



February always seems to pass very, very quickly every year. Maybe it is because of the busy-ness, or maybe those 2-3 days really make a big difference, but either way, you blink and there is March. And so it is that another new edition of Hort Snacks is ready for you.

Late winter is a time for thinking and preparing, what with the tendency to stay inside a bit more. In this edition, you'll find a number of things for you to think about, whether it be training/networking events for you to participate in, or some technology to check out. I hope that you'll take advantage of it and prepare yourself for the spring rush that is not too far away.

Along the same train of thought, winter is a good time for strategizing (which is essentially deep thinking and planning). As you consider your respective industries to which you belong, consider the things that are blocking or slowing the growth of that industry (both yourself and the entire industry), as well as the opportunities for growth of the industry. Ask yourself, "What could be done to grow the industry?" and then feel free to share that with us, at your leisure. It is something that we are interested in and will be asking in the coming months.

Over the coming weeks, you can expect to receive special invitations to participate in the annual direct market fruit and vegetable price survey. If it is something that you can assist with, please do so, as the deeper the data set, the stronger the value to you and to your industry.

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

FEATURED WEBSITE

Explore Local Initiative website (*NEW LOOK!*)
 - Events, resources, and much, much more

www.explorelocal.ca

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THINGS TO DO / THINGS TO THINK ABOUT THIS MONTH

Strawberries

- Monitor crown health – plan course of action if damage is evident
- Plan plant pickup, field planting layout, planting labour, etc.

Raspberries

- Thinning of florican raspberries / removal of spent floricanes
- Mowing to ground and removal of last year's growth from primocane raspberries
- Remember – using Reemay row covers will increase earliness and yield of primocane raspberries
- Make first application of nitrogen at month's end (snow melt); 2nd application in Mid-May
 - Floricanes → 20-40 lbs actual N/acre for each application (total 40-80lbs N/acre yearly)
 - Primocanes → 35-60 lbs actual N/acre for each application (70-120 lbs N/acre yearly)
 - Adjust rate if banding

Saskatoon Berries

- Pruning / Thinning
 - dead, diseased, low-spreading branches before bud break
 - branches bigger greater than or equal to "Loonie" sized
- If regenerating or renovating entire orchard → Mow entire orchard
- In planning new fields which will eventually be mechanically harvested consider:
 - Lay of land, slope, flat
 - Rows in line with prevailing winds, shelterbelts
 - Don't mix varieties
 - Keep saskatoons and chokecherries separated
 - Row spacing for machine harvesting should be 5-6 m (16-20 feet)
 - Ensure sufficient headland area for turning harvesters around
 - Choice of varieties → choose varieties that ripen uniformly
 - Ease of irrigation set up, proximity to water, delivery
 - Grassing requirements

Vegetables

- Some vegetable transplants may be started this month, but only those that require 6 or more weeks to grow

Marketing – Generalities

- Take a look at all of your existing product market "outlets" for each crop
 - Determine if they are adequate
 - Make adjustments (if necessary)
 - Do this for projected markets as well (it never hurts to be prepared)
- Do a review of your pricing
 - Is it adequate?
 - Has anything changed to might allow price adjustments?

General

- If / when soil conditions permit it, carry out soil sampling (if not done in fall). Calcium, magnesium, sulphur, sodium are important components, in addition to main macronutrients (N, P, K)
- Do a last minute check up on all equipment that you are going to use this spring (if you haven't done this already)
- Depending on what sort of spring you are having, some field preparation activities may be possible
- Final planning of planting / packing layout
- Prepare rough summer schedule for planting, spraying, irrigation, etc.
- Go and visit another grower

Pest Monitoring / Management

- Brush up on disease and insect pest identification
- Saskatoon berries
 - If plants progress rapidly, 1st Decis application may be required at month's end (green tip to bud elongation)

NOTE: Daylight Saving Time starts the 2nd Sunday in March so ... SPRING FORWARD

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.

