not improve in storage – be harsh when it comes to culling
- If cover crops have not been planted for soil conservation, think of other ways to prevent soil erosion due to wind, water, etc.
- Consider ways of disposing of cull piles they harbour disease, insects, and other potential problems, plus are unsightly

How much straw??

(The eternal strawberry question)

- To apply 4-6 inches of straw over rows
- 2-3 tons/acre (4.6-6.7 t/ha)
- 120 small square bales / acre
- 10-12 large round bales / acre
- Apply 4 inches over each row and then 1-2 inches over 4-5 rows

General / Other

- Sample soils in existing and future berry and vegetable fields
 - o Depth
 - 0-6 inches & 6-12 inches for strawberries
 - 0-6, 6-12 & 12-24 inches for raspberries and Saskatoon berries
 - 0-6 inches & 6-12 inches for the majority of vegetables; for deep-rooted perennial vegetables, also sample 12-24 inches
- Ensure good soil moisture prior to freeze up
- Apply registered herbicides
- Once herbicide and mulch is applied there is nothing to do until spring? → NOT!!
 - This is the best time of year to make plans for changes in varieties, check in/out procedures, promotional activities, etc. as it is still fresh in your mind.
 - By waiting another month or 2, your memory will not be as fresh and things may be forgotten. Plan your winter timetable now to make the best use of services that may be available.
 - Make notes of things that must be done and when you can do them, e.g. strawberry transplanter needs new fingers; order additional herbicides, etc.
- Ensure sprayers and other equipment are repaired and ready for next year
- Winterize sprayers and other equipment
- Repaint signs if necessary

MENTAL SNACKTIME – Change / Adjustment

"Change is the law of life. And those who look only to the past or present are certain to miss the future." – John F. Kennedy

"If you do not change direction, you may end up where you are heading." – Lao Tzu

"It may be hard for an egg to turn into a bird: it would be a jolly sight harder for it to learn to fly while remaining an egg. We are like eggs at present. And you cannot go on indefinitely being just an ordinary, decent egg. We must be hatched or go bad." – C. S. Lewis

"When we are no longer able to change a situation - we are challenged to change ourselves." – Viktor E. Frankl

Upcoming Conferences / Workshops October 2015

Canadian Greenhouse Conference October 6-8, 2015 – Scotiabank Convention Centre, Niagara Falls, ON

www.canadiangreenhouseconference.com

- **CanWest Horticulture Show** Oct 9-10, 2015 - Tradex - Abbotsford, BC www.canwesthortshow.com
- Hort Snacks-to-Go Webinar Hydroponic strawberry production Oct 19, 2015
- ISA Prairie Chapter The Circle of Life A Tree's Story Oct 19-20, 2015 – Lethbridge Lodge Hotel & Conference Centre - Lethbridge, AB http://www.isaprairie.com/2015-isa-prairie-chapter-conferenceroots-of-success
- **Getting into Farming Information Sessions** Oct 20 & 22, 2015 - Airdrie Ag Centre - Airdrie, AB / Sparrow Drive Building – Leduc, AB To register – 1-800-387-6030 – See Coming Events
- PMA Fresh Summit International Convention & Exposition October 23-25, 2015 - Georgia World Congress Center, Atlanta, Georgia, USA http://www.freshsummit.com/
- 4th Canadian Food Summit Oct 26-27, 2015 - Hilton Toronto - Toronto, ON http://www.conferenceboard.ca/conf/foodsummit/default.aspx
- Hort Snacks @ Night Standard Operating Procedures Oct 27-29, 2015 - Coaldale/Sherwood Park/Fairview To register – 1-800-387-6030 – See Coming Events

November 2015

- Saskatchewan Green Trades Conference Nov 4-5, 2015 – Saskatoon Inn, Saskatoon, SK http://www.saskgreenhouses.com
- Marketing Made Easy workshop Nov 5, 2015 – Calgary Sunnyside Farmers Market – Calgary, AB To register – 1-800-387-6030 – See Coming Events
- **Explore Horticulture** Nov 14, 2015 - Lethbridge, AB To register – 1-800-387-6030 – See Coming Events
- Hort Snacks-to-Go Webinar Eco-buffer experiences Nov 16, 2015
- Potato Growers of Alberta Annual General Meeting Nov 17-19, 2015 - The Sheraton - Red Deer, AB www.albertapotatoes.ca
- **Green Industry Show & Conference** Nov 19-20, 2015 – BMO Centre at Stampede Park, Calgary, AB

Garden Centre Bus Tour Nov 18, 2015 - Calgary area www.greenindustryshow.com

Explore Horticulture Nov 28, 2015 - Lacombe, AB To register – 1-800-387-6030 – See Coming Events

Upcoming Conferences / Workshops

December 2015

- Great Lakes EXPO Farm Market Bus Tour Dec 7, 2015 - Grand Rapids, Michigan http://bustour.greatamericanmediaservices.com/
- Great Lakes Fruit, Vegetable and Farm Market Expo Dec 8-10, 2015 – DeVos Place Convention Centre – Grand Rapids, MI

www.glexpo.com

- Hort Snacks @ Night Cost of Production Dec 8-10, 2015 – Redcliff/Wetaskiwin/Grande Prairie To register – 1-800-387-6030 – See Coming Events
- Hort Snacks To Go Webinar Interactive greenhouse bedding plant and issues diagnostics Dec 14, 2015



Q: How have your marketing or market channels changed in the last 5 years?

