



It is hard not to lose that almost-genetically-ingrained memory that spring is sometime slow to come to Alberta, especially when the weather is nice, everything is dusty and things look like they might actually be thinking about growing. I suppose the periodic dumps of snow helps, but for now, it sure feels like spring.

With spring comes planning, preparing and thinking, as well as a whole pile of work. Free time becomes a luxury, but the freshness of the air helps to keep us going. Lock that into your memory right now, since you'll need it when you are tired.

Here is another edition of Hort Snacks for your reading pleasure. It has a few new things to tempt your thought processes, and some other things to fall back on. You'll note that the price survey isn't complete, but will be sent to you in the next couple of weeks and will be published in the May edition. Better done right than done fast, I suppose.

As we head into the new fiscal year, we have lots of great things planned, throughout summer, fall and winter. Keep your eyes open for field days, events to bring new people in (which you can share to those you know), webinars, etc. As always if you want to give us a call or email with comments, suggestions, etc. we are always open to them. Thanks.

Rob Spencer/Dustin Morton, Commercial Horticulture Specialists
 Alberta Ag-Info Centre, Alberta Agriculture and Rural Development

FEATURED WEBSITES

Cornell's Interactive Plant Manager
 A tool to help you diagnose woody plant
 pests

http://www.nysipm.cornell.edu/aes_ornamental.asp

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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 3rd 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
- 2nd 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 3rd 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

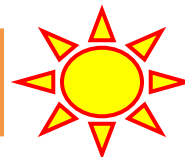
- Begin scouting for insect pests and diseases
- Strawberries
 - Start scouting for strawberry clipper weevil, when temperatures exceed 18°C
- Raspberries
 - Application of lime sulphur fungicide (22%) for spur/cane blight control
- Saskatoon berries
 - Application of Decis at green tip to bud elongation 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 1st to September 30th www.stoppeded.org



Upcoming Conferences / Workshops

April 2015

- Canadian Produce Marketing Association (CPMA) Conference & Trade Show
April 15-17, 2015 – Palais des congrès de Montreal – Montreal, QC
<http://convention.cpma.ca/>

May 2015

- 12th International Conference of the European Industrial Hemp Association (EIHA)
May 20-21, 2015 – Rheinform – Wesseling/Cologne, Germany
<http://www.eiha-conference.org/>

June 2015

- University of Saskatchewan Plant Sale Day**
June 5, 2015 – Horticulture Field Lab – Saskatoon, SK
www.fruit.usask.ca/extension.html
- Haskap Day 2015**
June 26, 2015 – Horticulture Field Lab – Saskatoon, SK
www.fruit.usask.ca/extension.html
- Greenhouse Canada Grower Day 2015**
June 22, 2015 – Holiday Inn – St. Catharines, ON
www.greenhousecanada.com/grower-day

CleanFARMS 2015

CleanFARMS will be running obsolete pesticide & livestock medication collections in October of 2015 as follow:

- Southern Alberta (Red Deer to border)
- Northern Saskatchewan (Davidson north)

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 for more information.

NOTE: Can you please re-distribute this note to all your organizations and members so it gets as wide a distribution as possible?
Thanks!



Q: What key factors influence the prices of your product(s)?

A: My costs plus the number of customers that I have affect my decision on price

A: labor and overhead

A: We contact other U picks and try to stay competitive with them. We increased "we pick" and left "you pick" the same as previous year

A: Price setting is complex and should include things like your costs of production, your market (can vary depending on the population demographics, etc.), competition, industry average, etc. Pricing can also vary based on packaging, volume/weight/quantity and time of season (supply/demand variables). – Rob Spencer (AARD)

Next Month's ? → [What new crop or product are you most excited about for this season?](#)

Mental Snacktime – Influence

"Think twice before you speak, because your words and influence will plant the seed of either success or failure in the mind of another." – Napoleon Hill

"The people who influence you are the people who believe in you." – Henry Drummond

"Blessed is the influence of one true, loving human soul on another." – George Eliot

