



THE GARLIC NEWS

Connecting the Canadian Garlic Network!

Issue 5 Fall 2005

We're starting the 2nd year of publication! Welcome to new readers and welcome back to returning subscribers. The large numbers mean printing costs can be kept at the same, low rates. The Garlic News will be better than ever before. Keep you letters and articles coming. That's what's needed to have a truly grower-friendly newsletter. You send it, we'll put it together.

The Garlic News has a new slogan! In the Fall Issue, the words, "Connecting the Canadian garlic network" will replace "Your Window to the Great, Glorious World of Garlic" in the banner and all promotional material. The words better describe what the Garlic News is all about; a forum for garlic fans to exchange views and keep abreast of happenings in the world of garlic in Canada. If we don't connect, let us know!

Four Times a Year. The News will continue to come out four times a year, the issues being planned to reach you in time for the four garlic seasons: planting; winter planning; spring tasks and the summer harvest.

A big 'Thank You' to all of you who have helped to promote the Garlic News and get the word out. We now have members from Newfoundland to Vancouver Island and from every province in Canada, with new members joining every week. The News truly is a garlic lover's national network.

Do you have a gardening friend or relative? Give a gift subscription. It will make a lasting birthday, Christmas or friendship gift. They'll love it. A gift subscription form is included in this issue.

We're looking forward to the next year of the Garlic News and our garlic gardening friends that we meet through its pages. We trust that you will continue to enjoy reading it as much as we enjoy putting it together for your garlic pleasure.

Great garlic planting to all! Mary Lou & Paul

Eastern Ontario Garlic Field day enjoys record turnout! In its 6th year, the educational Field Day at the Beaver Pond Estates Garlic Variety Trials site drew over 50 growers from as far away as the Eastern Townships of Quebec, Burlington in southern Ontario and points in between. See page 7 for report on the Field Day.

Weather, Plague and Pestilence

Contrary to popular beliefs, garlic is not immune to disease, pests and harsh weather. It is as vulnerable as any other vegetable to all three of these enemies.

In mankind's 10,000 years of agriculture, growers of food have faced losses from disease, insect and animal predators and devastating weather, bringing them starvation and death.

Little has changed over thousands of years. Scientists believe that the world has again reached the brink of starvation due to increasing populations, loss of arable land to deserts, climate change and dwindling food stocks.

Hard to believe in a country where wastage is a way of life!

The Garlic News continues to provide growers with the information needed to grow garlic successfully.

In this issue, read about weather in "the Garlic Crop in Eastern Ontario"; pests in "Leek Moth Update" and Mike Cerelli's article on the Bulb and Stem Nematode; and, Jennifer Allen's advice on the fusarium basal plate rot disease.

There is no need to panic. These sorts of enemies of plants have been around for at least 10 millennia. As a farmer, you just have to learn enough about them so you can take up the necessary hoe to weed them out of your garlic patch!

Garlic Planting and Harvesting Survey

Boundary Garlic and The Garlic News are working together to produce a map of Canada showing successful planting and harvesting dates for garlic in different locations and climatic zones. We would appreciate your participation.

Please fill in the attached survey, putting in any information you consider pertinent to an understanding of the factors affecting planting and harvesting dates. Use additional pages if you wish. Under 'variety' it would be useful if in addition to the name you can say whether it is a soft neck or a hard neck, and which group it belongs to: porcelain, rocambole, purple stripe, asiatic, artichoke or silver skin. Also note if it is an early, main crop or late variety.

We will assemble the data collected and publish the results in The Garlic News and on www.garlicfarm.ca. If you wish to have the results mailed or emailed to you please indicate this when you return the survey to Boundary Garlic.

The survey form will also be posted on the Boundary Garlic website if you prefer to respond electronically

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Connecting the Canadian Garlic Network

Fall 2005 Issue # 5

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Published By : Beaver Pond Estates

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Cost: \$15.00 for 4 issues mailed in Canada.
Single copy price \$5.00. Outside Canada \$15.00
US and \$5.00 US respectively. *Back Issues to
complete your set are available.*

Advertising inquiries welcome.

