

# THE GARLIC NEWS

Connecting the Canadian Garlic Network! Issue 51 spring 2017

#### Selling garlic on the organic market: Part 1

#### What is or is not the organic market?

Now that you're immersed in organics - the science of soil organisms and their effects on plant health, good and bad fungi, mycorrhizae, the mysteries of crop rotation, which vegetables to follow and which to come first, composting, soil pH, and dozens of other topics - plus, mastering the skills needed to grow garlic organically and properly to achieve top quality, - -, well, the next challenge is selling at a profit on the organic market. Saturday farmers' markets will soon open, customers eagerly awaiting the bounty of fresh, locally grown vegetables, and on the summer horizon, a whole series of harvest festivals, garlic festivals and other marketing venues.

The urge to sell hits you, right in the pocketbook.

So, what is this organic market, where is it to be found and how can you get your fresh garlic to the buyers? First, eliminate the obvious "NOTs".

- •The supermarket is not the organic market, despite the large "organic" section in the produce department. Examine it closely and you'll see that the bulk of the produce is imported, or, shipped long distances. When it comes to garlic, the stuff on the shelves is shoddy and lacking in quality. Retail prices for organic are higher, but generally lower than the cost of growing the same vegetables locally. Besides, if you do the arithmetic, you'll lose money trying to meet the wholesale prices that food chain buyers will pay.
- •Wholesale selling is NOT a good option for a market gardener at the best of times. There are exceptions. Yes, specialty food stores, health food shops, ethnic markets and quality restaurants but even they need to buy at wholesale prices to make a profit. They generally pay more than the food chain or supermarket but still lower than the going local retail price.

•Unless you intend to export or sell across provincial borders, you do NOT have to certify organic to grow organically. You can sell organic but you can NOT promote it as "organic". The Canadian Organic Regulation governs the use of the word "organic", its derivatives and translations essentially for the import/export trade, making it the exclusive domain of businesses *certifying as organic*. The name doesn't change the taste of your fresh, locally grown product. Your customers will get to know and trust you, provided you earn their trust with honesty and quality. •Organic garlic is NOT a stand-alone crop. Think about it. If you grow organically, crop rotation is an essential part of your operation. Letting rotation fields go idle is poor farm practice. Growing a non-marketable crop is just poor business. Growing garlic in rotation with a selection of other market vegetables or crops is a normal organic method as well as making sound business sense.

#### **Direct marketing**

Next, the obvious conclusion, having rejected selling wholesale means selling at full retail price, directly to consumers. This is called direct marketing. It has the advantage of being much more profitable. The farmer receives the full retail price for the crop, not the much lower wholesale price paid by the middleman.

Two decisions are required for direct selling; a) where to sell, and, b) how to go about the task of selling itself.

Personal marketing skills needed to sell to the public are not a usual skill possessed by farmers and gardeners. These are skills that need to be developed.

Selling locally, provided the community is large enough, is obvious. Travel is both time consuming and expensive.

#### Forms of direct marketing

Local opportunities comprising the organic market generally include the following:

- •Farmers' markets.
- •Garlic festivals.
- •Farm gate sales.
- •Co-operatives.

•Community Shared Agriculture (CSAs).

These will be covered in more detail in a following article. Building an organic market garden as a business often starts at the local farmers' market. Look for one now and learn about it even before you are ready to sell your first crop. Then, you can branch out from there.

Balancing available time between growing and harvesting the crop and being out selling it at the same time is a juggling act; there is never enough time to do both and do them well. The market gardener needs to be well organized, develop personal skills, both in growing and marketing, and, will still need get help to do all the tasks and do them well. Any job worth doing is worth doing well. and that takes a lot of work. However, the rewards, both in satisfaction and profit will make it worth it. *Editor*.

#### The Garlic News Connecting The Canadian Garlic Network Issue 51 spring 2017

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#### About The Garlic News

The *Garlic News* is a membership newsletter distributed at cost to members. It provides a networking forum for the sharing of garlic information. Started in 2004, it carries on from where the *Garlic Newsletter* and *The Voice of Garlic* left off.

Back issues are available both in single copy and attractive 1-year bound sets.

For lists of articles in previous issues, go to: www.garlicnews.ca/ or,

www.rasacreekfarm.com

#### The E-Garlic News

The *E-Garlic News* is available by Email. Download size is approx. 5 MB. Inquire.

#### **Editorial Policy**

The purpose of the Garlic News is to enable farmers and gardeners to grow better garlic and enjoy it more. Articles and contributions are welcome and will be published subject to space and suitability. Letters and articles may be edited for length and content. Advertising, subscriptions, or material submitted for publication that detracts from the integrity of the News may be refused by Editor. Articles should be not over 400 words or one page of text and pictures. Written permission for use is required for reproduction, duplication or electronic transmission of any article. Contents copyright © 2017 Paul Pospisil. Deadline Summer 2017 Issue: June 01.

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## 2017 Eastern Ontario Garlic Field Day

at the Small-Plot Organic Garlic Variety Trials Site

Date: Sunday, 25 June 2017 from 09:30 a.m. to 3:30 p.m. Location: Beaver Pond Estates, 3656 Bolingbroke Road, Maberly, Ontario

Attendance: By invitation. Growers within reasonable driving distance, i.e., Eastern Ontario and Western Quebec receive invitations. If you don't receive one and would like to attend, please contact the editor. We'll be pleased to send you one.

*If you want something done, ask a busy person to do it. The more things you do, the more you can do.* 

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#### Notes from our garlic patch

#### **Garlic Field Day 2017**

For you folks in Eastern Ontario and West Ouebec, mark Sunday June 25 on your calendar for the annual garlic

growers networking day at Beaver Pond Estates where you can share stories and get ideas from other growers. Invitations will go out individually in early June. As this is a private event at our farm and home, it is closed to the public. Growers outside the region wishing to attend should contact me beforehand so you can be added to the invitation list.

Since starting this day 17 years ago, garlic fans continue to come and share their experiences and questions and find the day quite useful. There's always someone bringing along a special garlicky dish to satisfy the garlic craving. We don't like "canned" presentations but speakers do informal talks in the sunshine so everyone can enjoy a Sunday outing.

Mary Lou and I intend to continue hosting the Garlic Field Come on, groundhogs! You sound like those weather Day so long as health and energy permit. That said, any grower wishing to take over running such an day in this region is welcome to do it and we'll help you out all we can.

#### "Longest Braid" contest faces cancellation

The "Longest Braid" fun competition was held last year at the Verona Lions Garlic Festival in addition to the Eastern Ontario Garlic Awards Competition. Although popular with the public, it drew only one grower entry. It seems that few growers are interested in entering a braid for the \$100.00 prize. Unless more competitor interest is shown, this contest will not be held in 2017. Let me know if you are interested in entering and would like to see the contest continue. If enough interest is shown, we'll run it again. See information in Garlic News Issues 48 and 49 for details. The Eastern Garlic Awards will be conducted as usual.

#### Fake News, Deceit, Half-truths, Lies and Groundhogs

world history. The spread of hatred and political struggles for control of people's minds and the people themselves dominates the daily fare on television, the papers and especially, on this new electronic phenomenon. Widespread and highly effective use of the Internet as a propaganda tool using fake news, distorted and misleading news, half-truths and downright lies by supposedly respectable people and the news media themselves makes you wonder where it will all lead our society?

Has Groundhog Day also succumbed to fake news? For years, I have followed these famed creatures that emerge in midwinter to provide a forecast for the arrival of spring. Now, I suspect that even groundhogs have become spreaders of A big "Thank You" -false and fake news. No doubt, it was a big mistake to allow them to read Facebook and see how people are so gullible in With such generosity, the Garlic News is in the black! believing anything they read on the Internet.

And, they must have tittered over Twitter where the one-liner "sound bites" are the choice tools for spreading lies.

I fear that Groundhog Day may have fallen victim to this modern disease of deception and duplicity.

Remember the 2016 groundhog forecasts? They were very optimistic. Well, if you recall, spring 2016 turned out to be a bit of a disaster across the land.