Upcoming Conferences / Workshops

March 2017

- **Strawberry Production for New Growers**
Mar 1, 2017 – Pomeroy Olds – Olds, AB
Call 1-800-387-6030 to register / [Coming Event listing](#)
- **Alberta Farm Fresh School – From Farm to Market**
Mar 2-3, 2017 – Pomeroy Olds – Olds, AB
www.albertafarmfresh.com
- **Potato Post-Harvest Management for Fresh/Seed Potatoes**
Mar 7, 8, 9, 2017 – [Coast Lethbridge](#) / [Lacombe Memorial Centre](#) / [Hazel Bluff Community Hall \(Westlock\)](#)
Call 1-800-387-6030 to register
- **Adding it Up: Getting a Handle on Your Greenhouse Financials**
Mar 8-9, 2017 – Red Hat Co-op - Redcliff, AB
Call 1-800-387-6030 to register / [Coming Events listing](#)
- **Problem Pests of Horticulture Crops**
Mar 14, 15, 16, 2017 – [Airdrie Ag Centre](#) / [Lacombe Memorial Centre](#) / [Strathcona Community Centre – Sherwood Park, AB](#)
Call 1-800-387-6030 to register
- **2017 Manitoba Direct Farm Marketing Conference**
Mar 10-11, 2017 – Access Event Centre – Morden, MB
www.directfarmmarketing.com
- **2017 Canadian Horticultural Council (CHC) Annual Meeting – “Sustainability = Balance”**
Mar 14-16, 2017 – Fairmont Winnipeg – Winnipeg, MB
www.hortcouncil.ca/
- **Canada Blooms 2017**
Mar 10-19, 2017 – Enercare Centre – Toronto, ON
www.canadablooms.com
- **Hort Snacks-to-Go Webinar – Biocontrol Update**
Mar 20, 2017 – [Registration link](#)

April 2017

No events listed at this time

May 2017

- **Canadian Produce Marketing Association (CPMA) Conference & Trade Show**
May 9-11, 2017 – Metro Toronto Convention Centre – Toronto, ON
<http://convention.cpma.ca/>

MENTAL SNACKTIME – Initiative

“Without initiative, leaders are simply workers in leadership positions.” – Bo Bennett

“If one has fear, there can be no initiative in the creative sense of the word. To have initiative in this sense is to do something original - to do it spontaneously, naturally, without being guided, forced, controlled. It is to do something which you love to do.” – Jiddu Krishnamurti

“You’ve got to take the initiative and play your game. In a decisive set, confidence is the difference.” – Chris Evert

“Initiative is doing the right thing without being told.” – Victor Hugo

“The key is taking responsibility and initiative, deciding what your life is about and prioritizing your life around the most important things.” – Stephen Covey

“The important thing is to concentrate upon what you can do - by yourself, upon your own initiative.” – Harry Browne

In the News / Articles Worth Reviewing

- [How to be a successful pest: lessons from the green peach aphid](#) – Earlham Institute
- [Storage 101: Why Humidity Matters](#) – SpudSmart article
- [Helping Decisionmakers Understand the True Cost of Food](#) – Foodtank article
- [Can a commercial aquaponics greenhouse be profitable?](#) – HortiDaily article
- [Are Drones the Future of Pollination?](#) – Growing Produce article
- [Veggie consumption trends and opportunities](#) – HortiDaily article

Google Groups – HORT SNACKS FORUM

Google has all sorts of different features and tools. One that I ran across a couple of years ago is [Google Groups](#). You can essentially create and join common interest groups or discussion forums and share information and ideas back and forth. You can alter the settings to get forum updates all the time, daily, weekly or whatever.

A couple of years ago, we created a **HortSnacks Forum**, tied to this newsletter. Anyone who is a member of the forum can submit posts (questions, comments, etc.) via Google or via email. To submit a question (or post), either log into the group using a Google account or simply send an email to hortsacks-forum@googlegroups.com and it'll send it to all members. You can reply from email or from Google. You have to be a member of the group to submit questions, but becoming a member is quick and easy.

To subscribe to the group, send an email from your email account to subscribe+hotsacks-forum@googlegroups.com

Try it out today!