ABOUT THE GARLIC NEWS

The *Garlic News* uses a newspaper column layout and larger print size for easier reading. The wider margins and 8 1/2 x 11 size paper are to enable growers to save copies in a standard 3-hole binder. In keeping with our personal commitment to conservation and environmental protection, envelopes have been eliminated where possible.

Printed on recycled paper.

EDITORIAL POLICY

The *Garlic News* is a new publication. It carries on from where the *Garlic Newsletter* and *The Voice of Garlic* left off. Its purpose is to enable farmers and gardeners to grow better garlic and enjoy it more. Articles and contributions are welcome. They will be published subject to space and suitability. Letters and articles may be edited for length and content. The *News* is distributed in Canada by subscription.

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Articles should be no longer than 400 words.

Pictures may be either colour or B&W

Deadline for the Winter Issue is December 5.

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Bob & Bunny Lemessurier & Ed Haines accept the Woodman Trophy on behalf of the volunteers at Silver Spring Farm. See story on facing page

News from the garlic patch

This spring, we said: “**Good Harvest Anticipated!**” After a delayed spring in most areas of our Eastern Ontario region, in some cases two to three weeks later than usual, an abundance of spring rain and early summer heat spurred a very rapid growth. Scaping was a bit behind by a few days. Excessive rain last fall caused some losses and low snow cover along with severe cold resulted in considerable winterkill, but, despite all that, growers hoped for a good harvest. Many reported strong plants with thick, heavy stems, usually a sign that bulbs will be large. Harvest being a few short weeks away, we’ll soon know”.

Now, we say: “**Harvest Only Fair.**” Well, once the bulbs were out of the ground, many growers were disappointed. Bulbs were smaller than desired and the crop was less. See the report on page 7, “2005 Garlic Crop in Eastern Ontario”.

Nellie Melnick of Pembroke, Ontario sent me 6 bulbs of garlic she got from Chiloe Island, Chile, which she has been growing for 10 years. This island is famous for its diversity of vegetable and rare seeds. We will grow these bulbs in the Small-Plot Garlic Variety Trials starting this fall.

Diversify Your Planting. Lack of biodiversity leaves major crops vulnerable to disease, causing famines and starvation. The Irish Potato famine in the 1830s was one example. The *Phytophthora* potato blight destroyed the entire crop as the farmers grew only one variety, and there was no genetic diversity in seed banks or elsewhere to fall back on. Gene banks also play a vital role in maximizing the use of wild and cultivated varieties in crop improvement through selective breeding. Garlic needs the same diversity.

New Organic Course at Guelph

University of Guelph, nest bed for GMO research and promotion of synthetic chemicals in agriculture, has bent to student and consumer pressure and will allow organics in its degree programs starting this fall. The new Organic Agriculture program will lead to a Bachelor’s degree, BSAG. See code OAGR in the 2005-2006 undergraduate calendar.

Associate Professor Amy Clark, who is leading this new degree course being offered, is very optimistic. While admitting that the expertise at the college may be less than desired, they can draw on many nearby talent pools. The organic course is “consumer-driven”, unlike the highly controversial GMO research, which is federally and provincially funded, and pesticide training, which is driven by the chemical industries.

Ted Maczka’s new dark green van sporting his trademark bulb on top has been doing the rounds of garlic festivals in Ontario and will soon be heading off to the USA for the Hudson Valley Garlic Festival. With the high price of gas these days, we suspect that his van burns nothing but 100 proof garlic fumes!

Speaking of Ted, this summer he reported something he hadn’t spotted before in his garlic patch. Many of his F40 Silver skin were bolting to top sets!



Merle & Jack Fraser, volunteers, pose with the Woodman trophy and the winning braid that helped Silver Spring Farm win the 2005 awards.

Champion Garlic Grower 2005:

Silver Spring Farm, Ottawa, Ontario

Reserve Champion Garlic Grower 2005:

Sep & Virginia Bonner, Athens, Ontario

Runner-Up: Ted Maczka, The Fish Lake Garlic Man

Started in 1997, the purpose of the competitions is to encourage excellence in the local growing and production of garlic and to reward such excellence by the presentation of awards. Silver Spring Farm took 1st prize in three of the four required events, walking away with the Woodman Trophy as Champion Garlic Grower for 2005. They received a certificate of award, rosette and a cash prize of \$100.00 donated by Debbie DeCooman.

