



After what might be described as “the weirdest winter/non-winter ever”, the arrival of spring might seem to be a bit on the dull side. But the arrival of the latest edition of Hort Snacks is, of course, reason for celebration. We hope that you enjoy it.

In this edition, you'll find lots of little bits and pieces to keep you informed and aware of what is coming down the pipes. At the same time, you'll find an article on some nifty equipment that was observed at the Great Lakes Expo Trade show in December 2015. There are about 10 different things or concepts that you might consider.

As requested by readers, you'll also find the Direct Market Fruit and Vegetable Price survey results for 2015/2016. Thank you to everyone that contributed their data, as this helps to strengthen the quality of what is presented. Please read the assumptions and overviews to best understand how the data can be used. Hopefully, this will assist you in evaluating your pricing, a complicated exercise.

As spring gets rolling, please feel free to call or email with whatever you might need. We are happy to help in whatever way that we can. Little updates and notes are always welcome and help us to help the industry stay aware and keep moving forward. Here's hoping for a great spring and summer.

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

## FEATURED WEBSITE

**APS Crop Protection & Management Collection  
 Plant Management Network**

[Focus on Potato webcasts](#) (entire series)

[Potato Skin Diseases](#)

### *In this edition of Hort Snacks*

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

### **Strawberries**

- Plan plant pickup, field layout, planting labour
- Remove straw mulch when new growth appears (centre of crown)
- Application of some nitrogen (as growth commences → 10-20 lbs actual N/acre – end of April or early May)
- Herbicide application (e.g. Devrinol) prior to bloom, if it was not applied in the fall
- If planting both June bearers and Day-neutrals, plant Day-neutral strawberries first, as soon as you can work the land (maybe 3<sup>rd</sup> week of April).
- Deblossom newly planted June bearers for season
- Frost protection of June bearers (if required)
- Replenish bare or lightly covered spots with straw mulch

### **Raspberries**

- Thin florican raspberry canes and remove winter damaged material
- 2<sup>nd</sup> application of nitrogen (month end?) (20-40 lbs actual N/acre)
- Herbicide application (e.g. Devrinol), if it was not applied last fall
- Mowing to ground and removing last year's cane growth from primocane-type raspberries

### **Saskatoon Berries**

- Pruning / Thinning
  - Dead, diseased, low-spreading branches, branches larger than a Loonie – before bud break
- Complete pruning for rejuvenation / regeneration, if not completed

### **Black Currants**

- Prune branches over 4 years old (can be done on a rotational basis)
- Application of nitrogen fertilizer at end of month (or early May), starting in 3<sup>rd</sup> year → ~50 lbs/ac actual N

### **Vegetables**

- Depending on the crops that you are growing, you might start your transplants for those that require 6-8 weeks to grow.
  - Delay / stagger seeding to allow for hardening and multiple planting dates
- Depending on your production systems and equipment, prepare fields and lay plastic mulches
- Make pre-planting incorporated herbicide applications at mid or end of month for registered crops (follow label instructions for timing and rates)
- Plant earlier, cool season crops (depending on weather conditions)

### **General**

- Soil sampling / testing, if this was not done in the fall
- Finalize planning of plant layouts
- Plan your advertising timing
- Solidify your summer schedule – planting, spraying, irrigation, etc.
- Planning of marketing schedule
- Irrigation (as necessary)

### **Pest Monitoring / Management**

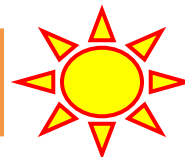
- Begin scouting for insect pests and diseases
- Strawberries
  - Start scouting for strawberry clipper weevil, when temperatures exceed 18°C
- Raspberries
  - Application of lime sulphur fungicide (22%) for spur/cane blight control
- Saskatoon berries
  - Application of Decis at green tip to bud elongation stage
- Black Currants
  - Make insect control applications at bloom

### **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.

**REMEMBER – Alberta's Elm Pruning Ban is in place from April 1<sup>st</sup> to September 30<sup>th</sup>** [www.stoppeded.org](http://www.stoppeded.org)



## Upcoming Conferences / Workshops

### April 2016

- Canadian Produce Marketing Association (CPMA) Conference & Trade Show  
April 12-14, 2016 – BMO Centre – Calgary, AB  
<http://convention.cpma.ca/>

### May 2016

- No events listed at this time

### June 2016

- 13<sup>th</sup> International Conference of the European Industrial Hemp Association (EIHA)  
June 1-2, 2016 – Rheinforum – Wesseling/Cologne, Germany  
<http://www.eiha-conference.org/>
- University of Saskatchewan Plant Sale Day  
June 3, 2016 – Horticulture Field Lab – Saskatoon, SK  
[www.fruit.usask.ca/extension.html](http://www.fruit.usask.ca/extension.html)
- Greenhouse Canada Grower Day 2016  
June 15, 2016 – Holiday Inn – St. Catharines, ON  
<http://www.greenhousecanada.com/grower-day/>

## CleanFARMS 2016

CleanFARMS will be running obsolete pesticide & livestock medication collections in October of 2016 as follow:

- Northern Alberta (Red Deer to AB Peace)

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

Visit [www.cleanfarms.ca](http://www.cleanfarms.ca) for more information.

Note: In 2015, Alberta farmers disposed of more than 72,000 kg of obsolete pesticides and livestock medications

## Registration for Open Farm Days 2016 NOW OPEN!

The initiative provides an opportunity to support local food producers, educate consumers about agriculture, and generate additional tourism in your area. **This year's event is the weekend of August 20-21, 2016** (Saturday is for farm to table culinary events, while Sunday is for farm open houses).

For further information or to **register by May 31<sup>st</sup>** please go to <http://albertafarmdays.com/host-farms-2016/>



### **Q: How do you prepare your fields for planting?**

**A:** I don't often get any fall cultivation done so the fields sit with crop & weed residue all winter. In spring we usually cultivate deep and rototill. Just before planting we spread fertilizer and rototill a second time.