HortSnacks-to-Go: 2016/2017 Webinar Series



To register call **Dustin Morton**
at 780-679-1314 or email at
dustin.morton@gov.ab.ca

October 17 (3 PM MST) –

Barb Stefanyshyn-Cote, Black Fox Farm & Distillery

Barb and her family operate Black Fox Farm and Distillery, a cut flower farm and distillery located just outside Saskatoon, SK. Barb discusses how they got started, the trials and tribulations of cut flowers, and what they've learned along the way.

November 21 (3 PM MST) –

Amanda Thomsen, Kiss My Aster

Amanda is the thrift shopping, Ryan Gosling loving punk behind the gardening blog 'Kiss My Aster'. This renowned author, speaker and garden diva will be discussing ways of making your garden centre Kiss My Aster-proof to ensure your clients come back year after year.

December 12 (3 PM MST) –

Adithya Ramachandran, Kaleidoscope Gardens

Adithya and Jennifer own and operate Kaleidoscope Gardens near Dundurn, SK. This small farm has invested heavily into season extension and will be discussing how they've used it to open up their market to new crops and extend the season of traditional crops.

January 16 (3 PM MST) –

Rick Peters, Agriculture and Agri-Food Canada (AAFC)

Rick is a research scientist studying fungal diseases of carrots and other vegetable crops in Prince Edward Island. He will be looking at the ins and out of integrated pest management in carrots from seed to harvest and everything in between.

January 30 (3 PM MST) –

Rebecca Shortt, Ontario Ministry of Agriculture, Food, and Rural Affairs (OMAF)

An expert in irrigation management, Rebecca will discuss irrigation scheduling with drip irrigation and how to get the most bang for your buck from your irrigation system.

February 27 (3 PM MST) –

Bob Purton, Kangro Gardening

Kangro Gardening is a five acre market garden just outside Yorkton, SK. Bob's transition to hydroponic lettuce production was not without challenges and he'll discuss his approach as well as his successes and failures.

March 20 (3 PM MST) –

Suzanne Wainwright-Evans, Buglady Consulting

Suzanne has been working with biological control agents for nearly 20 years and is well known in the greenhouse industry. She'll be discussing some recent trends she's seen in greenhouse pest control as well as perennial issues everybody deals with in their operations.

Potato Post-Harvest Management



This workshop will provide fresh and seed potato growers with in-depth information on potato storage design and management, as well as pre-harvest, post-harvest, in-storage and post-storage disease management information. This will increase their capacity for prolonged quality potato storage, as well as reduce losses that occur in storage or in the post-harvest process.

March 7, 2017 – Coast Lethbridge
Hotel & Conference Centre – 526 Mayor
Magrath Drive South – Lethbridge, AB

March 8, 2017 – Lacombe
Memorial Centre – 5214 50 Avenue –
Lacombe, AB

March 9, 2017 – Hazel Bluff
Community Hall (9 km west of Westlock on
HWY 18) – Westlock, AB

8 a.m. registration
Sessions run 8:45 a.m. to 4 p.m.

Register: 1-800-387-6030
Registration deadline: February 28, 2017
Limit of 2 registrants per farm operation

Cost: \$15/person (plus GST)

Lunch and snacks provided

Each farm operation will receive a binder of
resource information.

Potato Post-harvest Management

Agenda

8:00 – 8:45am – Registration

8:45 – 9:00am – Welcome and Introductions

9:00 – 9:45am – Potato Storage Structures – Paul Kok

9:45 – 10:05am COFFEE BREAK

10:05 – 11:05am – Optimizing the Storage Environment for Potatoes – Paul Kok

11:05 – 11:20am – Questions on Potato Storages and Storage Management

11:20 – 12:00pm – Tuber Physiology and Physiological Diseases of Potatoes – Rob Spencer

12 – 12:45pm LUNCH

12:45 – 1:15pm – Managing Bacterial and Viral Diseases of Potatoes – Dr. Mike Harding

1:15 – 1:30pm – Roles and Benefits of the Potato Growers of Alberta – Deb Hart

1:30 – 2:15 pm – Managing Fungal Diseases and Novel New Diseases of Concern to the Potato Industry – Dr. Mike Harding