The Reserve Champions, Sep and Virginia Bonner, the 2004 Champion Growers, received the Woodman 2 Trophy, rosette, certificate, and a cash prize of \$50.00.

Presentations at the festival were made by Paul Pospisil, Director, Garlic Awards Foundation.

The Eastern Ontario Garlic Awards (Woodman Trophy) are the official garlic competitions conducted annually in the Eastern Ontario region.

Globalism. “Thank goodness for the beginning of the end of globalism.” Can we now return to growing our own healthy food again? Stop importing pests, diseases and numerous other problems, to say nothing of the loss of jobs here at home? What about the fleets of trucks, ships and planes all belching foul oil smoke into the air while bringing “cheap” food from the far corners of the globe? Good riddance to globalism! It can’t go soon enough.

Basic Records Needed For Your Garlic Patch.

Mark rows with Variety and Strain. In a Garden Book, record year, planting, emergence, scaping and harvest dates, variety and strain, fertilizer used, etc. Count, measure or weigh both planted and harvested bulbs and make notes to help you next year. You’ll grow better garlic!

Calls and Letters From Our Readers

Reg Forbes called to give his new address in Smiths Falls, having just moved from Campbellford. Amongst the myriad of packing crates, like a true garlic aficionado, he found my number, called and said he'd renew his membership to the Garlic News. Now that's devotion to the world of garlic! Although he planted very little garlic last fall due to the impending move, he harvested his small crop before moving with superb results. "Now, Reg, instead of unpacking your dishes, you'd better find a rototiller so you can plant garlic in your new home garden!"

Lawrie Henrey of Klipspringer Farm in Gibson's B.C. sent this report on the Majestic garlic he planted last fall: "Planted 24 cloves Oct 4, 2" depth, 5" spacing in sandy soil enriched heavily with compost. Mulched Nov to April with 4" straw cover. No snow cover, no winterkill.

Garlic sprouted Jan 2005. Watered regularly with drip irrigation @ 6" centres for 10 minutes each night. July 25, 2005, harvested 1 Super Jumbo, 3 Extra Jumbo, 3 Jumbo, 4 Large Tube, 3 Medium Tube, 1 Small Tube and 6 culls as bulbs were split open. Not weighed as still curing. We are satisfied!"

Thank you for the feedback, Lawrie. This gives me the first report on the performance of Majestic in the warmer climate of B.C. According to my estimates, that gives an average weight of 47.5 grams or size Jumbo, excluding the culls for which no sizes were given. That's better than the yield we obtained here in Eastern Ontario last year!

July 28- **Mike & Eileen Bernard** called from their farm in Ormond, "thank you so much for your prompt response, it was very prompt, we just sent it late last night, yes, you'll be hearing from us, thank you so much".

Editors note: We try to get back to all our callers, whether phone or e-mail as soon as possible. Our garlic grower contacts are great people. Sometimes it means staying up to the wee hours to do the mail, but what the heck, that's why we retired, n'est ce pas?

Jack Fraser called on August 04. "Some of our bulbs are showing pale yellow wrappers. Is this fusarium and should I dispose of the bulbs?"

"No, Jack. The garlic is perfectly good to eat as long as the bulbs are firm. Yellowing of the usually porcelain coloured bulb wrappers occurred this year, likely an effect from the extremely hot soil temperatures just before harvest. Remember that colour is only skin deep in both people and garlic. It's what's below the surface that counts.

This spring, **David Hahn** wrote: "Oh mighty garlic guru, a number of my garlics were not planted deep enough and consequently were heaved out of the soil over the winter. Some of the bulbs are just out of the soil and the roots are entirely in the soil and others the roots have an inch or 2 of root exposed before making their way into the soil. The former I'm inclined to leave as they are and the latter, I'm inclined to rebury. What would be your wise and considered advice?" Incidentally, the reason they were not planted deep enough is because the garlic planting tool, which I built

from the design that you generously shared with your followers, did not make deep enough holes in some parts of the garlic plot. My planting assistants did not realize the significance of shallow planting and their supervisor did not catch the problem. Therefore not a design flaw in and excellent tool, but just a warning to some of us to pay careful attention to depths of holes.