Our own Feldspar Freddie was so disgusted with this state of affairs that he refused to come out of his winter burrow, not wishing to be associated with these other deceitful creatures.

What's in store for spring 2017? In the east, these furry rodents foretold an early spring. Hello? A big snowstorm. Then, March 20, the day of the spring equinox, was sunny and warm but two days later, bitter cold in the minus 15 to 20 range. Still over a foot of snow covering the garlic beds. Not quite spring, wouldn't you say?

Out west, the Prairie Prognosticator, Balzac Billy cautiously said that winter will stick around for a while. He's cool.

forecasters that prance around on the TV in front of a big map, waving their pointers and trying to sound knowledgeable. How about getting serious? And, forget the fake news!

#### Snow on the garlic beds

Well, spring or not, it's time to get gardening. I started some bulbils and garlic experiments in cups on the windowsill to be ready no matter when spring arrives. The heavy cover of snow from early winter nearly disappeared with the warm days and the rains that came in the extended mid-winter thaw. I feared exposed beds with the cold snap that came in March. Phew! Snow fell, adding much-needed protection for the garlic.

#### The E-Garlic News

The Garlic News back issues for years 5 to 12, Issues 17 to 47 have now been converted to compressed electronic format suitable for transmission by email. Members interested should contact me. Back issues in one-year sets can also be had on News from around the world makes this a gloomy period in USB or CD. The first four years are still in the process of being converted.

#### **Regular Columns**

Liz Tobola sent her regrets that there would be no Tales of the Stinking Rose article for this issue. She hopes to be back for the summer edition. A big welcome to Terry Graydon. Her first column for the Garlic News appears on page 8 under the byline "Garlic Adventures with Farmher Terry". Sylvain Fillion has sent an educational article and we are hoping that he will continue reporting.



- - to **Dwayne Lysachok** for adding extra \$\$ to his renewal.





#### Garlic gardening tips for spring

#### What to do with that sprouting garlic?

Have some garlic bulbs from last year's crop that are sprouting?



The Purple Stripe Brown Tempest sprouting in early spring

When garlic breaks dormancy and starts to grow, it becomes harsh and is no longer tasty. You don't have to discard it. The best thing to do is to plant it.

Market gardeners can spring-plant these sprouting cloves outdoors or even in the greenhouse and use them for early sales of garlic scallions or greens. They fetch \$3.00 to \$4.00 a bunch at the market as they are a spring delicacy. Convert a loss to a profit by increasing total garlic sales for the year!

Home users can take the cloves and plant them in pots on the windowsill and clip the greens when they are 8-10" tall. Each clove will give several cuttings.

#### Growing the highly profitable Artichoke garlic?

Artichoke cultivars produce the highest yields of any of the Horticultural Groups, and in many crop years, produce the largest bulbs. Many growers scoff at them as "having all those tiny little cloves". Not necessarily so.



The Artichoke cultivar Wettergren produces very few inner cloves and occasionally none as seen in the picture above. With yield ratios greater than most Rocamboles and double that of the Porcelains, Artichokes can double the profit from a market gardener's field. And, the Artichokes can be spring planted in the colder, fall planting regions for decent crops as well. If you have some of these bulbs laying around, plant them and see!

#### Prepare fall planting beds for garlic now

Plant the 1<sup>st</sup> cover crop in April or as soon as you can safely work the soil in the spring. Four, five or even six crops can be grown and turned under before its time to make the planting beds.

Result: Rich soil, full of organic matter, happy earthworms, healthier soil, less weeds and a fine crop of garlic the following summer.

#### Compost tea

Compost tea increases the fertilizer benefits of compost.

In recent years, scientific research is directed to determining its disease suppression qualities as well. It has been shown to be effective in combatting diseases of the pythium, botrytis and fusarium groups. When sprayed on the leaves, compost tea suppresses foliar diseases, increases the nutrients available to the plant, and speeds the breakdown of toxins.

With the spread of fungal diseases in garlic crops, some growers are turning to using compost tea to control and manage them as well as for improving the compost as fertilizer to grow better crops.

Compost tea is made by steeping or fermenting compost in water, bubbling it to make it by aerobic process.

Home gardeners can make a 5-gallon bubbler using supplies available in pet shops or, buy a ready-made kit from a garden shop. Commercial gardeners need to scale up the size using 45 gallon drums or large tanks to meet their greater needs.

Make this the year to learn how to make compost tea, the right way, aerobically. Anaerobic compost tea is not recommended as it can turn sour or even toxic.

#### Making Garlic Spray concentrate

*This recipe came from David Stern, Director of the Garlic Seed Foundation.* 

A garlic spray is a great organic pesticide for your vegetable and flower gardens. Since garlic has such a strong smell, it confuses insects in search of their favourite plants, so it works.

To make garlic spray concentrate, use 2 to 3 whole garlic bulbs, a litre of water and 4 to 5 drops of liquid dish soap.

Directions: Separate garlic bulbs into cloves. Chop garlic cloves in blender or a food processor with a cup of water until well blended. Add liquid dish soap, more water to make up a litre and blend until mixture is a liquid. Strain the through cheesecloth, twice, to remove bits of garlic that might clog the sprayer.

Store the strained concentrate in a glass jar with a tightfitting lid until you are ready to use it.

It works on cabbage butterfly, potato beetles and other chewing insects. To repel a wider variety of pests such as aphids, add a tablespoon of crushed hot pepper or a hot pepper sauce. Spray at the first sign of pests before become a problem. Prevention is best.

When ready to spray, mix one cup concentrate with 2 1/2 cups of water, and pour this mixture into a pump spray bottle or a pressure sprayer. Spray leaves on top and underside. Repeat every few days if more pests are spotted.

#### **IN MEMORIAM**

John "Jim" Kastelic Born: 1923 Died: December 29, 2016 at the age of 93

#### Another sad phone call

**Dwayne Lysachok** called in January from **Spruce Grove**, **AB** and told me that his father-in-law, **John "Jim" Kastelic** of Sangudo, AB had passed away soon after Christmas. Although I had never met him, I had grown fond of this gentleman. He reminded me of my late father. Jim was a farmer with a love of the land, refused to live in a seniors' home and worked the farm until his death. Last year, Jim and his surviving family planted his last crop of garlic, 4000 plants that had to be in the ground by April 1.

Dwayne said that everyone at the funeral was given a head of garlic in honour of Jim's practice of generously sharing his garlic crop with friends and neighbours. The garlic world has lost another fine garlic pioneer.

His legacy lives on in a bulb of garlic.

This beautiful garlic was brought to Canada in 1938 by Jim's late wife Marge from her home in Czechoslovakia (now, the Slovak Republic). She was the gardener and lovingly cultivated it for 70 years. Jim took over growing it after Marge had a stroke and could no longer keep up the garden.



Jim sent me three huge bulbs of this lovely garlic in April 2015. I spring-planted one, used one for a taste test and fallplanted the 3rd one. The garlic had no name so I called it simply "Kastelic". Even in our climate, the spring planted ones produced a harvest of Super Jumbo size.

See Garlic News Issue 45, Our Featured Garlic Grower from Alberta for more on Jim and his garlic.

Growers interested in trying this superb garlic may get contact information for Dwayne Lysachok or Nick Lysachok, both of who grow it, by contacting me. You will help keep Jim's legacy alive. Editor.

#### SOURCES

We get frequent queries for sources of supply for garlic crop management supplies. Here are some of the more common needs:

### Leek Moth Detection, Pheromone Traps & Lures

1) Cooper Mill Ltd., RR 3, Madoc, ON, K0K 2K0 Contact: John Hastings, ph. 613-473-4847 Website: www.coopermill.com/

2) Solida, in Quebec

Contact: Marc Charbonneau ph. 418-826-0900 Email: info@solida.ca Website: www.solida.ca



#### Leek Moth Control

BtK: Small quantities sold in garden shops, Canadian Tire, Home Hardware, etc.