A: More social media, less print, more personality, stories, experiential

A: As an observer of the industry, I've noticed that people are tending to focus more on one channel, with gradual shifts away from some of their traditinal channels, such as u-pick or Farmers' Markets (depending on the operation). This allows people to focus on what they are good at or their preferred option.

That being said, some producers continue to add layer upon layer to their operational offerings, to reach more and different customers. It requires more juggling and some fancy organizational footwork, but it seems to be working.

CSAs have exploded over the past 5+ years, with more and more of them being put in place as an option for customers of established farms. - Rob Spencer (AAF)

Next Month's ?
→ Which market channel is the most profitable for your operation?

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)

Watch www.albertafarmfresh.com for details.





HortSnacks-to-Go: 2015/2016 Webinar Series



To register call Dustin Morton at 403-742-7571 or email at 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 Frv

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.

Growing Forward 2





October 2015

Explore Horticulture! @pore local HORT SNACKS

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. Participants will also get a chance to talk to a new entrant to the industry about their production and marketing techniques.

November 14, 2015 (Lethbridge Exhibition Park, Lethbridge AB)

November 28, 2015 (Legion Hall, Lacombe AB)

January 9, 2016 (Agriculture Centre, Airdrie AB)

January 23, 2016 (Hazel Bluff Hall, Westlock AB

To register call 1-800-387-6030

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

8:30 a.m. Start



A federal-provincial-territorial initiative





Return your unwanted or obsolete pesticides and livestock medications

Farmers: safely dispose of your unwanted agricultural pesticides and livestock/equine medications from **October 26-30, 2015** at one of the following locations, for no charge.

Monday, October 26		Tuesday, October 27		Wednesday, October 28	
Fort MacLeod	Crop Production Services 403-553-3774	Bow Island	Crop Production Services 403-545-6806	Lethbridge	Cargill 403-327-4380
Benalto	Benalto Ag Services 403-746-2012	Magrath	Richardson Pioneer 403-758-3162	Crossfield	Crop Production Services 403-946-4588
Oyen	Richardson Pioneer 403-664-2620	Hanna	Fox Lake Agro 403-854-2820	Taber	Crop Production Services 403-223-2807
Dunmore	Richardson Pioneer 403-527-6600	Olds	Richardson Pioneer 403-556-3222	Drumheller	Kneehill Soil Services 403-823-4600

Thursday, October 29

Friday, October 30

Caresland	CHS Inc. 403-934-4644	Picture Butte	Crop Production Services 403-732-4585	
Craddock	CHS Inc. 403-733-3529	Brooks	Crop Production Services 403-362-2072	
Linden	Kneehill Soil Services 403-546-4050	High River	Crop Production Services 403-652-3500	
Vauxhall	Crop Production Services 403-654-4464	Hussar	Richardson Pioneer 403-787-3931	

* Obsolete pesticides and livestock/equine medications will be accepted from 9 a.m. until 4 p.m. at each site on the date indicated.



For more information, please call CleanFARMS at 877-622-4460 or visit www.cleanfarms.ca

Hort Snacks on Wheels 2015 – An Educational Adventure

August 24 dawned bright and early for 26 intrepid greenhouse owners and employees bound for the (somewhat) unchartered wilds of Saskatchewan. HortSnacks on Wheels left from Salisbury Greenhouse in Sherwood Park on a mission; visit four of the best garden centres between Edmonton and Saskatoon and find out what makes them success stories in their industry.

First stop on the tour was Kathy's Greenhouse, a second generation operation near Kitscoty, AB operated by Jason and Julie Anderson. Originally located closer to Marwayne, Jason and Julie moved the greenhouse after buying it from Jason's mother and greenhouse namesake, Kathy. In the last number of years, this full service garden centre has also branched out into market gardening and fruit production in a big way and has become a destination for people from as far away as Cold Lake and Edmonton. Jason and Julie are not afraid of trying new things, as is evident in their diverse and successful operation. They're not without their failures however and were just as proud of those as they were their successes. Jason's next project appears to be small scale hydroponic food production and, if it's anything like the rest of the farm, it will be something they give their all to, regardless of the outcome.