2:15 – 2:30pm – Tips for Scouting and Diagnosing Post-Harvest Diseases of Potatoes– Dr. Ron Howard

2:30 – 2:45pm COFFEE BREAK

2:45 – 3:15pm – On-Farm Biosecurity for Potato Producers – Dr. Ron Howard

3:15 – 3:30pm – Information Resources and Professional Assistance on Post-Harvest Storage and Disease Management for Potato Growers – Rob Spencer

3:30 – 4:00pm – Storage Potential of Old and New Potato Varieties – Dr. Michele Konschuh

Workshop wraps up at 4pm

Adding it Up: Getting a Handle on Your Greenhouse Financials



Cobra GREEN is a financial software developed by Alberta Agriculture to help greenhouse vegetable growers better understand the numbers behind their business. In this workshop, growers will learn how to use this software to help make their business more profitable and better position themselves for lending opportunities.

February 15 and 16, 2017

Agriculture Building

5030 – 50 Street, Lacombe, AB

Registration Deadline: February 10

March 8 and 9, 2017

Red Hat Co-op

809 Broadway Ave NE, Redcliff, AB

Registration Deadline: March 3

Cost: \$10/person + GST (includes lunch)

To Register: 1-800-387-6030

For more information: Dustin Morton, Commercial Horticulture Specialist
780-679-1314

Problem Pests in Horticulture Crops



This workshop will provide rural landowners, market gardeners, garden centre owners and those that work to support these groups with information on the identification and management of a range of current problem pests (diseases and insect pests) that affect fruit, vegetable, potato and tree/shrub crops in Alberta. Participants will build their knowledge and capacity to pass on this information to others.

March 14, 2017 – Airdrie
Agriculture Centre – 97 East Lake Ramp NE
– Airdrie, AB

March 15, 2017 – Lacombe
Memorial Centre – 5214 50 Avenue –
Lacombe, AB

March 16, 2017 – Strathcona
County Community Centre – 401 Festival
Lane – Sherwood Park, AB

8 a.m. registration
Sessions run 8:45 a.m. to 4:30 p.m.

Register: 1-800-387-6030

Registration deadline: March 6, 2017

Cost = \$10/person (plus GST)

Lunch and snacks provided

Problem Pests of Horticulture Crops

Agenda

8:00 – 8:30am – Registration

8:30 – 8:40am – Welcome and Introductions – Write down issues that they are encountering

8:40 – 9:10am – Symptoms and Signs – Walking through the Diagnostic Investigative Process

9:15 – 10:15am – Pests of Fruit Crops

10:15 – 10:40am COFFEE BREAK

10:45am – 12:00pm – Pests of Potato Crops

12 – 12:40pm LUNCH

12:45 – 2:15pm – Pests of Tree/Shrub Crops

2:15 – 2:35pm COFFEE BREAK

2:35 – 3:35pm – Pests of Vegetable Crops

3:35 – 4:00pm – Separating Fact from Fiction for Management Tools + Possible Resources

4:00 – 4:30pm – General Questions

Workshop wraps up at 4:30pm

Cool Tools from GLEXPO 2016 Trade Show

Trade shows are sort of like an epic window-shopping experience, where you go and check out new and interesting things, but don't really have a huge amount of pressure to immediately spend all your money on the things that you see. You can gather a bit more information, have things explained to you and you can go home to sleep on it. At the most recent Great Lakes Expo trade show in Michigan, I saw a number of things that were interesting, which I thought might be worth sharing.

Harvest or Production Assistance Machinery

The specific purpose of these pieces of equipment can vary quite a bit, but generally, they are meant to allow your workers to be more efficient in completing some tedious but necessary task in the field, in a more comfortable and less draining manner. I've seen a wide range of these over the years, ranging from drag sleds, mounted ironing boards and just plain boards carried behind a tractor. These examples represent a bit of a step up, both in quality and comfort, as well as in scale.