Larger quantities may be ordered through Safer's, Canada.

#### Nematode Suppressing Cover Crop

Oriental Mustard "Cutlass" Bailey Seeds, Milden, SK Contact: Roy Bailey, ph. 306-935-4702 Email: stoneyridge@sasktel.net

Before ordering, first check locally. As demand from garlic growers picks up, some feed stores carry Oriental Mustard.

(Small quantities for gardeners are available from the garlic trials. 85 gr. pkg. for \$5.00. Contact Editor).

#### Mesh Bags for garlic packaging

Master Net Ltd., 690 Gana Court, Mississauga, ON Canada L5S 1P2 Toll Free: 1-800-216-2536 or Ph. 905-795-0005 Website: www.masternetltd.com or simply google "master net".

#### Garlic Tip for leek moth management

Concerned about the leek moth? Mount a Max-Min thermometer in the garlic patch and check it daily. The moths emerge from overwintering and start mating when night temperatures rise to 9-10 Deg C. In our Zone 5, that usually happens in the 2nd week of April. This is the time to set out the Pheromone Traps to get better confirmation of their activity. The eggs start hatching into larva in 3-10 days, depending on temperature. Start daily walk through inspections in late April to spot chewing damage. Find the young larvae and squish them!



#### **Ail Quebec News**

By: Jean Lafontaine

What a mild winter we're having so far, though, of course, some areas have received much more snow than others. This must be El Nino's softest performance ever. I don't dare call this unusual anymore, as weather conditions keep

changing so fast! As I'm writing this on February 25, the temperature outside is 11° C under a sunny sky and bare patches of ground appear at the foot of some trees. Three days ago, a twelve-inch snow cover lay upon the still unfrozen garlic field. After eight consecutive days of thaw, it is now melted down to barely four or five inches. Snow came early, in November, thus preventing the ground from freezing (at least where I live, 120 km south of Quebec City).

Do fall planted cloves grow huge root systems under such conditions? Better ask Paul...

Same time last year this field stood stark naked, and on numerous 300 ft. long rows, French garlic cultivars were pointing already. It all froze to death one windy night in March 2016, when the mercury fell to  $-17^{\circ}$  C, something this southern France-born planting stock was obviously not prepared for.

No wonder more and more Quebec producers are now trying French spring planting cultivars!

Global warming strikes again! Oh, my goodness, what a coincidence!

Here is a message that just came from a member in Hemmingford, south of Montreal near the Vermont border:

The territory covered by this association is so vast! How could I give you readers an exhaustive report for all regions? To illustrate this, I called a member whose garlic field stands 250 ft. south of the impetuous Saguenay River, in a place called Saguenay (formerly Chicoutimi), 200 km north of Quebec City and 400 km north of Hemmingford where the above pictures were taken, and asked for a picture of the snow cover on his garlic. Here it is:



On February 25, **Sylvain Fillion** of Saguenay said the snow cover on his garlic was down to 24 to 30 inches, due to a week of thaw followed by a one day and one full night rain episode.

#### Ail Quebec targets for 2017

As mentioned in last issue, three priorities were established for this year:

Improving communication with and between members Creation and management of committees

Enhancing physical and virtual visibility of the association

#### Here is what has been done so far:

1. Improving communication

A first meeting was held in early February with the Board of Directors and the people who will oversee the committees. Decisions were taken, improvements will follow, the first being a *new name and logo* for the monthly newsletter.





"No more snow cover on our garlic", says **Denis Dalpé** of Hemmingford. "Temperature in the 15° C range for  $2^{nd}$  day and garlic is pointing".

### ASSOCIATION DES PRODUCTEURS AIL QUÉBEC



#### Ail Quebec News, continued

Another communications project is the March 25 Round Table Meeting to be held in Drummondville. While topics will be "Production Costs" and "Meeting with Committees", the plain underlying non-official reason behind this is to provide members with the opportunity to spend a day in the company of other producers and get to know each other better, share a meal, exchange ideas and have a good time. We love gatherings!

Next on our calendar is "Mission France", when members will visit Les Producteurs d'ail de la Drôme, a geographical area covering 118 municipalities where the production of two local cultivars, Messidrôme and Thermidrôme is submitted to strict quality control and granted with a designation of origin. So, a short but potentially interesting tour, from April 1 to 6.

#### 2. Committees

Three committees are being revived or created:

- a. Machinery and equipment. This committee will create a virtual showroom to exhibit and explain homemade or modified machinery, tools and farm equipment. Will we eventually be able to provide members with something comparable to the French Atelier Paysan, a self-help farm equipment construction cooperative? It would be great!
- Writing and translation. Well, I guess everybody b. understands what this one is about. So much great information is available only in English. It takes people to build those bridges between languages.
- c. Promotion, Marketing and Commercialization. This one is the newly formed committee, thanks to dynamic volunteer France Bouthillette, a former sales manager who turned to small scale farming and organic garlic production. She will be assisted by Lucie Forcier, a busy Information Technology Senior Advisor involved into garlic with husband and family as a retirement project.



#### France Bouthillette



Lucie Forcier

With these two great ladies in charge, boy, the Chinese had better watch out!

#### 3. Enhancing visibility

Ail Quebec recently became a member of the Quebec Produce Marketing Association (QPMA), a non-profit organization that brings together members from every sector of the produce industry and whose mission is to create a favourable environment for the development of fruit and vegetable marketing in Quebec.

QPMA has more than 500 members, including fruit and vegetable growers, importers, exporters, wholesalers, carriers, brokers and three major grocery store chains...as well as sales representatives for food distributors and fresh fruit stores. QPMA members are located mainly in Ouebec...but also in other Canadian provinces and the US and their business connections are international in scope...since fruits and vegetables are traded worldwide depending on the seasons. This may only be the first step, but who knows how much garlic we'll eventually ship to China in a few years from now?

Of course, Paul I'm serious!...

#### Welcome Mr. President!



At the December 9, 2016 4<sup>th</sup> Annual Meeting, two out of three outgoing administrators were seeking re-election but, as you already know, Denis Dalpé chose to leave his president seat. So, without surprise, Denys Van Winden and Serge Pageau were re-elected, while Anouk

Ail Quebec new president Serge Pageau

Préfontaine begins her first term. Together with Anick Gauthier and

Sébastien Grandmont they will no doubt lead this association a little higher, a little further.



Anick Gauthier, secretary; Anouk Préfontaine, administrator; Sébastien Grandmont, treasurer; Denys Van Winden, vice-president and new president Serge Pageau



#### Garlic Adventures with Farmher Terry: Italian Ryegrass

By: Terry Graydon

I have been growing and learning about garlic in Lombardy for eight years now. My kitchen, property and gardens are my playground and provide an endless

source of joy for this horticulturalist turned Farmher. I am constantly researching, experimenting and evaluating. This past year I have been experimenting with Italian Ryegrass as a cover crop following the July garlic harvest.



Italian Ryegrass: seed after garlic harvest, cut before frost, cut again late spring and turn soil.

Typically, Ryegrass cover crops are seeded in early spring, April or early-May for harvesting that year. But Italian Ryegrass can be seeded in August and cut in late Fall. Mine was about 10" long when I cut it to a height of approximately 4". The cuttings make great forage or mulch that provides nitrogen and suppresses weeds. I put mine in the row aisles. This Ryegrass is not guaranteed to overwinter in this climate but if it does, the following spring, you can make the second cut in May.

My three, 25' x 4' trial beds used for Italian Ryegrass are raised, on high ground and on a south facing slope. I am hopeful that the slope plus the snow cover will help this cover crop to successfully overwinter. Italian Ryegrass does not particularly like a lot of dry weather but I had no difficulty starting the heavily seeded beds during last year's drought. I did get lucky with some good rain immediately after seeding. It took roughly one week for the seeds to establish. I never watered the trials as I am a tough love gardener.

I purchased my seeds from Rooney Feed and Seed in Kemptville 25kg. for \$87.00. They were very good about selling me only a few kg. for this trial. If I plant Italian Ryegrass again I will not seed quite so heavily. This made the grass weak and more difficult to cut. It was an excellent, dense, weed suppressing, late season cover crop.