Next Month's ? → [What new thing are you excited to try this coming season?](#)

## Mental Snacktime – Curiosity

"We keep moving forward, opening new doors, and doing new things, because we're curious and curiosity keeps leading us down new paths." – Walt Disney

"Once we believe in ourselves, we can risk curiosity, wonder, spontaneous delight, or any experience that reveals the human spirit." – e. e. cummings

"Pay attention to those employees who respectfully ask why. They are demonstrating an interest in their jobs and exhibiting a curiosity that could eventually translate into leadership ability." – Harvey Mackay

"Human spirit is the ability to face the uncertainty of the future with curiosity and optimism. It is the belief that problems can be solved, differences resolved. It is a type of confidence. And it is fragile. It can be blackened by fear and superstition." – Bernard Beckett

# Alberta Farm Fresh School 2016 – A Selection of Topics and Speakers with Presentations

## Day 1

- [Strawberry Production – Soup to Nuts](#) – (1468KB) – Robert Spencer – AAF
- [Strawberry Production on Plasticulture](#) – (1203KB) – Blaine Staples – The Jungle Farm.
- [Weed Control Options for Veg Crops](#) – (1631KB) – Ty & Janice Shelton / Jolene Yackimec – Sand Springs Ranch
- [Pest ID – Know Your Enemies](#) – (1862KB) – Robert Spencer – AAF
- Practical Crop Planning and Rotation for Vegetable Production – Mike Kozlowski – Steel Pony Farm
- [Packaging Options & Regulations](#) – (833KB) – Lindsay Sutton - AAF
- Adopting Effective Practices for the Growing Farm & Processing Business – Jody Marshall / Irvings Farm / The Organic Box
- Local Food – Perspectives on Where it is Going – Kevin Kossowan

## Day 2

- [Practical Integrated Pest Management](#) – (574KB) – Dustin Morton – AAF
- [Newer Fruit Crop Production – Dwarf Sour Cherry / Haskap](#) – (2800KB) – Robert Spencer – AAF
- [Spotted Wing Drosophila & Other New Threats](#) – (1002KB) – Robert Spencer – AAF
- [Basic to Fancy Post-Harvest Handling & Storage](#) – (548KB) – Rony Erdman – Erdmann's Gardens & Greenhouse / [Post-Harvest Handling & Storage](#) – (158KB) – Rod Bradshaw – Beck Farms
- How to Make Your Farm Customer Friendly – Blake Hall – Prairie Gold Meats / Tam Andersen – Prairie Gardens
- Transition to Organic – Horticulture and Meat – Brian Luce – Lucends Ranch / John Mills – Eagle Creek Farms
- Innovations on the Horizon – Hoops, Houses & Aquaculture – Greg Rekken – Olds College / Daniel Chappell – Country Thyme Farm / Dr. Nick Savidov – Lethbridge College
- Building the Next Generation of Farmers – Dana Penrice – Organic Alberta

Click on the presentation topics to be access a PDF version of the presentation. Please note that not all presentations are available. Please do not copy, distribute, or duplicate the presentation files, without first seeking and obtaining the consent of the presenter.

### In the News / Articles worth Reading

- [Zebra Chip Update](#) – SpudSmart article
- [Breeding wildness back into fruit and veg](#) – Fruit & Veg article
- [Why spray if plants can push, pull greenhouse pests away?](#) – London Free Press article
- [Pros and cons of using high tunnels](#) – AgriNews Illinois article
- [A Customer-Research Method You Can Do Easily: Observe Them](#) – Greenhouse Grower article
- [The future of vertical farming](#) – HortiDaily article
- [Growing Raspberries in Tunnels and Greenhouses: basic concepts](#) – OMAFRA article
- [Growing Raspberries in Tunnels and Greenhouses: maximizing yield](#) – OMAFRA article
- [Study Illustrates Potato Benefits for Kids](#) – SpudSmart article
- [Feet, not miles from farm to table and produce aisle](#) – HortiDaily / Lumigrow article
- [5 Things You Need To Know About Young Plant Consumers \[10% Project\]](#) – Greenhouse Grower article

## Some Things I Saw at the GLEXPO 2015 Trade Show

In my opinion, trade shows are very useful events for producers to attend, as they represent a chance to see new and emerging technologies, meet new and current suppliers and make contacts in various areas. As a non-grower (but a supporter of growers), I attend trade shows to see what is coming and what growers might consider looking into, in the areas of technology, equipment, marketing ideas, and the like.

The Great Lakes Fruit, Vegetable and Farm Market Expo boasts a pretty massive tradeshow over its three days. 2015 did not disappoint, as the trade show was actually bigger than I've ever seen it, with the equivalent of 1-2 (massive) rows of the trade show moved into one of the big ballrooms, creating a Farm Market space. The regular trade show space was still packed full. And there were lots of interesting things that I saw that you might want to think about investigating a bit further. Nothing major or earth shattering, but some good stuff.

**Lancman Fruit press** – this unit looked like it was entirely stainless steel, well-constructed and had a rugged removable screen/sleeve/sieve inside (optional for pressing grapes for wine). It can be used for a range of different fruit crops, although its size would suggest that it is best suited for grapes, cherries and smaller fruit.

<http://lancman.net/product/fruit-press-lancman/>



Lancman Fruit Press



**Removable Solar Panels** – Designed to accompany picking assistance equipment, these 12 volt panels can be put on or taken off, as needed, reducing the need to hook up batteries to an 110v outlet. I loved their sleek and simple design and it seemed like something that would make all sorts of battery-operated equipment simpler. These represent an add-on to the picking assistant that I've shown before.

[http://cropcareequipment.com/vegetable\\_equip/picking\\_assistant.php](http://cropcareequipment.com/vegetable_equip/picking_assistant.php)



Removable Solar Panel

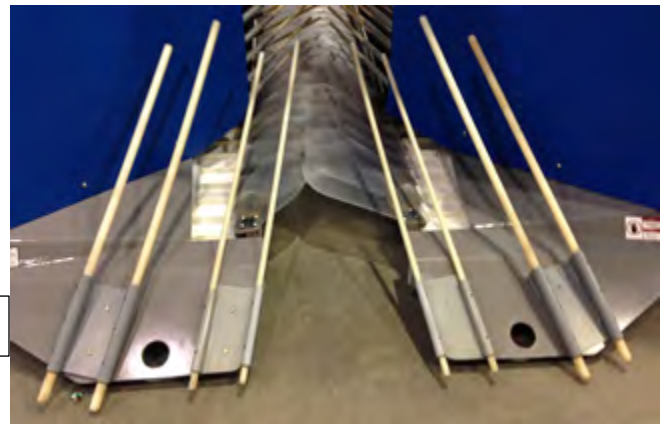
## Picking Bag Liners

**Picking Bag Liner and Clips** – Not that many people use “official” picking baskets or buckets in Alberta that I am aware of, but these things are pretty nice. They have good straps, are well made and look pretty comfortable to wear, especially for long periods of time. But what caught my eye this year was the addition of a fairly heavy-duty disposable bag liner. It is meant to be inserted, clipped on and then replaced daily. However, the dealer says that the durability of the bags meant that people have been using them for longer periods, so they are increasing the thickness slightly and will sell them for multiple day use. The bags are food safe, recyclable and come in rolls of 100. – <http://www.sfequip.com/>