Last stop for Day one was Solar Gardens, just south west of Saskatoon, off of highway 60. This 10,000 sq. ft. wonder, owned by Roger Valliere and his partner Chris, is truly incredible not only in what they produce but also in their spot-on marketing. This dynamic duo specializes solely in succulents; plants which they have gathered from as near as their backyard to as far away as Brazil and Australia. A jaw dropping array of succulents surround you as you move from house to house to house. This has helped them to develop the online business that has largely driven them forward. This collection is one of the largest of its kind in Canada, if not North America, and is made accessible by Roger and Chris's approachable demeanor to succulent culture. Their operation has gradually grown to include not only the garden centre and their incredibly popular classes, but also a bistro and olive oil tasting bar. Exciting new projects include a new dining hall, as well as hosting concerts, art shows, and classes; further proof that people are more than happy to pay for a destination and experience when asked to. Roger's passion for succulents and surrounding himself with beautiful plants is infectious and truly made this stop a one of a kind experience.

Day two saw the tour start at Wilson's Greenhouses, a retail force in Saskatoon. Designed as a one-stop destination, Wilson's encompasses an incredible array of services; a full service garden centre, landscaping yard, Greenhawk tack store, pet food and supply area, driving range, putting course, and go-kart raceway. This year-round operation is proof that in a world of big box retailers, differentiating yourself, whether through quality of product, diversity of offerings, or incredible service is paramount to surviving. And not only are Wilson's surviving, but they are thriving as well; their current east side location will be demolished within the next year to make way for a housing development and a new facility 3x the size will be erected further south of their current location. This exciting new chapter in the Wilson's legacy is sure to keep drawing clients in from all over the greater Saskatoon area.

Unanticipated extra time allowed a quick stop at the University of Saskatchewan's Agriculture greenhouses, where cutting edge research is being done in multiple areas of agricultural production. Wheat, barley, lentils, corn, okra, beans, strawberries and much, much more were all

being used for research with a further entire greenhouse devoted to pet projects, including the incredible Coleus collection of Dr. Bob Bors. While the greenhouse is not without its own issues, such as an environmental control system still running on DOS, these structures were clearly built to last, and their quality shows. The header house and coolers were the envy of many and left everybody with a better understanding of the requirements of a research facility.

The final stop of the day was at yet another Saskatoon institution, Dutch Growers. Now in their third generation, Dutch Growers was started in 1953 when Arie and Adrie vanDuyvendyk bought Stewart Nurseries in Sutherland. Now currently run by Rick vanDuyvendyk and his children, this unmistakable facility (thanks to the large windmill adorning the entrance) houses a full scale garden centre, olive oil tasting bar and perhaps most uniquely, an entire women's fashion store. The vanDuyvendyks are well known in the industry for their systematic approach to their business, regularly assessing what departments are making them money and which ones are less successful. This is very evident with the fashion end of the business having slowly taken over the bistro that, while popular, proved to be more of a cash sink than desired. Also innovative is the family's approach to staffing, which is gradually being rolled out to different departments of the store. Beginning in the fashion side, staff have been incentivized to reach higher sales targets through increased wages, pizza parties, etc. Furthermore, employees who are identified as priorities or important to the business are retained through benefits programs which include RRSP's and health benefits. While they admit to having lost a few long term employees with this switch, generally it has had a positive effect on the guality of work and the employees they are hiring.

Each of these organizations are successes in their own right and while they all have that entrepreneurial drive that is so important in this industry, each one sticks out for a specific reason. Willingness to fail, passion for what you do, diversity and the ability to evolve are all demonstrated in these operations and have made them into the industry leaders they are today.

In the News / Interesting Articles	In the News / Interesting Articles
<u>Commercial transition to LEDs: A pathway to high-value</u>	• Improving cold-hardy grape varieties – Fruit & Vegetable
products – HortScience article	article
<u>Student converts mushrooms into useable fabric</u> –	Save Energy With The Right Greenhouse Glazing –
UDReview article	Greenhouse Grower article
 Late Blight Breakthrough – SpudSmart article 	<u>Making a pair of jeans from an old tomato crop</u> –
 <u>New Vegetable Grafting Technique Reduces Labor</u> – 	HortiDaily article
Growing Produce article	<u>To Understand Your Next Consumers, Look Beyond</u>
 <u>"It's all about the balance between continuity in the</u> 	Millennials – Greenhouse Grower article
business and harmony in the family" – HortiDaily article	<u>Cover Crops for Sustainable Crop Rotations</u> – SARE
 What makes one soil different from another? – 	article
OMAFRA article	<u>New Insights Into Biological Control</u> – Greenhouse
Small-scale vegetable farmers using smartphones to	Canada article
monitor storage – Canadian Manufacturing article	

Wireworm Agriotes obscurus (Dusky / European Wireworm) Agriotes mancus (Wheat wireworm)

Crops Affected:

potatoes, tomatoes, cucurbits, carrots, parsnips, maize (sweet corn), eggplant, peppers, small grain cereals (barley, wheat), etc.