There are two types of annual Ryegrass and they are very different: Westerwold and Italian Ryegrass.

Westerwold ryegrass is a true annual that will aggressively produce seed heads the year of seeding, and will be killed by winter. Westerwold seed is cheaper and is more commonly used as a cover crop.

Italian ryegrass is actually a winter annual that has a vernalisation requirement (exposure to cold temperatures

similar to winter wheat) for flowering, so it will not form a stem and or go to seed the year of seeding. It will produce a seed head the following spring if allowed to mature before harvest. Italian ryegrass is sometimes confused as an annual when it is killed by winter. Newer varieties have been developed and selected with more winter hardiness.

Updates and more Garlic Adventures to be continued... Information Source: OMAFRA Field Crop News Highland Organics Farm. Find us on Facebook & Instagram

#### A quick guide to cover crops at Beaver Pond Estates

There are virtually hundreds of plants that can be used as cover crops for green manures to enrich soil. In the Beaver Pond Estates growing trials, we selected an effective and easy to grow set of plants that meet the needs of the garlic trials:

• Buckwheat. Fast growing, good green manure crop, smother crop for weeds, aerates the soil, earthworms love it, compatible with oriental mustard, kills wireworms, and multiple crops can be planted and turned under in the year that fall garlic goes in to the plot.

• Alfalfa. Perennial legume, adds nitrogen, potassium, and some phosphorus to your soil, used for "nitrogen fixing" or extracting nitrogen from the air and storing it on the roots in the form usable by other plants, superior to most other legumes and clovers for providing nitrogen. Cut and dried as hay, makes excellent mulch or can be added to the compost heap. Plant alfalfa after one or two crops of buckwheat. Turn under before garlic is planted.

• Oriental mustard. Fast growing, can be combined with buckwheat in the same planting, used to suppress the Stem and Bulb Nematode. Like buckwheat, three or four crops can be grown in the year that garlic is to be planted.



Mustard must be chopped before turning under.

• Annual rye grass. Used to take up excess nitrogen from composted manure used before planting to enrich the soil. Best planted before the garlic. Can be left over the winter as it will freeze and not create a weed problem the next year.

#### Humour: Sad but true

If Adam and Eve were alive today, they would likely sue God, naming the serpent as co-defendant, for violating their rights guaranteed under the Charter, demanding as compensation clear ownership of the Garden of Eden in perpetuity, and for the personal harm caused to them, an orchard full of forbidden apples to eat at their leisure. The judge would likely rule in their favour. Life has changed!

# Connections

Start your day the growing way

#### Farmers Grow Scientific Understanding of Pests Impacting Garlic Production

#### Submitted by Angel Taylor and Emma Horrigan

Garlic

Though agricultural production in Haliburton County occurs on a relatively small scale, garlic is considered an important crop, which thrives despite poor soil conditions and a short growing season. Unlike yields from other market garden crops, garlic and other products from the *Allium* family, such as onions, chives, and shallots, grow extensively through the County and represent an important income for growers in the region.

In 2013, members from the Haliburton County Garlic Growers Association (HCGGA) were starting to document significant crop loss because of leek moth (*Acrolepiopsis assectella*). This observation eventually led to a partnership with a local community-based research centre, U-Links, as well as the Haliburton County Farmers' Market Association.

This collaborative project also involved expertise from scientists at Agriculture and Agri-Food Canada (AAFC) and the Ontario Ministry of Agriculture and Food and Ministry of Rural Affairs (OMAF and MRA), and were instrumental in developing and implementing tools for monitoring of garlic pests over the long-term.

Initially the research focused on documenting the distribution and impact of leek moth on growers and developing evidence-based tools that would help growers address the impact of this pest. Over time these efforts grew to encompass other garlic pests such as soil bulb and stem nematode (*Ditylenchus dipsaci*). It is expected that the results from both these projects will help to inform garlic production across Ontario, serve as a model for successfully involving growers in meaningful research and define additional research targets to augment the findings.

Research on bulb and stem nematode focused on testing the effectiveness of cover crops together with certified clean seed as an approach for reducing soil nematode populations. Key findings that emerged from this threeyear study include:

- 1. The two cover crops used (pearl millet and oriental mustard) had significant variation in their field germination and growth rates. This is likely due to the within-site variation in soil properties. Further testing of soil pH and key soil nutrients, such as nitrogen and phosphorus, may help to better understand this variation.
- 2. The detection rate of bulb and stem nematode in soil samples was inconsistent between each year. The methods used for collecting and processing soil samples for detecting bulb and stem nematode populations needs further research. This work is currently being led by Mike Celetti at OMAF and MRA.

All partners played a key role in leading research efforts, with the garlic growers involved in data collection as citizen scientists. The citizen scientists were all members of the HCGGA and were experienced garlic producers. Most had suffered the damaging effects of garlic pests and were distributed across the County. For growers, the project evoked a strong interest in improving their own crop and was also a desire to help other growers. Long-term grower, Rick Ratcliff, commented: "I wanted to get involved because it impacted me personally and other members of the Association... Knowing it's a problem province-wide, it was an opportunity to be part of the solution...If through our efforts we can help others, it's a win/win situation."

An important aspect of the experience was the mutual respect by the scientists who served as resource persons and the citizen scientist growers. Both partners learned from one another. "It gave me a better sense of data collecting and an opportunity to observe the correlation between insect activity and the weather," said Richard Taylor, garlic grower. The valuing of the citizen scientist contribution was reflected in a small stipend that was built into the grant. Says citizen scientist/grower Ron Reid, "The past three years assisting with both the leek moth and nematode studies was for me an honour to be able to provide support and assistance to these worthwhile science projects."

This project was funded in part through Growing Forward 2 (GF2), a federal-provincial-territorial initiative. The Agricultural Adaptation Council assists in the delivery of GF2 in Ontario. This project also received funding from the Haliburton County Development Corporation

To contact the Haliburton County Garlic Growers Association: Visit website:www.haliburtongarlic.ca or phone Sheila Robb 705-489-4201, Email robbsheila@gmail.com



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The Garlic News Issue 51 spring 2017

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### **Natural Garlic Pincushion**



I make these by hand at our garlic farm in Alberta. The knitting and sewing are my original design with 100% natural wool from Western Canada. The lining is re-purposed cotton sheeting - even your sharpest needles should not disappear inside. The i-cord stalk is dyed with a vegetable dye. 9 cm across, 28 cm circumference.

\$25.00 plus shipping - email for the shipping cost to your postal code.

Lorraine at bbarbeef@airenet.com

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#### THE GARLIC PRESS

Newsletter of the Garlic Seed Foundation Go to website: www.garlicseedfoundation or Email Bob Dunkel: gardunk@yahoo.com

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#### **Under the Snow: More Ail Quebec News**

By Sylvain Fillion

I cultivate garlic and raspberries on fields bordering the Saguenay river, thus our farm's name, *Le Maraîcher des Basses Terres Du Saguenay*. Since our region, Saguenay-Lac St-Jean, always receives snow in abundance, it is the kingdom of the snowmobile in winter and my garlic has been well protected so far.

Have you ever wondered what's happening with garlic at this time of the year (mid-March) under a thick layer of snow? Let's go and take a look...



Messidor under 16 inches of snow, showing roots

French cultivar Messidor at left.





First, you must dig through the snow to expose the ground--

We've had at least 2 to 3 feet of snow over this field all through winter, but a thaw with some heavy rain in the last week of February altered the structure of the snow, thus reducing its insulating properties. Therefore, the upper layer of this clay loam has frozen in some places.

Here are two French cultivars, Flavour and Messidor, growing on March 13, 2017 under 16 inches of snow. The cloves are stuck into the frozen layer but the end of the roots elongates into the unfrozen soil.



French cultivar "Flavour"

In a part of the field sheltered from the wind, the Music from Ontario under 2 feet of snow in unfrozen soil. It seems to have a slightly more developed germ.