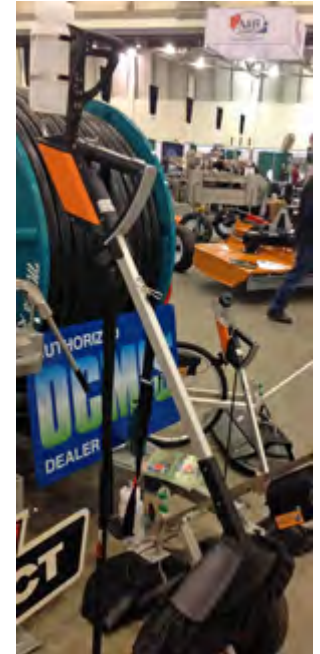
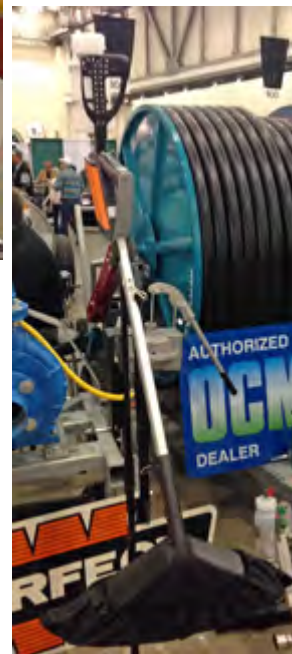


**Cane lifters** – These slightly flexible rods aren't necessarily new, but I don't remember seeing them much before. They attach to the nose cones/plates (which sort of slide under the canopy of the crop) of bush fruit harvesters and gently funnel and slide/ease the branches into the picking tunnel of the harvester. This means that you can get lower branches up into the harvester and there is less fruit loss.

## Cane/branch lifters



**ULV and Pure Herbicide Sprayers** – there have been more and more of these on the market in the last few years, but there were several examples at the show. The Pulmipur35 is designed to spray a full concentrate herbicide with no drift in sensitive areas. The other models are designed for shielded, ultra-low volume applications of pesticides.



## ULV & Pure Herbicide Sprayers

**Barrel washer line** – Again, this doesn't represent new or earth-shattering technology, but it looked like something worth looking at, especially if you are in the market for some new equipment. I like the simplicity of this machine. It didn't seem to have too many adjustable parts and looked like it would be reasonably gentle on produce of different types.

Manufacturer: Produce Packing Equipment



Barrel washer – plastic barrel

**Hose reels for large capacity irrigation supply lines and irrigation cannons** – These reels are tidy and look like they'd do a great job at keeping things in order, while providing you with the flexibility to move things around. The different size options were new to me, as I'd only seen the really large ones before. The small reel was about 2 feet tall (maybe) and is suitable to smaller acreage applications (these are the B-series).

[www.kifco.com](http://www.kifco.com)

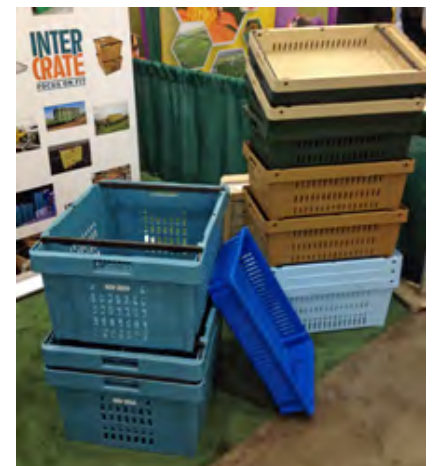
Hose reels for irrigation



**Adjustable produce crates/baskets** – There are literally dozens of different suppliers out there that make and distribute some type of produce basket or crate. I like the different options that were evident in this display. The thing to remember is that you aren't limited by one make or model when choosing. Shop around and find something that will fit your needs. There are some great products out there.

[www.intercratecontainer.com](http://www.intercratecontainer.com)

Various produce crates



**Handicap, Injury or Disability-conscious tools and equipment** – This booth displayed a bunch of different options for people to either prevent or work around handicaps. It really made me sit up and think, since injuries and repeated-use trauma are not necessarily uncommon to the farm. Heck, it is common anywhere. People often work through minor injuries or take short or long-term injury risks that are perhaps preventable. And not everyone is entirely mobile or free from handicap or disability.

Some of the equipment demonstrated in this booth was geared towards those in wheelchairs or were designed for reduced-mobility individuals. The website [www.disabilityworktools.com](http://www.disabilityworktools.com) presents a wide range of “adaptive” or “assistive” tools, as they are called.

Other equipment was quite simple and was designed to reduce repetitive work trauma, such as carpal tunnel syndrome or damage from vibration (e.g. grip support gloves), or to make work with things like chainsaws easier (e.g. lift backpack device).



Disability-conscious & assistance equipment



Disability assistance or injury prevention equipment





**Inter-row Cultivators using fingerweeders:** This final piece of equipment was just cool. No other way to put it. Garford Farm Machinery is out of the UK and is known for their uber-cool Robocrop precision crop weeding equipment. This particular unit is essentially pairs of fingerweeder attachments on a cultivator unit. Videos online show these things weeding crops at high speed.

[http://www.garford.com/products\\_interrow.html](http://www.garford.com/products_interrow.html)

In Canada, the supplier of these is [Willsie Equipment Sales](#)

Inter-row cultivation equipment



## AAF Employment Programs

### Summer Farm Employment Program

If full time farmers are thinking about hiring a student for summer employment, now is the time to apply. Once again, Alberta Agriculture and Rural Development will be offering the Summer Farm Employment Program. This program gives Alberta's youth the opportunity to gain farm work experience and provides wage support to farmers for the months of July and August. Alberta Agriculture and Forestry provides wage support to a maximum of \$400 per month as well as worker's compensation coverage and safety training information.

Employers must own or rent a farming operation in Alberta with gross production of \$25,000 per year and work must be directly related to the farming operation. This does not include domestic work or child care. Employers must recruit their own employee, provide daily supervision and ensure safe working conditions for their employee. Monthly records of time worked must be completed by the employer. Employees are paid by the farmer and by the government for each respective part of their salary, which must meet provincial minimum hourly rates.