Life Cycle:

- Adults are click beetles do not attack potatoes
- Larvae are glossy brown or brownish white and slightly darker at one end.
- Adults emerge in the spring and lay eggs in the soil near grass roots
- Early stage larvae do little damage
- As larvae mature (about 10 moults over several years), they become more voracious, feeding on any underground plant parts
- Larvae may reach 1.2 inches (3 cm) in length and are flexible but tough-bodied
- Thrive in grassland most severe damage occurs following pasture
- Prefer cereal crops do not like weed-free alfalfa
- Larvae can tolerate a period of starvation once one season of development has occurred
- Move vertically within the soil in response to moisture, temperature and to find food

Symptoms:

- Damage will be more severe in land that has recently been converted from pasture or grassland
- In corn irregular pattern of plants dying in the field; or weak or poorly vigorous plants larvae bore into seeds or enter the underground stem
- In potatoes Larvae burrow into seed pieces and developing roots and shoots spotty and weakened plants
- Larvae will also feed on developing tubers 3 mm diameter holes up to 4 cm deep holes will be lined with wound periderm tissue and tubers may be distorted
- Larval feeding can provide a point of entry for blackleg and Rhizoctonia diseases in potatoes
- Damage by wireworm feeding renders potatoes unmarketable

Monitoring:

- Wireworms detect carbon dioxide while searching for food use of baits can be an effective monitoring tool
- Bury bait (grain corn and wheat moistened to begin germination) 4-6 inches (10-15 cm) in the soil and mark with a flag
- Use several bait stations randomly placed throughout the field (30-50 per hectare)
- Check stations every 2 weeks for the presence of larvae
- Monitor stations until larval activity is detected or until early September
- Excessively wet or dry soil will reduce the efficacy of the baits, as will cold soil or soil that contains a lot of plant residues Management:
- Monitor to determine degree of infestation 1 or more wireworm larva per bait station = severe potato damage
- Shallow cultivation while larvae are young can expose them to predators (birds, etc.)
- Avoid planting into land that has recently been broken
- Use care when moving machinery from infested fields to new fields
- Rotations can reduce early population development but once larvae develop at least 1 season, rotating for population management will become less effective

External view – Entry hole in tuber





ZERLUEILE

Internal view – Entry hole in tuber

9

Pink Rot

Phytophthora erythroseptica Crops Affected: potato Disease Cycle:

- Soil borne fungal pathogen that affects tubers
- Pathogen is suggested to be resistant to drought and cold temperatures
- Infections occur before or at harvest
- Pathogen penetrates tubers through stolons (most often), but may also infect through eyes, lenticels or through wounds made during harvest or post-harvest handling
 - Infection by late blight can open door to infection with pink rot
 - o Infection with both diseases increases amount of rot in tubers
- May spread slowly in storage, however, the pink rot pathogen is more aggressive in tubers than the late blight pathogen **Symptoms**:
- Causes a spongy, soft rot in harvested tubers
- Wilt symptoms may occur in plants in the field
 - External surfaces may have a purplish-black appearance
 - the edge of the rot is delineated by a dark line
- Infected skin rubs off easily
- Internally, infected tissues are cream coloured or light brown, but turn salmon pink when exposed to air (within 20 minutes) and then turn black (within 1 hour)
- Internal rots progress in a nearly straight line between healthy and diseased tissues
 - Rots often start from the stolon end
- Rotted tissues give off an ammonia smell
- Infected tubers exude a clear liquid when squeezed
- Tubers remain intact but have a rubbery texture

Conditions Favouring Disease Development:

- High / excessive soil moisture
 - o low areas in fields, over-irrigation, poor drainage
- Disease susceptibility of different varieties is variable
 - Red-skinned > Russet-types > white-skinned

Management:

- Use healthy seed tubers
- Plant / grow potatoes only in well-drained soils
- Remove diseased plants
- Cull diseased tubers before storage
- Protective fungicides can be used at specific stages (in furrow or at tuberization) to reduce pink rot infection



Pest Management Regulatory Agency (PMRA) <u>– Electronic Label Search</u> <u>Engine</u> Search the database for electronic labels

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www.agriculture.alberta.ca/horticulture

brown, but turn salmon pink black (within 1 hour) healthy and diseased tissues Pink rot – internal & external tuber symptoms (Photos by Gerald Holmes, California Polytechnic State University at San Luis Obispo. Buowood org

DISEASE OF THE MONTH