Music, showing slightly more growth, in unfrozen soil



Editor: Thank you for the excellent pictures, Sylvain. For our readers, Sylvain's farm is located about 120 miles north of Quebec City. Saguenay summers are warm and occasionally hot, and winters are long and very cold. Temperatures drop lower than -20 °C on average 47 times per year and less than -30 °C 7 times per year. Hardiness zone is 4a.

#### The best recipes, garlic tips and ideas

#### **Garlic Scape Soup**

**Lorraine Bannister of Innisfail, AB** sent this recipe that she tried out and enjoyed. Keep it handy for scape season, coming up sooner than you think.



### Ingredients:

2 litres chicken stock

Garlic scapes. I used about 20 from Northern Quebec, that forms a large scape. About  $2 \times 4$  litre milk jugs of them. When pureed with stock, it made 1 litre in the blender. 1 cup cream, or to taste

#### Method:

Boil the clean scapes with flower head removed and chopped into about 10 cm. lengths in the chicken stock until tender, about 15 minutes for N. Quebec, could be less for a slenderer scape, but wouldn't matter too much with soup. Put scapes with a bit of liquid in the blender and chop coarsely. Return to stock pot, bring to boil and add cream, heat through.

Lovely with garlic croutons or sharp cheese toast. It's a nice soup alone, but an onion could be added, salt and pepper to taste, even potatoes in season. More scapes could be used when we make it with smaller-scape varieties, we'll likely use more - the taste was very mild - a bit reminiscent of leek soup. I was happy that our gang enjoyed it, because we have tons of scapes at this time of year, and this way I can freeze lots whole and then use them in soup later in the year.

#### How we did the taste testing

Further to: Growing Garlic in Germany, Issue 50

By Peter Barthel

A clove is cut into thin slices. One is put onto the tongue and kept in the mouth for tasting. When this is not too pungent, you can take a small bite on the slice and again feel the taste; if too hot, spit it out.

Next you rub some peeled cloves on a grater. Then, in a small bowl or a big flat cup, you grind the mashed garlic with the back of a spoon with a little salt added. The salt takes away the pungent hotness and enhances the flavour. To this slurry, add a little olive oil (fresh, extra virgin, mild, relatively neutral, no bitter side taste) a bit at a time, so it makes a creamy paste. Now you can taste the whole flavour in small amounts. The oil also prevents the release of the full hotness (as opposed to watery liquids). You can also taste this paste on a slice of bread. We tried one or two varieties each day in autumn before meals using the 9 points pattern (1<sup>st</sup> row taste, 2<sup>nd</sup> row pungency, hotness, 3<sup>rd</sup> row consistency). In the taste-result-table, the 2<sup>nd</sup> column sharpness meant hotness, pungency like in the pattern. The 3<sup>rd</sup> column "Heat" meant flavour of the peeled cloves heated in the oven for 20 minutes at 350°F (175°C).



#### How we did the taste testing

**Corrected Chart** 

By Peter Barthel

#### Chart Corrected from the one in Issue 50

Partial Table of Garlic Flavours							
	From taste tests conducted by Peter Barthel						
	Cultivar	Flavour	Sharpness	Heat			
	Corrected	Taste	Hotness	**			
As	Asian Tempest	8	6				
Cr	Burgundy	7.5	5				
R	Carpathian	7	6				
	Chinese White	6	8	7			
R	German Red	8	4				
R	Killarney Red	8	6				
Р	Leningrad	7	5				
Р	Music	6	5				
Р	New Siberian	7.5	4.5				
As	Pyong Yang	8.5	6				
Т	Red Janice	7.5	5				
R	Red Russian	6	6	6.5			
R	Russian Red	6	8.5				
G	Red Rezan	7.5	6				
PS	Shvelisi	7	7	7			
MP	Siberian	7	7	7			
SS	Solent Wight	7	6.5				
Р	Tallin	8	7				
Р	Yampolskij	7	7				
Р	Zemo	7.5	7.5	7.5			
** fl	avour of the peele	d cloves hea	ated in the oven	for 20			
	minutes	s at 350°F (1	75°C).				
	Code for	Horticultural	l Groups				
As =	Asiatic	G = Glazed Purple Stripe					
Cr =	Creole	PS = Purple Stripe					
R = Rocambole		MP = Marbled Purple Stripe					
P = Porcelain		SS = Silvers					
T = Turban							

#### More regulations coming for Organic Producers?

The Canadian Food Inspection Agency (CFIA) recently announced: "Recent decades have seen significant changes in the global food environment. Advances in science and technology, the emergence of highly integrated food supply chains and changing consumer preferences require Canada's federal food regulatory system to keep pace to protect the health of Canadians."

Editor: Does this mean better checks on imported food? Don't hold your breath. It will most likely result in a free pass for imports and local producers having to jump through more hoops.



#### Al's Ramblings Spring planted garlic

By Al Picketts

Have you ever wondered what would happen if you did this or that? Something that you can't find in the book you have about garlic. I wonder all the time. If I can't find it in the book, then I experiment. What

I find may not be new to the world but it is new to me and it might be new to you too.

#### One of these subjects is spring planted garlic.

When do you plant your garlic? October? Of course. That's the best time and any garlic grower will tell you that. Well, what happens if you plant your cloves in the spring? I did just that about five years ago and I've planted every spring since. Oh, I still plant most of my garlic in October but I've spring planted more and more each year. Let me tell you what I've found because all garlic types do not behave as you think they should.

Let's start with Turbans. Now don't shake your heads in disgust. Turbans can be a wonderful garlic. Big too. Here's what I've observed: I planted about 1500 cloves of Turban one spring to get an early jump on fresh garlic sales. Turban is the earliest type to harvest. I thought that planting it in the spring would give me some beautiful bulbs earlier than usual. What I found was, yes, it grew fast and fell over early but when I dug them up, I had rounds instead of bulbs. For those not familiar with the term, a "round" is a bulb that has not divided into cloves. Yep, just one big clove that is perfectly round. Looks like a marble. Now, some folks might think, "What is the use of this little, good-for-nothing, non-bulb of garlic? Nobody will want it. What a waste." But, hold on there. Don't eat these little rounds. Plant them. They will grow into the biggest bulbs of Turban garlic that you have ever seen. I didn't dig up all the rounds that first year. I left most of them in the ground to see what they would do. Well, they surprised me by growing in October and November so that they had about a foot of greenery by the first snow. "So much for that experiment." I said to myself. "They'll not survive winter." But they did. Next spring, up they came. And what beautiful garlic. Best Turbans I've ever seen. Some almost three inches across but most 2 inches and better. Lovely.

I've done the same with Elephant. Plant cloves in the spring and harvest only rounds in August. And what rounds they are. Some as big as baseballs but all the way down to pingpong ball size. I planted them in October and harvested the biggest Elephant bulbs the next August. Much bigger than fall planted. I was so impressed that last fall I didn't plant any Elephant cloves, only rounds.

This spring, I plan to plant several thousand of Turban and Elephant cloves to have rounds for sale in the fall. I expect the price will be about \$2 for Turban rounds and \$5 for Elephants. I have no idea as to how many rounds I'll sell but

if you might want some, be sure to get your order in early. Whatever I don't sell, I'll plant myself.

I plant Creoles in the spring too. In fact, I don't plant any Creoles in the fall any more. Haven't for years. They just grow so much better when spring planted. For years, I couldn't get a Creole much bigger than my thumbnail. Now I'm harvesting Creole bulbs up to 2 3/4 inches across. And they look so pretty when the bulb wrappers are removed with their burgundy coloured clove covers. If I ever wore a suit, a nice Creole bulb would look great in the lapel. And Creoles keep so well. They're still in great shape when you're harvesting Turbans the following July.