Employees must be residents of Alberta, between 15 and 24 years of age and cannot be a direct relative of the employee. Employees must not be working fulltime anywhere else or attending school while participating in the program. If they have been working full time prior to July 1 for the employer, they are not eligible for the program. Employees require a social insurance number in order to receive payment under this program.

Farm safety is an emphasis in this program and all summer farm employers and employees are required to review a safety DVD together. Employees must complete and pass a safety quiz based on the DVD information in order to be accepted into the program.

Application forms and detailed information are available on Alberta Agriculture and Forestry's website [www.agriculture.alberta.ca](http://www.agriculture.alberta.ca). Applications are processed on a first come, first served basis. Applications can be printed from the website or obtained by calling the Ag-Info Centre at 310-FARM (3276). **The deadline for applying is May 31<sup>st</sup>, 2016** and signatures of both employee and employer must be included.

## Alberta Direct Market Average Berry & Vegetable Prices – 2015 / 2016

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. The average price discount or charge for a 4L pail was \$1. Some producers also make some price adjustments for early or late crops, depending on the crop.

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 2016 season, some producers were considering a small price increase in some fruit crops; however it appeared that many were maintaining their price, due to the economy and some other unknowns. 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. Price adjustments for 2017 were suggested as likely by some producers, depending on changes occurring in 2016.

### Fruit Prices

#### Strawberries

##### Marketing Generalities

Strawberries were often sold on a U-pick basis, however many more producers are 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=10)

##### Pre-Pick (On-farm or unspecified) (n=15)

##### Pre-Pick (Farmers' Market) (n=4)

| Range<br>(price per<br>pound) | Average<br>(price per<br>pound) | Median<br>(price per<br>pound) | Range<br>(price per<br>pound) | Average<br>(price per<br>pound) | Median<br>(price per<br>pound) | Range<br>(price per<br>pound) | Average<br>(price per<br>pound) | Median<br>(price per<br>pound) |
|-------------------------------|---------------------------------|--------------------------------|-------------------------------|---------------------------------|--------------------------------|-------------------------------|---------------------------------|--------------------------------|
| \$2.2 - \$7.0                 | \$3.64                          | \$3.0                          | \$3.0 - \$9.6                 | \$4.0                           | \$4.0                          | \$4.8 - \$8.0                 | \$5.7                           | \$5.0                          |

##### Comments

Prices varied with the size of the container that they are sold in, with most producers offering various sizes. 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<br>(price per<br>pound) | Average<br>(price per<br>pound) | Median<br>(price per<br>pound) | Range<br>(price per<br>pound) | Average<br>(price per<br>pound) | Median<br>(price per<br>pound) |
|-------------------------------|---------------------------------|--------------------------------|-------------------------------|---------------------------------|--------------------------------|
| \$2.2 - \$5.56                | \$3.53                          | \$3.4                          | \$3.6 - \$11.5                | \$6.02                          | \$4.0                          |

##### Comments

Prices varied with container size, often being sold in pint or smaller volume containers, which significantly elevates the price per pound (and returns). 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 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=16)  |                           |                          | Pre-Pick (n=18)         |                           |                          |
|  | Range (price per pound)  | Average (price per pound) | Median (price per pound) | Range (price per pound) | Average (price per pound) | Median (price per pound) |
|  | \$2.0 - \$5.0  | \$2.96                    | \$3.0                    | \$3.6 - \$11.5          | \$4.71                    | \$4.1                    |
| Comments   | -  |                           |                          |                         |                           |                          |
| Black Currants   |  |                           |                          |                         |                           |                          |
| Marketing Generalities   | Type of harvest (hand vs mechanical) not reported in most cases. Value-adding would be common  |                           |                          |                         |                           |                          |
|  | U-pick (n=3)   |                           |                          | Pre-Pick                |                           |                          |
|  | Range (price per pound)  | Average (price per pound) | Median (price per pound) | Range (price per pound) | Average (price per pound) | Median (price per pound) |
|  | \$2.2 - \$5.0  | \$3.4                     | \$3.0                    | Too few reported        | -                         | -                        |
| Comments   | -  |                           |                          |                         |                           |                          |
| Sour Cherries  |  |                           |                          |                         |                           |                          |
| Marketing Generalities   | Limited prices reported  |                           |                          |                         |                           |                          |
|  | U-pick (n=4)   |                           |                          | Pre-Pick (n=4)          |                           |                          |
|  | Range (price per pound)  | Average (price per pound) | Median (price per pound) | Range (price per pound) | Average (price per pound) | Median (price per pound) |
|  | \$2.2 - \$5.0  | \$3.4                     | \$3.2                    | \$2.25 - 5.0            | \$3.53                    | \$3.43                   |
| Comments   | Equal number of u-pick versus pre-pick reported; In past years, some variation in price due to pitted versus not pitted.   |                           |                          |                         |                           |                          |
| Haskap (Blue honeysuckle)  |  |                           |                          |                         |                           |                          |
| Marketing Generalities   | Limited prices reported. All were for u-pick   |                           |                          |                         |                           |                          |
|  | U-pick (n=4)   |                           |                          |                         |                           |                          |
|  | Range (price per pound)  | Average (price per pound) | Median (price per pound) |                         |                           |                          |
|  | \$3.0 - \$5.0  | \$4.33                    | \$5.0                    |                         |                           |                          |
| Comments   | -  |                           |                          |                         |                           |                          |
| Other Fruit  |  |                           |                          |                         |                           |                          |
| More "alternative" fruit are coming onto the market, but still limited numbers reported. Other fruit includes chokecherries, rhubarb, etc. |  |                           |                          |                         |                           |                          |
| Rhubarb  | Prices were reported in limited numbers, but rhubarb tends to be sold as pre-picked, with prices ranging from \$2.0 - \$2.98/lb, and an average price of \$2.33/lb (n=3) and a median of \$2.0/lb. Some rhubarb is sold by piece, with variable prices.  |                           |                          |                         |                           |                          |
| Chokecherries  | Prices weren't reported in any quantity, but are typically similar to those of Saskatoon berries.  |                           |                          |                         |                           |                          |
| Other fruit (e.g. gooseberries, apples, crabapples, etc.)  | Wide range of prices reported. There were too few numbers to report for any one crop. Prices are typically per pound, most often u-pick. Things like apples and crabapples are typically sold in larger volumes.   |                           |                          |                         |                           |                          |