"The key to successful leadership today is influence, not authority." – Ken Blanchard

"With ideas it is like with dizzy heights you climb: At first they cause you discomfort and you are anxious to get down, distrustful of your own powers; but soon the remoteness of the turmoil of life and the inspiring influence of the altitude calm your blood; your step gets firm and sure and you begin to look - for dizzier heights." – Nikola Tesla

AB Direct Market Fruit/Veg Pricing Survey 2015

- Still need additional data
- Will be published separately (sent electronically to mailing list)
- Then in Hort Snacks May 2015 edition

How are biocontrol agents like James Bond?

By Dustin Morton

As the public grows more concerned about chemical use, many growers struggle with how to keep their product saleable while using fewer pesticides. So growers are turning to a new kind of undercover operative to deal with crop pests.

Biological controls or biocontrol agents attack and “neutralize” or reduce pests in a cropping system and can be used to manage insects as well as weeds and diseases. These increasingly popular agents are just one aspect of a good Integrated Pest Management (IPM) program.

Beneficial Control Agents (BCAs) or “natural enemies” include beneficial bacteria, fungi, nematodes and insects that feed on harmful organisms. BCAs are often introduced into an area like a greenhouse or field, or can be native natural enemies that are encouraged to proliferate or colonize, as in many field situations.

In the University of California’s best-selling resource “Natural Enemies Handbook”, biocontrol agents control pests through five main methods:

- predation
- parasitism
- herbivory (consuming plant material)
- competition
- antibiosis (antagonistic association)

Most growers are familiar with predation as a control method. Predation can mean one insect feeding on another, such as ladybugs on aphids, but can also include mites and flatworms feeding on nematodes or soil dwelling animals dining on fungi. BCAs that control through predation might be specific (they only control a certain life-stage or certain species) or they may be more generalist like a true ‘00 agent’ and eat a number of different species.

More specialized than predation, parasitism involves an agent living in or feeding on a pest. Parasites however, should not be confused with parasitoids which tend to be more common in biocontrol. This differentiation is important as parasitoids will actually control the pest by eventually killing it, as opposed to parasites which may just slow it down. Common examples of these agents are parasitic wasps or fungal pathogens.

With herbivory, “assassin” insects or diseases are imported from a problematic weed’s native range to deal with a weed problem. While these agents are not as common in Canada, there are successes, as with the black dot spurge beetle controlling leafy spurge or the root-crown weevil on knapweed.

Producers are familiar with the concept of competition, as in crowding out weeds in a field using row spacing, stand density, etc. Biocontrol agents can also be used as competition and could include using *Pseudomonas* bacteria to block potential entry ways for fire blight in fruit crops or *Bacillus subtilis* to outcompete powdery mildew. While these micro-organisms do not attack or infect the pest itself, the presence of these “bodyguards” may be enough to deter other more problematic species. Alternatively, these agents might infect the plant of concern, inducing a defense response which allows the plant to fend off an attack from another more dangerous pathogen or insect.

Antibiosis, at its most basic, is when a BCA runs interference with a pest. Similar to 007's cyanide capsule, the pest might ingest a BCA, or in some cases become infected by, which then affects activities the pest needs to survive. Perhaps the best known example is *Bacillus thuringiensis*, or Bt, which paralyzes the mid-gut when ingested by the larvae of Lepidopteran insects such as cabbage worm or European corn borer. As the biocontrol agent continues to break down, it also produces a toxin which will eventually kill the larvae but is safe for humans, animals and other insects. Given how targeted these agents are, much research is being done in this area because of its potential to reduce casualties in harmless bystanders (i.e. other beneficial insects).

When using a biopesticide such as *Bt* or *Pseudomonas*, it is important to remember these agents are registered with the PMRA, Health Canada's pesticide version of MI-6. Due care and attention should be paid to ALL labels for information on application and pre-harvest interval.

Given the options available, growers need to consider all these important, not-so-secret, agents as part of their IPM program. By incorporating these into their cropping systems, growers can reap the benefits of a diversified pest management plan and truly give these agents a license to kill.