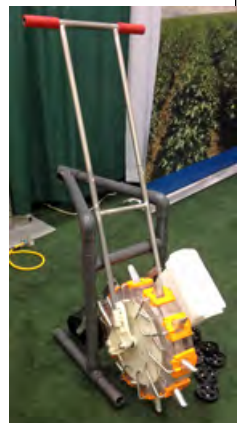
Bird deterrent – Fly Away Birdies Humming Line (www.flyawaybirdies.com)

There are lots of different ways to scare away birds, but there are a couple of key methods. The first is to play upon their various fear mechanisms and the second is to make sure that you mix things up (over and over). This “humming wire” was really simple, but could be a useful tool in the bird-scaring toolbox.



Seeders / Planters

There are many, many, many different seeders out there, each with similar and unique qualities that you might or might not value for what you are trying to accomplish. This particular unit seemed different to me, mainly in that it seemed pretty robust and had the deep scoops on the wheel, which would certainly get the seed planted into the ground, likely in a range of conditions. You might even get it to work in mulch, but don't quote me on that. I didn't see how flexible or adaptable it was, but one could assume that it could be adjusted somewhat to meet your needs.



The potato planter is a mini version that can be used for small scale situations.



Weeding implements

Similar to seeders, there are many different types of weeders out there. This one was interesting in its retro appearance and simplicity. I'm not saying that I'd use it, but strap a kid (erm... employee) to it and you'd be cooking with gas.

Photos by Robert Spencer

Cool Tools from GLEXPO 2016 Trade Show – continued

Spray Equipment

Shielded or protected pesticide applications are more common these days, in the interest of reducing non-target incidents. There is also lots of equipment and devices for applying pesticides to different crops, such as orchards or whatever. The Dr. Octopus-style model was very interesting, to say the least.



Ultra Low Volume (ULV) Spray Equipment

I've been seeing more of this sort of equipment over the last number of years, as peoples' interest in spot spraying or precision targeted applications of pesticides (usually herbicides) has increased. This technology works on the basic premise that they apply the product in virtually no water volume (I think). These examples represent improvements to previous versions, with chunkier tires, sturdier frames, adjustable handle bar columns (for people of different heights), as well as spray guards/covers that spring back to hug or go around things. Overall, these look like good options, with a range of choices for different crop scenarios.



Information delivery

Producers are considered to be fairly trustworthy in terms of the information that they provide, with the majority of audiences. There are many opportunities for you to provide information on your industry(ies) to the public and your customers. This was a nice example of information that was being provided by one industry organisation.



Photos by Robert Spencer

Time Management – Prioritization

There is only so much time in any given day, week, month or year to get necessary work done. Given that we can't realistically work every minute of every day of every week, our useable time is actually fairly small. When you start shaving off pieces of time for all of the necessary things like eating, sleeping, answering the call(s) of nature, that total time block gets a lot smaller. If you start trying to chopping off blocks of time for things like sick time, vacations or weekends, it gets even smaller. Try to add in discretionary activity time, like time with family and friends, volunteering and, heaven forbid it, fun, it becomes very difficult.

At the end of the day, if you want to “be effective” and “get everything done”, you are going to have to make sacrifices and prioritize your time. There are days when some things are going to have to be left for another day, simply because they CAN actually wait, whereas other task MUST be done. It can be challenging to cut things from the To Do List.

One of the epic leadership gurus of our day was Stephen R. Covey. While I've never managed to make the time to read all of his work, some of the principles that he taught have percolated down to me through people around me. One of his points relates to time management and priority-setting and has stuck with me.

	URGENT	NOT URGENT
IMPORTANT	Q1 – Urgent & Important: <i>Immediate & important deadlines</i>	Q2 – Not Urgent but Important: <i>Long-term strategizing & development</i>
NOT IMPORTANT	Q3 – Urgent but Not Important: <i>Time pressured distractions</i>	Q4 – Not Urgent & Not Important: <i>Of little value – Breaks, etc.</i>

It all comes down to determining how urgent a task is and then score how important it is to you. I believe that the idea is to focus on the truly critical tasks (those that fall within Quadrant 1) before moving on to other quadrants. Thankfully, you can apply your own set of subjective criteria to the mix. In some cases, other peoples' needs might drive up the priority level somewhat, but you are still in control.