## Vegetable Prices

|                   |   |                              |                            |                                   |                                   |                              |
|-------------------|---|------------------------------|----------------------------|-----------------------------------|-----------------------------------|------------------------------|
| Beans             | U-pick (n=5)  |                              | Pre-Pick (n=8)             |                                   | Pre-Pick (Farmers' Markets) (n=4) |                              |
|                   | Range<br>(price per pound)  | Average<br>(price per pound) | Range<br>(price per pound) | Average<br>(price per pound)      | Range<br>(price per pound)        | Average<br>(price per pound) |
|                   | \$2.0 - \$5.5   | \$3.39                       | \$2.75 - \$6.0             | \$4.04                            | \$3.33 - \$6.0                    | \$4.52                       |
| Comments          | -   |                              |                            |                                   |                                   |                              |
| Beets             | U-pick (n=7)  |                              |                            | Pre-Pick (n=11)                   |                                   |                              |
|                   | Range<br>(price per pound)  | Average<br>(price per pound) |                            | Range<br>(price per pound)        | Average<br>(price per pound)      |                              |
|                   | \$0.6 - \$2.8   | \$1.87                       |                            | \$0.7 - \$4.0                     | \$2.25                            |                              |
| Comments          | Often a slight discount for larger quantities. Lower prices often represent bulk / larger volume discount.  |                              |                            |                                   |                                   |                              |
| Beets, bunched    | Pre-pick (n=5)  |                              |                            | Pre-Pick (Farmers' Market) (n=14) |                                   |                              |
|                   | Range<br>(price per pound)  | Average<br>(price per pound) |                            | Range<br>(price per pound)        | Average<br>(price per pound)      |                              |
|                   | \$2.49 - \$4.0  | \$3.15                       |                            | \$2.0 - \$5.0                     | \$3.68                            |                              |
| Comments          | Insufficient u-pick prices reported for averaging   |                              |                            |                                   |                                   |                              |
| Broccoli          | U-pick  |                              |                            | Pre-Pick (n=9)                    |                                   |                              |
|                   | Range<br>(price per pound)  | Average<br>(price per Pound) |                            | Range<br>(price per pound)        | Average<br>(price per pound)      |                              |
|                   | -   | -                            |                            | \$1.63 - \$4.0                    | \$3.03                            |                              |
| Comments          | Some farms sell by unit, with variable pricing  |                              |                            |                                   |                                   |                              |
| Cabbage           | U-pick  |                              |                            | Pre-Pick (n=9)                    |                                   |                              |
|                   | Range<br>(price per unit)   | Average<br>(price per unit)  |                            | Range<br>(price per unit)         | Average<br>(price per unit)       |                              |
|                   | Too few reported  | -                            |                            | \$2.0 - \$4.0                     | \$2.89                            |                              |
| Comments          | -   |                              |                            |                                   |                                   |                              |
| Carrots           | U-pick (n=7)  |                              | Pre-Pick (n=11)            |                                   | Pre-Pick (Farmers' Markets) (n=7) |                              |
|                   | Range<br>(price per pound)  | Average<br>(price per pound) | Range<br>(price per pound) | Average<br>(price per pound)      | Range<br>(price per pound)        | Average<br>(price per pound) |
|                   | \$1.4 - \$2.8   | \$2.01                       | \$1.4 - \$4.0              | \$2.56                            | \$1.65 - \$4.0                    | \$2.56                       |
| Comments          | Some price variation depending on time of year, product size (higher price for smaller) and package volume. |                              |                            |                                   |                                   |                              |
| Carrots (bunched) | U-pick  |                              |                            | Pre-Pick (Farmers' Market) (n=13) |                                   |                              |
|                   | Range<br>(price per unit)   | Average<br>(price per unit)  |                            | Range<br>(price per unit)         | Average<br>(price per unit)       |                              |
|                   | -   | -                            |                            | \$2.0 - \$6.0                     | \$4.46                            |                              |
| Comments          | -   |                              |                            |                                   |                                   |                              |
| Cauliflower       | U-pick  |                              |                            | Pre-Pick (n=6)                    |                                   |                              |
|                   | Range<br>(price per unit)   | Average<br>(price per unit)  |                            | Range<br>(price per unit)         | Average<br>(price per unit)       |                              |
|                   | -   | -                            |                            | \$1.5 - \$3.0                     | \$2.67                            |                              |
| Comments          | -   |                              |                            |                                   |                                   |                              |
| Corn, sweet       | U-pick (n=3)  |                              |                            | Pre-Pick (n=4)                    |                                   |                              |
|                   | Range<br>(price per dozen)  | Average<br>(price per dozen) |                            | Range<br>(price per dozen)        | Average<br>(price per dozen)      |                              |
|                   | \$9.0 - \$12.0  | \$10.33                      |                            | \$8.0 - \$12.0                    | \$10.50                           |                              |
| Comments          | Some sales per cob (resulting in higher cost per dozen), but most per dozen.                                |                              |                            |                                   |                                   |                              |