Last spring, I did an experiment. I figured that Silverskins would not do well if spring planted. They are my last type to harvest and some years that isn't until the first week of September but normally about August 25 – 30. Well, I was certainly surprised. The spring planted Silverskins harvested about the same time as fall planted but the size was even bigger. The shape was also a surprise. Fall planted Silverskins tend to be somewhat football shape. I call it laterally compressed. What you might think a garlic would look like it you were to lay it on its side on the floor and step on it. Laterally compressed. But, the spring planted Silverskins grew very round. No, they didn't grow as rounds - Turbans and Elephants do that. Only the shape of the bulbs was round. And they cleaned up so easily. They were beautiful, round, white bulbs of Silverskin garlic. I will plant several thousand Silverskins this spring.

Rocamboles and Purple Stripe Marbled do well when spring planted. They really respond to early planting, the earlier, the better. I aim for the second half of April but I'm sure southern Ontario and western BC would be able to plant much earlier. It is possible to get spring planted Rocamboles and Purple Stripe Marbled to rival fall planted garlic for size, shape, colour and keeping ability.

I find it difficult to grow a good crop of Porcelains in the spring. Oh yes, they'll grow but just not as large as the fall planted garlic. I suppose you could say that a poor crop from spring planted Porcelains is better than no crop because you missed the fall planting. Oh, yes. Much better. I expect areas where earlier planting is possible could grow great Porcelains. Try it and see.

I haven't spring-planted any Artichokes yet. I'm sure they would do well but I sold out of Artichokes last fall so have none to plant this spring. Seems odd since growers think of Artichokes when they think of spring planting garlic.

To sum up I'll just say, "Try spring planting garlic and see what it will do for you." And if you need great seed, I have lots for sale at regular fall prices.

Al's Eureka Garlic ad with his contact information is on the facing page. He lists a large assortment of cultivars for spring planting and will have additional ones for the fall. Editor.

14

	Garlic & Garlic Products from			
	Eureka Garlic, Kensington, PEI			
		Attentio	on, M	arket Gardeners!!
Seed Garlic for Spring Planting Cultivar List			iting	"Let my business help your business"
Variety	Туре	Variety	Туре	Garlic Products at Wholesale
Eureka Clayton	Т	Cuban Purple	С	Dehydrated Garlic Products
Keeper	Т	Alison's	R	I make a nice selection of value-added garlic
Morado Giante	Т	Brown Saxon	R	-
Shangtung Purple Eureka Xian	T T	Eureka Allen Eureka Helen	R R	products that I offer in bulk quantities at wholesale
Continental	P P	French Rocambole	R R	prices. These sell well at events &
Eureka Clifford	P	German Brown	R R	Farmers' Markets and it can save you a lot of
Eureka Duncan	P	GSF65	R	time. You just package them into retail packs.
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Floha	P	Korean Purple	R	Garlic Powder, or,
Georgian Crystal	P	Marino	R	Garlic Pearls, both in 100 gram bags
German	Р	Salt Spring	R	Garlic Scape Powder, or
Porcelain		Select		Garlic Scape Soup Beads, 5 lbs./\$200.00
German White	Р	Slovak Mountain	R	also in 1 lb. bags
Great Northern	Р	Spanish Roja	R	Fresh Scapes: Bulk pricing in season
Mennonite	Р	Ukrainian	R	
Moravia	Р	Ukrainain Hot	R	Eureka Black Garlic
Music	Р	Eureka Danaerys	SS	Luieka Diack Gallic
Northern Quebec	Р	Nootka Rose	SS	
Susan Delafield's	Р	Silverskin	SS	Prices: 50g bag, \$5.00
Darwin	PSM	NEW for Fall	1 2017/	: 1/2 lb. bag, \$17.00
Eureka Amie	PSM			
Eureka Judy	PSM	Huge rounds,		: 1 lb. bag, \$30.00
Eureka Kim	PSM	Elephant & Turban,		: 4 lb. bag, \$100.00
Eureka Myrtis	PSM	to grow super-size bulbs.		: 50 lb. tote, \$1250.00
Khabar Florbort	PSM			(Shipping included in tote price)
Elephant Jumbo Elephant	E E	Reserve no	J ¥¥•	(~~~~PP~~~O meradea in tote price)
Key to Type	Ľ			
TTurban		Price	S	
PPorcelain				
PSMPurple Stripe	Marbled	Seed Ga	riic	
PSGPurple Stripe Glazed		for		
PSPurple Stripe				
Art Artichoke		Spring		
RRocambole		I U		
E EL 1		Planti	0	
E Elephant 1-5 bulbs: \$4/bulb				
CCreole 6-49 bulbs: \$3.50/bulb		50/bulb		
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#### We get calls and letters

#### Translate article to French

**Gary Bougard of Mayo Hill Garlic, QC,** asked: I would like to use your "how to grow garlic" page, from the garlic news, on our site. With your permission and credits given of course. My partner Renee would also translate it to French. Is this acceptable?

Editor: Yes, you are welcome to use the growing article on your website. I will be updating it sometime this year as well since more information on garlic is now available. Yes, go ahead and translate it. Ail Quebec has been translating a lot of my articles as well, since my own French is very limited. Check their website to see if it's already available. It's important to get good information out on the web as there is still a preponderance of misleading stuff.

#### **Canadian Garlic?**

**Debbie DeCooman of Connaught Acres, Chesterville, ON,** asked: Do you have a list of just Canadian Garlic? I know a lot are grown in Canada but all from other origins. I grew seven different varieties this year; Ukrainian was my best, then Korean and some other Purple Stripe varieties.

Editor: Cultivated garlic is not a native plant in North America. All types were brought here from other countries so there is no such a thing as a truly Canadian garlic.

One could argue that mutants, such as Majestic, that first appeared here could be termed "Canadian". However, even that is not quite accurate as the mother plant from which the mutation sprung, came from another country. The only native garlic is wild garlic, Allium canadense and it is not large enough to grow commercially. You'll see it in my annual listing as I grow it along with the native onion, Allium textile.



#### **Garlic Curing Facility requirements**

Daniel Hoffmann of The Cutting Veg of Jackson's Point, ON, asked: I am very passionate about garlic, and have been deeply committed to the process of growing and sharing local, organic garlic since launching "The Global Garlic Project' in 2005. I grow approximately 40,000 annually in 20+ varieties. I have been looking at how to scale up garlic production to start to meet the unmet demand, in a way that supports new farmers to earn a better living. Together with another farm, we are looking at building a curing facility that could support the curing of large volumes of garlic. Could you share with us your knowledge about garlic curing? In specific, what are the optimal conditions for garlic curing? What would an ideal garlic curing structure look like? What square footage does one need per 1000 bulbs? The farm I am working with also grows mushrooms that need to be dried. Would drying mushrooms in the same space (different times than the garlic), could this be problematic for the garlic?

Editor: Thank you for asking but please recognize that I am hardly a design expert. That said, let me share a few personal thoughts: 1) Sharing a curing facility is an excellent way of keeping costs down. The harvest and post-harvest workload is the greatest and costliest. You may even consider custom curing for smaller growers if the facility has any spare capacity to make it more cost effective. Growing the number of cultivars with varying harvest dates that you do, you can fit more than one curing session into the same facility, based on cultivar maturity dates.

2) Before getting into the actual design, think of it as **only one part** of the complete harvesting process. The operations that you do before and after curing will determine the design; for example, will you cut stems and trim roots before curing, wash off dirt or cure just as it comes out of the ground? All very important. Also, what do you see happening after the curing process?

Here's one possible flow process for handling the garlic:

Lift from ground—> move to pre-cleaning facility —> clean & separate —> move to curing facility ——>cure for xx days —> cut stems & trim roots, final cleaning ——> move to grading & packing facility —> inspect & grade by size —> package & mark —>> move to storage or to market.

*This can all be contained in one building or in separate locations. One divided building is likely the least costly approach.* 

I have seen those large old hip roof barns (the ones with the hay storage on the 2nd level) used very successfully, even without being closed, provided they were located on a rise or hill for good air circulation. Ali Ross had one on her Swallowtail farm and used natural air flow (it was open on the north and south so had prevailing west winds through it) to cure bunches of garlic hanging from wires fastened at each end. She cleaned and graded outdoors. Silver Spring Farm in Ottawa have such a barn fitted with mesh racks but it's not elevated so they need to close it with tarps and use very high volume fans. They clean and sell in the same building. It's a bit messy but it works for a 5-acre operation.