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 Rural Development 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 Rural Development's website 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 31st, 2015** and signatures of both employee and employer must be included.

ARD Employment Programs

Alberta Farm Fresh School 2015 – List of Topics and Speakers with Presentations

Day 1

- Collaborating With Your Neighbour – Judy Kolk (Kayben Farms) & Cherie Andrews (Chinook Honey)
- [Business Start Up & Planning](#) – (119KB) – Kathy Bosse – AARD
- [Understanding Soil Biology – A Tour Down the Worm Hole](#) – “Celebrating Soil” - (87KB) – Dr. M. Jill Clapperton – Rhizoterra Inc.
- [Understanding the Regulations in Direct Market Meat](#) - (316KB) – Mark Miller – AARD
- [Strawberry Production](#) – (1652KB) – Grace Fedak – Serviceberry Farms
- [Practices for Augmenting and Enhancing Soil Biology](#) – “Celebrating Soil” – (87KB) – Dr. M. Jill Clapperton – Rhizoterra Inc.
- [Food, Farming & the Marketing Fringe](#) – (1214KB) – Colleen Biggs – TK Ranch
- [Growing Forward 2 \(GF2\) Program Options and Overview](#) – (228KB) – GF2 People – AARD
- [Organic Certification Steps](#) – (639KB) - Keri Sharpe – AARD
- [Using Plastic Mulch & Low Tunnels to Increase Vegetable Production](#) – (2761KB) – Dr. Doug Waterer – U of Saskatchewan
- Feed Rationing for Small Scale Livestock Operations – Barry Yaremicio – AARD
- [Saskatoon Berry Production](#) – (317KB) – Marsha Gelowitz – Solstice Berry Farm
- [Raspberry Production](#) – (867KB) – Rob Spencer – AARD
- [Weed Seeds, Tools and Herbicide Families: Integrated Weed Management in Vegetable Crops](#) – (375KB) – Rob Spencer – AARD
- [Pasture Management – Integrated Livestock Grazing and Pasture Management](#) – “Celebrating Soil” – (87KB) – Dr. M. Jill Clapperton – Rhizoterra Inc
- [Soil Testing & Fertility Management for Vegetables](#) – (1218KB) - Dr. Doug Waterer – U of Saskatchewan

Day 2

- [The Start to Finish Experience of Value-Adding](#) – (208KB) – Marsha Gelowitz – Solstice Berry Farm
- [Framing the Farm](#) – (937KB) – How to Work With the Media & Get Them to Work For You – Cait Wills
- [Growing Novel Products and Creating Unique Connections with Restaurants](#) – (306KB) – Deb Krause – Vesta Gardens
- [Food Safety & CanadaGAP on your farm: First Steps and Processes for Implementation](#) – (297KB) – Christine Anderson / Pramod Kumar – AARD
- [The Skinny on Productivity on Your Farm – Potential Ways for Achieving Efficiency](#) – (9116KB) – Jody Marshall – Sustainable Results Group
- [The Basics of Diagnostics](#) – (3564KB) – Dustin Morton – AARD
- Setting Up a Drip Irrigation System – Kees van Beek – Southern Drip Irrigation
- [Alberta Pest Monitoring Activities – Diseases & Pests of Concern in Fruits/Vegetables](#) – (1258KB) – Dr. Jim Broatch / Rob Spencer – AARD
- [Fruit to Nuts – A discussion of New Prairie Fruit Releases](#) (Sour Cherries, Haskap, Hazelnuts, etc.) – (2178KB) – Dr. Bob Bors – U of Saskatchewan
- [Biological Control Options for Fruit & Vegetable Crops](#) – (588KB) – Rob Spencer – AARD

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.