Many thanks from your devoted disciple.

Reply: Hear ye, o devoted disciple of garlic! The poor, exposed roots and bulbs of the garlic must be hidden from the shame of the elements lest they wither and die. Take some tool of sufficient purpose and use it to move soil from between the rows to cover the bulbs and roots. A V-shaped tool somewhat like a cultivator which, when dragged along, makes a trench while moving the soil to the sides to achieve said purpose is one of good purpose. Both those garlic perched up on the spindles of their roots like the heron seeking out the little fish in the waters of the swamp and those garlic nesting like a plover on its nest in the meadow should be treated thusly as both are at risk of serious harm. A further advice to avoid such pitfalls in the future planting season is to employ those assistants of sound weight to stand upon yon dibble tool, sinking it well into mother earth while those of lighter body be employed with the dropping of garlic into dibbled holes. Avoid too sturdy a dibble stander-onner lest dibble penetrates earth too deeply and arouses the ire of the men of China.

Hello, Ed! **Bernie Bayer** was just up here from Rochester. He suggested that I contact you regarding your organic method using ground cover. Didn't give any details but said you grew unbelievably large bulbs. Is it a trade secret?

Ed Fraser replied: Hi Paul, Great hearing from you. Bernie is a great fellow garlic grower. No secret to cover cropping. I use sorghum-sundangrass in the rotation. It adds a lot of biomass to soil, cleans the soil, and suppresses weeds. It has worked very well for me over the years. I will check into your newsletter a little later when I have time. Today I am getting equipment etc. ready for harvest. Might start pulling the soft necks this week. Thanks, Ed

Randy White of Mission, B.C. wrote: I asked you about this problem, and you thought it may be white rot that found it's way up from the United States. You were very much correct. When I dug up the sick garlic, the white fungus rot matched an Oregon State agriculture photo on garlic disease. More than half the Puslinch in that far corner of the property had to be burnt. The strange thing about that far corner, it produced a dozen or so Susan Delafield garlic bulbs that were completely clean of disease. They grew very strong and produced large 3" to 3 1/2" bulbs. I thought the soil drainage needed correcting. At this time we are constructing a few raised beds away from any trouble area. We are going to fill the four beds with a landscaping companies rich, dark topsoil, and a sterile organic fertilizer. Each bed is 12' long X 3' wide and 1' deep. This should be enough to grow about 150-200 garlic next season. We'll grow other vegetables other parts of our garden, just in case this year was for white rot. Not taking chances.

More Calls and Letters From Our Readers

Christine Rumble wrote:

Help! I'm in a Garlic Dilemma! I am still not sure when you harvest your garlic? I have checked info on the web and I am still unsure. Last year I left the garlic in too long. I have read articles that this is the most common mistake - waiting too long. I plant my garlic in the fall before Thanksgiving weekend. My plot is located around the Barrie, Ontario Area. I have just finished removing the scapes one week ago. So far my main garlic varieties are Music and Carpathian. Can please advise me what signs I should look for in the garlic plant?

Editor's reply: Hi Christine; I'll quote from one of my growing articles:

Exactly when to dig the bulbs is a little tricky. Lifting them too early will give undersize bulbs that don't store well, and a few days too late will result in bulbs lacking the protective wrappers around the cloves. I've found that you have only about 3-7 days in which to harvest most strains successfully.

Watch the Greens. The green leaves start to die from the bottom up. When the bottom 3 or 4 leaves are dead and the top 5 or 6 are still green, its time to lift the bulbs. If you're not sure, dig a bulb or two and check. A mature bulb is fully swelled, well sized and has some partially decomposed wrappers. Pick a dry day for harvesting.

Handle Garlic Like Eggs. Garlic is very fragile and should not be bumped, bounced or dropped. Manual harvesting is best, as even the smallest bump will bruise the garlic, causing early decay and loss of quality. (See article, "Aide-Memoire: Mechanized Garlic Production, Issue 2, Winter 2004 for more on this topic).