If you're building from scratch, a long, low building would be the most practical approach.

3) Racking or hanging? Although I prefer hanging the garlic (primarily because we must wash beforehand), racking is likely the better option for larger volumes, especially if you do not have to worry about seed quality standards. You can design & build racks much like airy shelves with high volume fans at the ends.

4) Controlled conditions for curing; low humidity, good air flow & possibly slight increase in temperature. With high humidity summers, the curing part of the building needs to be closed to prevent entry of damp air from outside. Air flow from the fans needs to be directed both above and below the racks. Increase in temperature of **not more than 2-3** Deg C above ambient (to prevent "cooking" the garlic) will speed up the curing. If building is likely to get too hot, then power vents are needed.

5) Insect and disease control. What immediately comes to mind is the leek moth. They multiply after harvest as well. Control measures are needed in curing and storage rooms. Diseases? The past two summers have had growers reporting fungal diseases affecting garlic after curing and while in storage, even though the bulbs appeared completely healthy at harvest. What this indicates is that spores were being brought in. If that is a risk, thorough cleaning and ventilation is needed between curing sessions.

Mushrooms? I'd be reluctant on that one. Garlic suffers from many fungal diseases. Mushrooms are fungi. The two just don't appear to be compatible as you could introduce problems both ways unless you had a meticulous sanitation between uses to totally rid the facility of spores. Trust this helps, Paul.

#### Still more calls & letters

#### Diseases & Pests of garlic continue to plague us

**David Stern, Director of the Garlic Seed Foundation in Rose, NY,** called with an update on concerns over diseases and pests. Both the Eastern and Western NY Garlic Schools in March will focus on emerging and established diseases and pests. Most concern is over the Bloat Nematode and the apparent spread of White Rot as well as the range of other fungal diseases. White Rot is persistent and devastating. The Nematode was brought into New York State by infested seed garlic from Ontario.

David gave a "heads up" on two new pests, the Allium Leaf Miner, *Phytomyza gymnostoma*, identified in 2015 in Pennsylvania and the *Eriophyid mite* that has been found to cause damage to garlic in storage. The Western School is also covering spread of the Leek Moth into the region.

Garlic Press 54 has gone out and Canadian members should soon receive their copy.

Editor: Thank you David. Enjoyed Press 54. Full of great articles as always. I keep in touch with Bob Dunkel, the editor. Extracts from the Pest Alert on the Allium Leaf Miner follow.

#### Agriculture Secretary Alerts Residents of New Invasive Threat, Stresses Need for Containment

**Harrisburg, PA** - An invasive pest new to the United States was discovered for the first time on a farm in Lancaster County and has been found to have spread to at least four other counties, according to officials at the Pennsylvania Department of Agriculture. The invasive pest, known as allium leaf miner, *Phytomyza gymnostoma*, infects crops such as leeks, onions, garlic, chives, shallots and green onions. .... research suggests that the pest can be more damaging in organic, non-commercial farms or homeowner gardens. Covering onion, chive and garlic plants in February, prior to the emergence of adults, and keeping plants covered during spring emergence, can be used to minimize crop exposure to the pest. Delay planting starts until after mid-May for fall allium crops such as leeks, has also been suggested to reduce infestation rates.

Leaf miners are most likely transported with commercial cargo or in passenger baggage. ... indication that the movement of plant crops impacted by this pest could result in transport of the pests... ... utmost importance that we provide education and awareness... ... stop it from spreading anywhere else in Pennsylvania or beyond our state lines.

The adult leaf miner is about three millimeters in length and appear to be gray or black flies with a distinctive yellow or orange patch on the top and front. The yellow coloring is also present on the side of the abdomen. When resting, the wings are positioned horizontally over the abdomen. The eggs appear white, about 0.5 millimeters in length and slightly curved. The larvae are white, cream or yellowish in color and up to eight millimeters in length.

The adults appear in late winter into spring throughout April and possibly May and lay eggs at the base of plant stems. Adult females lay eggs on the base of stems... ... emerging larvae mine downwards, feeding on the bulbs. Damage caused by feeding and mining results in softening of the plant parts, increasing susceptibility to bacterial and fungal infections. The leaves of infected plants appear wavy, curled and distorted with a row of white dots.

The allium leaf miner is native to Poland and Germany and was first detected in 1850. It is currently present in Europe and has been reported in Asia, Turkey and parts of Russia and Turkmenistan.

Little information is available on the life history of the pest in Pennsylvania. Anyone who thinks they may have observed damage or a life stage of the allium leaf miner should contact a plant inspector in the regional Department of Agriculture office or Penn State Cooperative Extension. Citizens are urged not to transport any crops suspected of infection, as doing so, will increase the risk of spread.

For more information about the allium leaf miner, visit www.agriculture.pa.gov or www.agsci.psu.edu.

#### Why does garlic do this?



Anne Janssen of Perth, ON sent this picture, asking: Why does garlic do this?

I have never had it happen with the Susan Delafield but quite a bit with Red Russian and Purple Korean.

Can't figure it out. Anne

Editor: The garlic is infected with a fungal disease, one of the fusarium's likely. Once it multiplies in the soil, it affects all cultivars, regardless of group. This

year (2016 harvest), some of it didn't become evident until after the crop was harvested and in storage. If you want to be sure of the identification, send some samples to the pathology labs in Guelph. Disease symptoms from different causes look the same. Lab analysis can tell for sure.

#### Anne's Lab Results:

I got the results back from the lab today. I submitted five specimens. Good news: no fungi!! Two have blue mold (*Penicillium*) and three had Dry Bulb Mite, *Aceria tulipae*. What do you think now?

Editor: Thank you for sharing, Anne. Surprising as most of the cases of fungal disease have been from the fusariums rather than the penicilliums. Now that they identified the specific fungi, (blue mould is several types of Penicillium fungi), what you know is that no successful conventional or chemical treatment is available to treat it. Look at the management strategy on the first page of the last Garlic News for a longer-term organic solution. Dry bulb mite? This is the first case reported to me. Not much is known about its treatment and how to prevent it from multiplying. Perhaps cover the harvested garlic with powdered sulphur? However, the damage from the mites is considerably less than the Penicillium that is responsible for most of the decay.

#### Still more calls & letters

#### When to spray with BtK?



**Gary Bougard of Mayo Hill Garlic, QC** again: I hope all is well and the day after the latest snow storm finds you at home with a cup of tea. About leek moth and timing my first BtK spraying. After catching the first few male moths in the pheromone traps, which, I believe, also coincides with the first few nights of + 10 C, mating is almost immediate, eggs are laid 4-11 days later. Cornell University says the females continue laying for 28 days. Does weather, snow or temperature drops change the timing of the egg laying? How many days after catching the first few male moths in the traps, do I do my first BtK spray? In 2015, OMAFRA suggested 7-10 days. Also, is Entrust spinosad accepted by organic certifiers? Not that I could afford it!

Editor: "Welcome to spring" to you, too, Gary! On leek moth: Temperature very much affects this little beastie, and, I suspect, it's getting hardier the longer it lives in our colder climate. The OMAFRA temperature and number of days' figures are as accurate as is now available but use them as a guide, relying more on physical inspection. Last spring, you may recall, was a jolly jumper of warm alternating with cold.

#### Here's some extracts from my 2016 record:

*April 1, temp. Rose to +10 Deg C, then verycold for two weeks. April 18, first males caught in pheromone traps.* 

(Earliest larvae hatch estimate: Lays eggs 3-4 days after mating, larvae hatch in 4-11 days, possibly 26 Apr, likely after a hot day, maybe 01 May).

Started daily walk through inspections, none spotted. **April 30, 1st spraying with BtK.** Continued spraying to harvest. May: 3rd spraying with BtK. No sign of leek moth feeding, yet. Did they freeze to death?