You should make sure to be honest with both the urgency and the importance rating that you assign each task. It is easy to superficially say that everything you have to do is super urgent and super critical. Be realistic. That is not the case.

Personally, I also think that you should sometimes slot in time blocks for important things that aren't urgent, as this allows you to keep your overall course correct. If you spend all of your time with your head down, going full speed ahead, you will eventually crash. Slowing down the pace once in a while lets your head come up to take a long distance look ahead, make some slight shifts and then you can get back to work.

When I look at the quadrants, I think that you should spend little time on tasks that fall within the Urgent/Not Important area, as those will not likely yield a lot of value and benefits. And while 4th quadrant activities might be of little value in the overall scheme of things, they can take the edge off, and represent giving a bit back to you. So, try and balance out your To Do List plate. If we follow the alimentary suggestion of having at least half your plate as vegetables (and vegetables are important and urgent), you should also balance out the meat and potatoes and have a nice dessert. In the end, you'll find that you might not get everything done, but you'll feel satisfied that you got done what needed doing and didn't go insane doing it.

Q: What process or steps do you follow to prepare your operation for the "spring rush"?

A: In my experience, most people seem to make a plan based on their past experiences. Starting with things that can be done in advance is a great step, getting steps out of the way when things are slow, etc. In some cases, you are forced to prepare based on suppliers' timelines and deadlines. But ultimately, a good technique would be to calendar it out in some way, so as to try and manage the chaos in advance, prior to it actually happening. It isn't easy. Good luck. – Rob Spencer (AAF)

Next Month's ? → [Do you have a method for making current season plans that applies past experiences? How do you avoid past mistakes?](#)

Alberta's Elm Pruning Ban Starts April 1st

To help keep Alberta Dutch elm disease (DED) free, there is a provincial elm pruning ban in place between April 1st and September 30th. It is important to properly dispose of all pruned elm wood by burning, burying or chipping by March 31st. It is illegal to prune elm trees during the pruning ban and to store elm firewood.

Elm bark beetles, responsible for spreading the deadly DED fungus, feed on healthy elms and breed in dead and dying elm trees. If elm trees are pruned during the pruning ban period, these beetles, which are active at this time, can be attracted to the scent of the fresh wound and possibly infect your otherwise healthy elm with DED. Once an elm tree is infected with DED it will die within that year.

Having your tree pruned properly is important. Many trees are killed or ruined annually from improper pruning. Pruning like any other skill requires knowledge and should be done by an International Society of Arboriculture (ISA) Certified Arborist who can determine what type of pruning is necessary to maintain or improve the health, appearance and safety of your trees.

Topping or removing an excessive amount of live wood is not recommended on any variety of trees and will weaken the tree's structure. For more information on pruning, ISA Certified Arborists, and DED visit either <http://www.isaprairie.com/> or www.stopped.org

Berry & Vegetable Price Survey – Head's up!

Having price information is valuable for people of all experience levels, to use as a reference against your own pricing and to compare against when calculating your cost of production and setting your prices.

Each year, I put a call out to producers, asking them to share what they were charging for their fruit and vegetable crops the past season (both u-pick and pre-pick for FM), as well as any price changes that they anticipate for the coming season. From that, I assemble average prices (as well as the range) to share with the industry. It is coming up on that time of year again, as experience has shown that earlier is better for everyone involved.

For those readers that get this newsletter electronically, I will send out the formal request in a separate, direct email. I hope to publish the summary in the April 2017 edition of Hort Snacks (May at the latest). For those that get this by hard copy, please feel free to send in your information by mail, fax or give me a call.

The following is an outline of the type of information I need.

Crop	Upick price	Pre-pick price	Farmers Market Price	Unit of measure for each market (e.g. per pound; per head/bunch)
Examples of Crops wanted	Fruit – strawberries, raspberries, Saskatoon berries, black currant, sour cherries, Haskap, chokecherries, other fruit; Vegetables – beets, carrots, radishes, rutabagas/turnips, corn, cabbage, broccoli, cauliflower, Brussels sprouts, kohlrabi, kale, spinach, lettuce (head and/or leaf), cucumbers (pickling, slicing), potatoes (baby, regular), rhubarb, peas, snap peas, snow peas, beans, tomatoes, onions, garlic, Swiss chard, winter squash, zucchini, pumpkins, etc.			