Carefully lift the bulbs with a garden fork and take them, greens and all, for cleaning and curing. Don't leave garlic in the hot sun. Move it to a shady spot to avoid 'cooking'.

Cleaning. If soil is a sandy loam, any dirt can be gently brushed off. Clay soils tend to adhere to the bulbs and may need to be washed off with a gentle spray of fresh water. Trim roots to 1/4 " and carefully remove any dirt from the roots.

Music should be ready in about 2-plus weeks, Carpathian a bit later. Always dig a bulb or two to check and see if you are happy with it. If you are, lift the rest of them. If it still looks a bit small, check in a day or two. It'll come with experience.

On the subject of grower controls for the bulb & stem nematode, **Simon de Boer** of Langside Farms, wrote:

As an organic grower of garlic I think that maintaining a 4-7 year rotation out of garlic and use only strong clean seed.

I try to prepare the garlic growing area well ahead of planting to help the soil reach a balance ready to support good root growth. I believe it is important to manage the soil so as to avoid compaction and breaking down soil structure with excessive pre-plant cultivation. Anything that reduces stress on the planted garlic will allow nematodes present be they good ones, or bad ones to enhance or hinder good garlic growth. I believe nematode problems are the result of our missing the mark somewhere.

Conventional production with pesticides kills the messenger and we'll never learn the true cause of the problem. I'm still learning and ready to learn and if anyone has additional suggestions, drop me a note at sdeboer@wrightnaui.ca.

There is no quick fix to quality organic garlic.

Thanks for sharing your thoughts, Simon.

Bob and Pat Brown of Manitoulin Island wrote:

Thanks Paul. Again we won't be able to make the festival but will put it on our calendar for next summer. We have decided to try and keep the summer free for ourselves so we will be able to travel a bit more. I know Bob would have loved to have entered his garlic in the competitions, as he was quite pleased with it. We have sold out and still have people appearing on the doorstep to buy some and have left orders for next year. So that is a good feeling as well and helps to defray the costs. We will keep in touch.

Great news on your local marketing! For our readers. Check your map to find Manitoulin Island on Georgian Bay to see how far the growing of garlic has spread in Canada.

Daniel Hammerli asked: How do you tell if your garlic is fully cured. Please advise.

Editor's reply:

The leaves should be fully brittle and break up when you touch them; the stem nearest the bulb should be hard like wood for the hard necks and completely manipulability for braiding in the soft necks. If you've had reasonably dry conditions during curing, this should be the case after 12-14 days of curing. There should be no "damp feel" in any part of the stem or bulb wrappers.

John Bain asked: Thank you for the garlic order form. Do you have any suggestions as to what varieties may do better than others?

Editor's reply: Hi John; For both new and serious growers, I always recommend growing at least one strain from each of the 5 main Varietal Groups, so as to get an idea on major differences. Otherwise, It's like trying to compare varieties which have little in common with each other. For a complete comparison, see Report # P-02-2004 published in the Spring 2005 Issue of the Garlic News. It rates them all. Trust that helps.

Manure & Compost question from David:

I have a piece of problematic soil where I intend to plant garlic this fall. It's very heavy soil. It's grown buckwheat and general garden crops for 3 years and now its time to plant garlic there. I believe the ideal prescription for this soil would be to add compost to it. I don't have sufficient to use. Can I use manure, hopefully rotted fairly well, to improve the structure? I would get dump truck loads in if this would be acceptable. the farmer also has horse manure with sawdust on offer. Two years old perhaps? What do you think? Thanks

Editor's reply:

Sounds like a good plan. Old manure is compost The sawdust, now being used more and more for bedding, will increase the acidity of your soil so if you are at the 6.0 or lower, it may not be a good idea. If your soil is in the 6.0 - 7.0 range, it should pose no problem. A caution though. If you intend on certifying organic, the manure has to come from a certified organic source. Otherwise, use it, lots and lots and lots of it. That miniature Russian Red of yours will come out looking just Colossal!