#### June 9, 1st feeding damage found.

Despite not spotting any before the 1st spraying, they continued to appear in the traps all season. Some early ones were evidently undetected and went on to produce the next generation.

Overall, with weekly BtK spraying, leek moth damage was much less than other years. Some damage occurred indoors to cured garlic. Caught 2 males in indoor traps, killed a lot of cocoons.

So, the short answer to your question is that, yes, cold, snow and low temperature affect all stages of the life cycle, warm days shortening it and cold extending the number of days.

*BtK was effective. I will be repeating the BtK trial this year, increasing the spray frequency to try to kill more of them.* 

I rejected using the spinosad Entrust, not only due to its mild toxicity to mammals but because it was restricted to only TWO applications per season. That's no good. BtK has been used for a long time, is species-specific to Lepidoptera, does not contaminate soil or water and, the moths do not develop a resistance to it.

The HCGGA will be reporting on their trial using the parasitic wasp for leek moth control in their more northern region. Despite it having taken some 16 years to date, I believe that Dr. Mason's research will provide the best answer in the long run. Trust this helps. Paul

#### **Snow Mountain Garlic**

**Murray Balfour of Milton, ON** sent some corms from Snow Mountain Garlic to grow in the trials, saying: " I planted a few cloves of snow mountain garlic indoors on the window sill on Jan 17. Didn't check yesterday but this morning, Jan 22, they are up 1-3 inches. They will germinate here. Thought you would be interested. They are in glass jars so I can see the root growth". **Murray** 

Editor: Hi Murray. Received your package yesterday. Thank you. I compared them to the corms from Elephant that I harvest each year. Interesting comparison.

Appearance: The Snow Mountain or Kashmiri corms are smaller and darker in colour. Elephant are larger.

*Taste: peeled 2 cloves of each and chewed them, separately, and spaced in time. No detectable difference in taste.* 

I'll try planting both in pots now, and more in the garden in spring to see if they germinate and if so, how they compare.

Unfortunately, I didn't have any corms from Mary Millers Mystery Garlic. I've been growing this smaller version of Elephant as well. It, also puts out those small, hard corms. I'm sending you corms from Elephant for your comparison.



**Murray** again on March 13: "It seems like we don't have enough patience for elephant garlic corms to sprout. I have one planted Jan 22 now a sprout about 2 in. high. I only planted one.

Editor: That's encouraging. In all the years I've tried to sprout it, not even a glimmer. I won't give up on mine for a few more weeks to give them a chance.



Front 3, Snow Mountain; centre 3, Elephant; back, Wettergren bulbils

#### Still more calls & letters

# Bouquets to the "citizen scientists" of HCGGA

History records that the first bouquets carried by the brides were made of garlic. The ancient Greeks believed the smell of garlic warded off evil spirits. In Rome, a prudent

bride carried a bouquet of garlic at her wedding. Even today, florists will add the lovely star-shaped flowers of garlic chives to a bridal bouquet.

A hearty "thank you" and a bunch of bouquets, made of garlic, of course, to the citizen scientists of Haliburton County Garlic Growers' Association for their research work into the two big problems facing the garlic industry, the Leek Moth and the Stem & Bulb Nematode. See page 9 for summary report on the project.

**Deb Barnhart, Emma Horrigan and Angel Taylor** of the Haliburton team travelled to Perth to share their findings with local garlic growers. The crowd packed into the Food Bank restaurant, The Table visibly demonstrated their interest and appreciation for the excellent presentation. A vote of thanks to **Ramsey Hart**, Executive Director of The Table for hosting this event and arranging a delicious, garlicky lunch for the crowd.

Well done! And keep up the good work.

#### Farmers of Forty Centuries: Organic Farming in China, Korea, and Japan

Arriving back from winter vacation, a small parcel awaited me in the mail. **Clarence Cross of Arthurdale, West Virginia** had sent me this book by Franklin Hiram King who had studied agriculture in China, Japan, Manchuria and Korea in the early 1900s. I've just started the book and find it fascinating. It provides glimpses of the customs of common people, methods of irrigation, reforestation, land reclamation, utilization of waste, cultivation of rice, silk, and tea and more. I hope to do a book review on it for our members as many of the practices are relevant today. Thank you, Clarence.

#### **GMO Myths & Truths**



Another book for those interested in the evils of genetic manipulation of life forms is a free download from the Internet. It can be found at this link: Download GMO Myths and Truths here.

#### So, you think Chinese garlic is contaminated?

Several members called to give me a "heads up" on an article titled "**Bulb and stem nematode infestations crimp garlic expansion**" that appeared in the September 2016 issue of the Grower magazine.

The Grower article covered the 2016 GGAO meeting that dealt with pesticide trials of nine chemicals being tested as soil soaks or seed garlic dips to enable growing nematode infested garlic and harvesting a marketable crop. All the tax dollars spent on providing nematode-free Music garlic planting stock to GGAO growers was for naught, likely due to clean seed being planted in infested ground.

The search for the elusive silver bullet continues!

Two deadly chemicals with active ingredients *fluopyram* for use as both a clove soak and soil drench, and *abamectin* for use as a soil drench, appear to be the ones being considered for future use in reducing losses due to nematodes. Both are on the European Union toxicity blacklist.

So, you think Chinese garlic is bad? None of the pesticides tested are approved for use on garlic and there is no mention of any testing to determine how much toxicity that will remain as residue in the garlic grown with their use. Scary, eh?

The Grower magazine archives are on the **issuu** website and may be read, or downloaded to your computer.

Wouldn't it simply make more sense to clean up nematodeinfested fields with proven cover crops and develop a supply of nematode-free seed garlic instead?

#### Stem thickness is an indicator of bulb size

Is there a relationship between stem thickness and bulb size? Look at the picture below. There is a large difference in the thickness of the stem between the marked plant and the



stems of the other ones in the row. Thickness is a good indicator of the size of the bulb that you will harvest in 2-3 weeks. This garlic plant was clearly the one that had adapted. It produced a Colossal 71-gram bulb. The remaining Burgundy in the row came out their usual Small Tube size at less than 20 grams. This bulb was used to

develop the select Burgundy planting stock. From then on, we had large bulbs.

Stem thickness does not apply to Silverskins nor to some Glazed Purple Stripes like Purple Glazer that all have slender stems. Thick stems are a definite indicator in Artichokes and Porcelains, less so in Rocamboles.

#### Cousins and relatives of garlic

A few popular cousins of garlic to grow.

#### Red Shallots, Allium cepa var. aggregatum



French Red Shallots are called the "elegant onion" being prized by discerning chefs for their flavour. They are a multiplier, hardy, can be spring or fall planted and can be grown from either seed or sets. Multipliers or potato onions grow like shallots, either from seed or sets.

#### Elephant Garlic, Allium ampeloprasum



Not garlic at all but a giant-headed leek. Grows tall, bulbs are huge, up to a lb. or more. Produces a seed head like onions. Grows little, hard side corms. Taste is quite bland.

#### Mary Miller Mystery Garlic



Discovered by Jayne Miller on their family farm in Oregon. Named after her Aunt Mary Miller who once lived on the farm. Believed to have been brought from Europe in 1830 by a French-Canadian trapper serving in the Lewis and Clark Expedition. Looks like to Elephant Garlic, but a shorter plant, and bulbs having a stronger garlic flavour. Jayne claims that bulbs go to 2-3 lbs.

#### Wild Garlic, Allium canadense



Wild garlic is a native plant that adapts to cultivation. Two tiny cloves with a powerful garlic flavour.

#### Wild Leek, Allium tricoccum



Wrongly called "wild garlic" this pungent plant grows in lowlands and forest across Eastern North America. In the U.S., it's called "ramps" after its U.K. cousin, Ramson's garlic, *Allium ursinum*. Leaves and bulbs are both excellent. Hard to cultivate. Threatened with extinction.

#### The common onion, Allium cepa



There are an endless number of onion varieties in every size and many colours. Grow as many as you can