|   |   |                                      |  |                                      |
|---|---|--------------------------------------|--|--------------------------------------|
| <b>Cucumbers,<br/>Pickling</b>                | <b>U-pick</b>   |                                      | <b>Pre-Pick (n=6)</b>                    |                                      |
|   | <b>Range<br/>(price per pound)</b>                            | <b>Average<br/>(price per pound)</b> | <b>Range<br/>(price per pound)</b>       | <b>Range<br/>(price per pound)</b>   |
|   | Too few reported  | -                                    | \$1.5 - \$3.0                            | \$2.43                               |
| <b>Comments</b>                               | -   |                                      |  |                                      |
| <b>Cucumbers,<br/>Slicing</b>                 | <b>U-pick</b>   |                                      | <b>Pre-Pick (Farmers' Markets) (n=3)</b> |                                      |
|   | <b>Range<br/>(price per unit)</b>                             | <b>Average<br/>(price per unit)</b>  | <b>Range<br/>(price per unit)</b>        | <b>Range<br/>(price per unit)</b>    |
|   | Too few reported  | -                                    | \$0.75 - \$2.0                           | \$1.42                               |
| <b>Comments</b>                               | -   |                                      |  |                                      |
| <b>Garlic (bulb/head)</b>                     | <b>U-pick</b>   |                                      | <b>Pre-Pick (n=10)</b>                   |                                      |
|   | <b>Range<br/>(price per unit)</b>                             | <b>Average<br/>(price per unit)</b>  | <b>Range<br/>(price per unit)</b>        | <b>Average<br/>(price per unit)</b>  |
|   | Too few reported  | -                                    | \$1.0 - \$4.0                            | \$2.9                                |
| <b>Comments</b>                               | Size of head/bulb will vary. Some sales in bunches or braids. |                                      |  |                                      |
| <b>Gourds,<br/>Ornamental<br/>(each)</b>      | <b>U-pick</b>   |                                      | <b>Pre-Pick (n=5)</b>                    |                                      |
|   | <b>Range<br/>(price per unit)</b>                             | <b>Average<br/>(price per unit)</b>  | <b>Range<br/>(price per unit)</b>        | <b>Average<br/>(price per unit)</b>  |
|   | Too few reported  | -                                    | \$1.67 - \$3.5                           | \$2.4                                |
| <b>Comments</b>                               | -   |                                      |  |                                      |
| <b>Greens, mixed<br/>(per pound)</b>          | <b>U-pick</b>   |                                      | <b>Pre-Pick (n=4)</b>                    |                                      |
|   | <b>Range<br/>(price per pound)</b>                            | <b>Average<br/>(price per pound)</b> | <b>Range<br/>(price per pound)</b>       | <b>Average<br/>(price per pound)</b> |
|   | Too few reported  | -                                    | \$6.0 - \$16.0                           | \$10.50                              |
| <b>Comments</b>                               | Sold in small packages (e.g. ¼ pound bags), in most cases.    |                                      |  |                                      |
| <b>Kale (per pound)</b>                       | <b>U-pick</b>   |                                      | <b>Pre-Pick (n=3)</b>                    |                                      |
|   | <b>Range<br/>(price per pound)</b>                            | <b>Average<br/>(price per pound)</b> | <b>Range<br/>(price per pound)</b>       | <b>Average<br/>(price per pound)</b> |
|   | Too few reported  | -                                    | \$6.0 - \$7.54                           | \$6.61                               |
| <b>Comments</b>                               | -   |                                      |  |                                      |
| <b>Kale (per unit –<br/>bag, bunch, etc.)</b> | <b>U-pick</b>   |                                      | <b>Pre-Pick (Farmers' Markets) (n=7)</b> |                                      |
|   | <b>Range<br/>(price per unit)</b>                             | <b>Average<br/>(price per unit)</b>  | <b>Range<br/>(price per unit)</b>        | <b>Average<br/>(price per unit)</b>  |
|   | Too few reported  | -                                    | \$2.0 - \$4.0                            | \$3.28                               |
| <b>Comments</b>                               | -   |                                      |  |                                      |
| <b>Kohlrabi</b>                               | <b>U-pick</b>   |                                      | <b>Pre-Pick (n=5)</b>                    |                                      |
|   | <b>Range<br/>(price per unit)</b>                             | <b>Average<br/>(price per unit)</b>  | <b>Range<br/>(price per unit)</b>        | <b>Average<br/>(price per unit)</b>  |
|   | Too few reported  | -                                    | \$1.5 - \$2.5                            | \$1.95                               |
| <b>Comments</b>                               | -   |                                      |  |                                      |
| <b>Lettuce, head</b>                          | <b>U-pick</b>   |                                      | <b>Pre-Pick (n=6)</b>                    |                                      |
|   | <b>Range<br/>(price per unit)</b>                             | <b>Average<br/>(price per unit)</b>  | <b>Range<br/>(price per unit)</b>        | <b>Average<br/>(price per unit)</b>  |
|   | Too few reported  | -                                    | \$2.5 - \$3.5                            | \$2.88                               |
| <b>Comments</b>                               | -   |                                      |  |                                      |
| <b>Lettuce (bagged)</b>                       | <b>U-pick</b>   |                                      | <b>Pre-Pick (n=13)</b>                   |                                      |
|   | <b>Range<br/>(price per unit)</b>                             | <b>Average<br/>(price per unit)</b>  | <b>Range<br/>(price per unit)</b>        | <b>Average<br/>(price per unit)</b>  |
|   | Too few reported  | -                                    | \$1.67 - \$3.5                           | \$2.78                               |
| <b>Comments</b>                               | Limited u-pick prices reported; Bag sizes vary                |                                      |  |                                      |

|                         |   |                           |                                  |                           |                                   |                           |
|-------------------------|---|---------------------------|----------------------------------|---------------------------|-----------------------------------|---------------------------|
| Lettuce, Romaine (head) | U-pick  |                           | Pre-Pick (n=6)                   |                           |                                   |                           |
|                         | Range (price per unit)  | Average (price per unit)  | Range (price per unit)           | Average (price per unit)  |                                   |                           |
|                         | Too few reported  | -                         | \$3.0 - \$4.0                    | \$3.25                    |                                   |                           |
| Comments                | Head size varied  |                           |                                  |                           |                                   |                           |
| Onions, Bulb            | U-pick (n=3)  |                           | Pre-Pick (n=6)                   |                           |                                   |                           |
|                         | Range (price per pound)   | Average (price per pound) | Range (price per pound)          | Average (price per pound) |                                   |                           |
|                         | \$1.58 - \$1.75   | \$1.66                    | \$0.7 - \$2.5                    | \$1.61                    |                                   |                           |
| Comments                | Type/colour not typically specified. Some packaging for slight volume discount          |                           |                                  |                           |                                   |                           |
| Onions, bulb (bunched)  | 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  | -                         | \$1.68 - \$3.0                   | \$2.23                    |                                   |                           |
| Comments                | -   |                           |                                  |                           |                                   |                           |
| Onions, Green           | U-pick  |                           | Pre-Pick (n=9)                   |                           |                                   |                           |
|                         | Range (price per unit)  | Average (price per unit)  | Range (price per unit)           | Average (price per unit)  |                                   |                           |
|                         | Too few reported  | -                         | \$1.68 - \$4.5                   | \$2.6                     |                                   |                           |
| Comments                | How they were sold as a unit varied. Some individually, most bunched.                   |                           |                                  |                           |                                   |                           |
| Onions, Sweet Spanish   | Pre-Pick (Farmers' Market) (n=3)  |                           | Pre-Pick (Farmers' Market) (n=3) |                           |                                   |                           |
|                         | Range (price per pound)   | Average (price per pound) | Range (price per unit)           | Average (price per unit)  |                                   |                           |
|                         | \$0.8 - \$1.66  | \$1.24                    | \$1.0 - \$2.5                    | \$1.83                    |                                   |                           |
| Comments                | Insufficient u-pick prices reported for per pound or per unit.                          |                           |                                  |                           |                                   |                           |
| Peas                    | U-pick (n=5)  |                           | Pre-Pick (n=5)                   |                           | Pre-Pick (Farmers' Markets) (n=8) |                           |
|                         | Range (price per pound)   | Average (price per pound) | Range (price per pound)          | Average (price per pound) | Range (price per pound)           | Average (price per pound) |
|                         | \$1.0 - \$4.0   | \$2.5                     | \$3.5 - \$5.0                    | \$4.34                    | \$2.5 - \$7.0                     | \$4.88                    |
| Comments                | -   |                           |                                  |                           |                                   |                           |
| Potatoes, mature        | U-pick (n=3)  |                           | Pre-Pick (n=9)                   |                           | Pre-Pick (Farmers' Mkt) (n=8)     |                           |
|                         | Range (price per pound)   | Average (price per pound) | Range (price per pound)          | Average (price per pound) | Range (price per pound)           | Average (price per pound) |
|                         | \$0.80 - \$1.4  | \$1.2                     | \$0.50 - \$1.75                  | \$1.33                    | \$0.6 - \$3.0                     | \$2.13                    |
| Comments                | Prices vary within season but also depending on volume (lower price for higher volumes) |                           |                                  |                           |                                   |                           |
| Potatoes, baby/new      | U-pick  |                           | Pre-Pick (n=5)                   |                           | Pre-Pick (Farmers' Mkt) (n=4)     |                           |
|                         | Range (price per pound)   | Average (price per pound) | Range (price per pound)          | Average (price per pound) | Range (price per pound)           | Average (price per pound) |
|                         | -   | -                         | \$2.0 - \$3.75                   | \$2.7                     | \$2.5 - \$3.75                    | \$3.19                    |
| Comments                | -   |                           |                                  |                           |                                   |                           |
| Pumpkins                | U-pick (n=5)  |                           | Pre-Pick (n=3)                   |                           |                                   |                           |
|                         | Range (price per unit)  | Average (price per unit)  | Range (price per unit)           | Average (price per unit)  |                                   |                           |
|                         | \$1.0 - \$25.0  | \$6.4                     | \$1.0 - \$3.0                    | \$2.0                     |                                   |                           |
| Comments                | Price varies widely with size.  |                           |                                  |                           |                                   |                           |