Cabbage Maggots

INSECT OF THE MONTH

A.K.A. Root maggots, Cabbage root maggots

Delia radicum

Crops Affected:

Cruciferous crops (cabbage, cauliflower, Brussels sprouts, broccoli, radish, rutabaga, turnip, and other cole crops); canola, mustard, cruciferous weeds

Life Cycle:

- 2-3 generations per season, depending on the year and the location
- Adults are flies
- Larvae are legless
- Flies emerge in spring from overwintered pupae (timing depends on the weather and soil conditions)
- Fly emergence in the Prairies occurs around the time when Saskatoon berries and Pin cherries start to bloom
- Peak adult activity is generally from mid to late June to after mid-July
- Eggs are laid in the soil near host plants
- Survival of eggs and new larvae is highest during cool, moist weather
- Larvae feed on fine root hairs of the plant and eventually burrow into the tap root

Symptoms:

- Larvae feed on host plant roots and burrow into the tap root
- Root damage is usually most severe during cool, wet weather
- Severe infestations will destroy or stunt young plants
- Growth, yield and quality will be reduced on larger plants
- Severity of damage is influenced by weather (temperature and moisture)

Monitoring:

- Yellow-pan water traps can be used to monitor seasonal activity but they are unreliable indicators of overall infestation

Management:

- Application of registered insecticides at appropriate times (e.g. at or just after planting) to **protect** early and late crops, and all root crucifers (e.g. radish, rutabaga/turnip); subsequent treatments may be required
- Delayed plantings (approximately mid-June) may reduce incidence and severity, as plants and roots will be better developed when eggs are laid and egg survival may be reduced by warmer/drier weather
- Use appropriate crop rotations



Life stages of cabbage maggot
(left to right) Adult, Eggs, Larvae and Pupae; Damaged root

Photos courtesy Dr. Jim Broatch

Frost Injury

DISEASE OF THE MONTH

Causal Organisms: Not biotic – caused by exposure to cold environmental conditions

Crops Affected: all crops are susceptible to some degree, depending on growth stage, crop type, etc.

Disease Cycle:

- May occur in either spring or fall (or any other season), when environmental conditions shift from above to below zero
- May be either a general drop in temperature or the movement of cold air into lower areas, resulting in localized damage
- ???

Symptoms:

- Highly variable – depends on severity of temperature drop, duration of exposure to frost conditions, sensitivity of plant part(s) to cold and other conditions
- Branches may fail to leaf out or flower
 - Leaf and/or flower buds may fail to break or open
- Growing tissues may appear somewhat wilted and somewhat darker in colour, turning brown or black as tissues die
 - Tissues may have a water-soaked or papery appearance (depending on the plant part)
 - Damaged areas may dry up after a period of time
- Internal tissues may have blotchy discolorations
- Frozen tissues may become soft, spongy and watery, often eventually developing secondary infections (such as bacterial soft rots)
- Tissues or the entire plant (all parts) may be damaged or completely killed
- Flower buds and fruit may not develop properly
- Apparently undamaged flowers may have a brown or blackened centre
- Flowers or fruit may abort and fall off

Management:

- Ensure that plants are planted on a slight slope, to allow cold air to drain off and not collect in an area of the field
- Avoid blocking the flow of cold air, creating a frost pocket
- Avoid low areas or depressions that are prone to cold air collection
- Plant hardy or frost tolerant plants
- Avoid late plantings
- Plant perennial plants in areas that are somewhat slower to warm in the spring, preventing premature emergence and dormancy break
- Apply sprinkler irrigation to protect sensitive plants for short periods of frost
- Cover crops with row or field covers – may provide a small amount of protection, depending on thickness of material
- Harvest crops prior to frost, if possible
- If frost tolerant plants (such as cole crops) are exposed to frost, allow them to slowly and completely prior to harvesting
- Grade out frozen or damaged product

[Protection against Frost Damage – Agdex document](#)



Above - Frost damaged Saskatoon berries (green fruit stage) – frozen fruit = pink/purple discoloration – drop off when touched



Right - Damaged chokecherry flowers – note – slight brown discoloration



Above / Below – Frost damaged chokecherry bush – growing points brown, wilted & dying