Cutworms (Red-backed, Army, Variegated, etc.)

Range of species

Crops Affected: Wide host range – most vegetables including tomato, eggplant, peppers, asparagus (occasionally), carrots, cucurbits (occasionally), lettuce, corn, peas, beans, potatoes, etc.

Life Cycle:

- Adults are moths – range in size
- Moths lay eggs in the soil in weedy areas in late summer and into fall – overwinter as eggs or as larvae (depends on species)
- Eggs hatch and larvae emerge in spring when soils warm up
- Pest life stage is the larvae
 - Solitary, nocturnal feeders – active at night
 - Typically stay near the soil surface during the day, near plants (subterranean)
 - Larvae curl in distinctive C-shape when disturbed
 - Larvae feed for several weeks at or near the base of plants – may reach 5 cm in length (depending on species)
- Eggs laying and survival is reduced by cooler and wetter weather; warm and dry conditions favour development

Symptoms:

- Most often affect the seedlings of plants
- Plants may have cut stems, petioles (near the soil surface) or stalks may have feeding damage
- Numerous plants may be destroyed in a single night by a few larvae
- Larvae curl in distinctive C-shape when disturbed – found during scouting (night time or by digging)
- Aboveground feeding by some species may result in holes in foliage or fruit

Monitoring:

- Regularly check for damage, particularly in the spring
- Search in the soil for larvae (during the day) or scout plants in the evening
- In new fields or early in the season, scout the field edges along rough areas or in weedy areas

Management:

- Monitor regularly for evidence of pest – apply registered controls when necessary
- Apply controls during the late evening to ensure contact with larvae
 - Spot or area spraying may be effective
- Replanting / reseeding crops may be necessary
- Keep field and headlands free from weeds, as much as possible



Red-backed cutworm - larvae

DISEASE OF THE MONTH

Downy Mildew

Range of species (*Perenospora parasitica*, *P. farinose* f.sp. *spinaciae*, *P. rumicis*, *P. viciae*, *P. destructor*, *Bremia lactucae*) – dependant on host crop

Crops Affected: beets, spinach, Cole crops, radish, rutabaga/turnip, lettuce, rhubarb, onion, garlic, peas

Disease Cycle:

- Affects a wide host range; species are specific to host; may be some specificity within host groups
- Development is favoured by cool, moist conditions; temperatures between 10-15°C and conditions with dew, drizzle or heavy fog
- Sporulation occurs within 4-8 days, depending on species and environmental conditions
- Spores spread by water splash or wind
- Disease may stay in a dormant or latent state for a period of time
- Overwinter / survival with oospores in soil, debris, plant parts, etc. – requires living host to grow and multiply

Symptoms:

- Symptoms can occur at any growth stage
- Initial symptoms include small angular, pale yellow / yellow areas on the upper leaf surface and fluffy, white or grey, patchy mycelial mat on the under surface
 - Lesions enlarge and turn tan and papery
- Systemic invasion can result in yellowish, and then greyish-black, necrotic tissues
- Some crops (particularly root crops) can get an irregular, internal discolouration projecting downwards from the crown or soil line
- Onions (and other bulb crops) have a greyish velvety growth on leaves that may appear purplish when full of spores; leaves may turn pale and yellow and then die
- Spores may be produced on the lower leaf surface

Management:

- Regular rotations out of specific host crops can reduce inoculum levels significantly
- Plant into fields with good soil and air drainage
- Bury debris and crop residues deeply to accelerate breakdown; dispose of cull piles quickly
- Use disease-free planting material and seeds
- Keep fields free from weeds
- Apply protective fungicide sprays at appropriate times (typically early)
- Resistant cultivars may be available
- Ensure plants are free from stress (nutrient, moisture, etc.)



Downy mildew – Photo by Doon Pauly