|                                      |   |                                      |                                    |                                      |
|--------------------------------------|---|--------------------------------------|------------------------------------|--------------------------------------|
| <b>Radish,<br/>bagged/bunched</b>    | <b>U-pick</b>                                   |                                      | <b>Pre-Pick (n=8)</b>              |                                      |
|                                      | <b>Range<br/>(price per unit)</b>               | <b>Average<br/>(price per unit)</b>  | <b>Range<br/>(price per unit)</b>  | <b>Average<br/>(price per unit)</b>  |
|                                      | Too few reported                                | -                                    | \$2.0 - \$4.0                      | \$2.81                               |
| <b>Comments</b>                      | -   |                                      |                                    |                                      |
| <b>Rutabaga</b>                      | <b>U-pick</b>                                   |                                      | <b>Pre-Pick (n=3)</b>              |                                      |
|                                      | <b>Range<br/>(price per pound)</b>              | <b>Average<br/>(price per pound)</b> | <b>Range<br/>(price per pound)</b> | <b>Average<br/>(price per pound)</b> |
|                                      | Too few reported                                | -                                    | \$0.5 - \$1.0                      | \$0.73                               |
| <b>Comments</b>                      | -   |                                      |                                    |                                      |
| <b>Spinach</b>                       | <b>U-pick (n=3)</b>                             |                                      | <b>Pre-Pick (n=6)</b>              |                                      |
|                                      | <b>Range<br/>(price per pound)</b>              | <b>Average<br/>(price per pound)</b> | <b>Range<br/>(price per pound)</b> | <b>Average<br/>(price per pound)</b> |
|                                      | \$4.0 - \$7.0                                   | \$5.65                               | \$7.12 - \$13.0                    | \$9.42                               |
| <b>Comments</b>                      | Sold in a range of package sizes, bunches, etc. |                                      |                                    |                                      |
| <b>Squash, Winter<br/>(per unit)</b> | <b>U-pick</b>                                   |                                      | <b>Pre-Pick (n=3)</b>              |                                      |
|                                      | <b>Range<br/>(price per unit)</b>               | <b>Average<br/>(price per unit)</b>  | <b>Range<br/>(price per unit)</b>  | <b>Average<br/>(price per unit)</b>  |
|                                      | Too few reported                                | -                                    | \$2.5 - \$5.0                      | \$3.5                                |
| <b>Comments</b>                      | Types not specified                             |                                      |                                    |                                      |
| <b>Swiss Chard</b>                   | <b>U-pick (n=3)</b>                             |                                      | <b>Pre-Pick (n=5)</b>              |                                      |
|                                      | <b>Range<br/>(price per pound)</b>              | <b>Average<br/>(price per pound)</b> | <b>Range<br/>(price per pound)</b> | <b>Average<br/>(price per pound)</b> |
|                                      | \$4.0 - \$6.3                                   | \$4.83                               | \$3.0 - \$7.53                     | \$5.11                               |
| <b>Comments</b>                      | Package volumes varied                          |                                      |                                    |                                      |
| <b>Swiss Chard<br/>(bagged)</b>      | <b>U-pick</b>                                   |                                      | <b>Pre-Pick (n=9)</b>              |                                      |
|                                      | <b>Range<br/>(price per unit)</b>               | <b>Average<br/>(price per unit)</b>  | <b>Range<br/>(price per unit)</b>  | <b>Average<br/>(price per unit)</b>  |
|                                      | Too few reported                                | -                                    | \$2.0 - \$3.5                      | \$2.88                               |
| <b>Comments</b>                      | Package volumes varied                          |                                      |                                    |                                      |
| <b>Turnip</b>                        | <b>U-pick</b>                                   |                                      | <b>Pre-Pick (n=3)</b>              |                                      |
|                                      | <b>Range<br/>(price per pound)</b>              | <b>Average<br/>(price per pound)</b> | <b>Range<br/>(price per pound)</b> | <b>Average<br/>(price per pound)</b> |
|                                      | Too few reported                                | -                                    | \$0.5 - \$1.0                      | \$0.73                               |
| <b>Comments</b>                      | -   |                                      |                                    |                                      |
| <b>Zucchini<br/>(per pound)</b>      | <b>U-pick</b>                                   |                                      | <b>Pre-Pick (n=5)</b>              |                                      |
|                                      | <b>Range<br/>(price per pound)</b>              | <b>Average<br/>(price per pound)</b> | <b>Range<br/>(price per pound)</b> | <b>Average<br/>(price per pound)</b> |
|                                      | Too few reported                                | -                                    | \$0.75 - \$2.5                     | \$1.67                               |
| <b>Comments</b>                      | -   |                                      |                                    |                                      |
| <b>Zucchini<br/>(per unit)</b>       | <b>U-pick</b>                                   |                                      | <b>Pre-Pick (n=8)</b>              |                                      |
|                                      | <b>Range<br/>(price per unit)</b>               | <b>Average<br/>(price per unit)</b>  | <b>Range<br/>(price per unit)</b>  | <b>Average<br/>(price per unit)</b>  |
|                                      | Too few reported                                | -                                    | \$0.5 - \$3.0                      | \$1.7                                |
| <b>Comments</b>                      | Size of unit varies                             |                                      |                                    |                                      |

## 2016 Growing Season – Prices Changes / Adjustments

For the 2016 growing season, the majority of producers appeared to be holding prices somewhat for the various crops they grow, with slight increases being typically due to factors such as increased input costs, etc. All price changes were very minor (typically around \$0.25 per pound). 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. Pre-picked fruit product sold at the Farmers' markets was typically sold in containers by volume. Sales of small volume containers or packaging resulted in a much higher price per pound (when compared to larger volumes). Per unit pricing of vegetables was likely due to simplicity of marketing and packaging, rather than having to deal with wide ranges of weights.

Most producers charge for pails / containers or provide a discount to customers that bring their own containers. A number of u-pick pricing was dependant on the number of pails picked/purchased and vegetable sale prices were usually dependant on the quantity purchased. Some producers charge for a delivery service if that is something that they provide. On-line orders/sales option is appearing on a number of producer websites; however the details of this were not delved into.

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. The cost of the various products compared to other market channels is difficult to compare and CSA share prices vary greatly, both in terms of price and the number of weeks that are available.

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.

A factsheet worth looking at: [Pricing Horticulture Products](#)



## Scale Insects

*Diaspididae* family (armored scales) or *Coccidae* family (soft scales); there are other scale families

**Crops Affected:** wide range of plants, including trees, shrubs and perennial plants, both deciduous and coniferous

### Life Cycle:

- Small sucking insects, which may also inject toxins during feeding
- The majority of stages and types of scales are small, oval to circular in shape, flattened, lack wings and a separate heads or any easily recognizable body part
  - Most scales that are seen are female
- Adult males are rarely observed; differ in appearance from females – size, shape, wings, antennae
  - Not all species have males
- Life stages include adults, eggs, and typically at least 2 nymphal instars/growth stages
- Mature adult females produce 50-200 eggs that may be hidden under their bodies or secreted externally under a protective cottony or waxy cover
- Eggs hatch (within 1-3 weeks) into the first nymphal stage, referred to as Crawlers, as they are mobile
  - Crawlers are typically yellow to orange in colour
  - Crawlers walk over the plant, are moved on the wind or transported by carriers (people, birds, etc.)
  - Settle down and begin feeding within a couple of days
- Settled nymphs do not typically move for the rest of their life cycle as they mature
  - Some species will move slightly or will move later in the season
- Scales tend to be 1/8 to 1/4 of an inch in diameter
- Scales can be found on lower leaf surfaces, stems, branches, bark, etc.

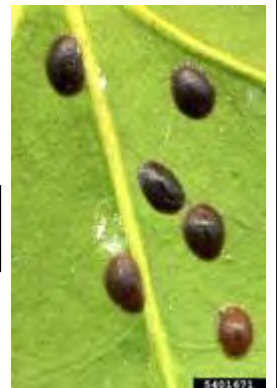


**San Jose scale**

Photo: United States National Collection of Scale Insects  
Photographs, USDA Agricultural Research Service, Bugwood.org

### Soft Scales (e.g. brown soft scale, European fruit lecanium, etc.)

- Considered tropical and would be more of a concern in a greenhouse
- Secrete honeydew, generally
- Typically overwinter as second stage nymphs
- May have tiny legs and antennae (all barely visible) and may move very very slowly after settling
- Typically 1/4 inch in diameter
- Don't produce a protective shield that can be separated from the insect body



**Brown soft scale**

Photo: Lesley Ingram, Bugwood.org

### Armored scales (e.g. San Jose scale, oystershell scale, etc.)

- Have a hard, waxy shield
  - Shield may have a slight bulge/bump/lump/knob and visible concentric rings
- Perhaps more of an issue in interior plantings (cooler than greenhouses)
- Do not generally secrete honeydew
- Typically overwinter as adult females and first stage nymphs – this is only the case in mild regions or protected areas
- Most stages lack obvious appendages and spend their entire lives in one location
  - Crawler stages and adult males may have appendages and move somewhat

### Symptoms:

- In situations with a very abundant population of scales, some plants may appear weakened and slow growing
- Plants may appear stressed, with yellowed leaves and premature leaf drop
- Some plant dieback may occur
- Dead leaves may stay on dead branches
- Sticky honeydew can be observed, as well as associated visible symptoms, such as black sooty mould and the presence of colonies of ants

### Monitoring:

- Check plants for scales or their symptoms (honeydew, sooty mold, ants)
- The use of tape traps or other methods can be used to determine populations and presence of crawlers in spring
- Confirm type of scale and whether scales are actually alive prior to considering controls

### Management:

- Typically not required for most plants that are healthy – even with heavy populations of scale, plants may not be unduly affected
  - Ensure plants are healthy and have sufficient moisture, fertilizer, etc.
- Physically remove (and destroy) infestations; wash off crawlers and honeydew
- Natural predators and controls can keep populations in check; introduced predators and parasites can be effective biological controls
- Chemical controls must be applied at the correct time (prior to scales settling) and/or must be systemic
  - Horticultural oils applied in the dormant season can be effective

# DISEASE OF THE MONTH

## 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

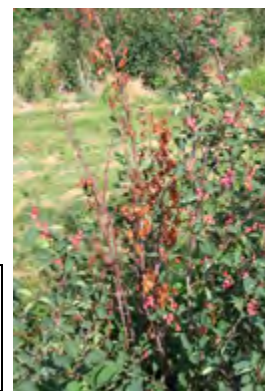
Saskatoon berry orchard –  
heavily infected with Fireblight  
Photo from Lloydminster area



### 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

Fireblight on Saskatoon berry  
– note – scorched tissues  
Photo by Robert Spencer



### 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
- There are essentially no chemical products registered for control of fire blight
- 2 biological products are registered for suppression of fire blight in Saskatoon berries, caneberries & non-bearing apples (nursery stock)