Sharing information helps all concerned with growing better garlic. Keep those letters coming!



Report From The Geographical Centre Of The Country

Ted Meseyton is the Singing Gardener and Grow-it Poet and resides in Portage la Prairie, Manitoba

Here where I live at Portage la Prairie in southern Manitoba, September has been a phenomenal month for weather. Lots of sunny skies, temperatures hovering in the 20 to 30 Celsius range and

just a touch of rain now and then to help settle dust. No frost so far either as of mid-month. I suppose you could call it near perfect harvest weather for area grown potatoes, onions and carrots. Taking up these crops is well underway. Yes, this is spud country, with two large potato-processing plants locally, our Canadian giant McCain Foods and Simplot Canada.

I write a gardening column for the local Portage Daily Graphic newspaper and another column for Grainews, a national farmer-oriented publication. In Grainews, you'll get a lot of good tips. My columns include anything from hands-on gardening and folklore to herbs and herbal remedies, pest control formulas and home recipes.

Gardeners I've met over the years grow their own garlic for personal use and many of them are well up in years. Doesn't that say something about garlic's longevity properties?

There are only a handful or two of hobby garlic farms and small garlic growers here on the prairies. Their garlic bulbs are often available at Farmers Markets in season. They also direct sell to established clients such as eating places and specialty food stores.

My recipe for a health promoting drink made from pure maple syrup, lemon juice and red hot pepper powder will appear in a future issue.

Manitou Garlic Festival

I took in the two-day, 4th annual Honey, Garlic and Maple Syrup Festival at Manitou, Manitoba, which wrapped up on Saturday, September 10th.

Two of my sons, Chris and Curtis, "Buttons and Brushes," did a lot of busking. Chris is a professional accordion player and Curt performs as a percussionist-drummer. I toted along my guitar and did tunes such as I'm a Garlic Guru, The Singing Gardener Yodel, Oh It Must Be the Tomatoes and Lily Sweet Lily.

Inside the tents and Manitou Arena, vendors demonstrated their various crafts, wares, homemade goodies and fresh vegetables with a view to making a sale.

Hundreds upon hundreds of people, probably three-quarters of them seniors and retired folk, were milling about everywhere, spending their money to the delight of those with something for sale.

Even though I grow my own garlic, I came home with some pretty darned good-looking, well-cured, pungent bulbs. It's always good to try garlic grown by somebody else. Along with garlic, I bought the best homemade mustard I've ever had the good fortune to sample, plus some Manitoba maple syrup.

Hundreds of tickets for Saturday's gigantic buffet were quickly sold in advance. To the delight of the hungry crowd, everything on the menu had been flavoured with garlic, honey or maple syrup.

Just to give you a brief example: there was garlic roast beef; pork roasted with Manitoba maple syrup and herbs; farmers' sausage with honey-mustard glaze; honey coleslaw; garlic roasted in olive oil and an apple crisp dessert served with honey-yogurt sauce.

Loose Soil And Raised Beds Equal Superior Garlic

Even growers with long experience still sometimes find it a challenge to grow high quality, well-developed bulbs that are long keeping and good tasting.

To get absolutely dramatic results with onions and garlic, plant them in raised beds. In other words, shift planting your garlic cloves from wide rows to mounds of good growing, raised beds of soil that is compost-enriched.

Soil looseness is a key to superior garlic. Raised beds with plenty of humus are like a honeycomb with plenty of air spaces. This encourages garlic roots to grow rapidly and can go as deep as 2 feet.

Plant your biggest and best bulbs every fall. There's no difference between big or small cloves. They all share the same genetic material and the cloves produce roughly the same size bulb. Garlic also needs a winter chill to produce its fascinating bulbs. Cold induces garlic to sprout, so I say, "never store garlic in the fridge".

Since I'm a folklorist, let me pass along this old proverb: When it comes to mothering cures of various maladies with at home remedies; garlic is "better than ten mothers." There's lots of anecdotal information that eating garlic regularly keeps its lovers healthy and happy. Just don't substitute garlic for proper medical care, if need-be.

Garlic Field Day 2005 A Big Success

By: Paul Pospisil

The 2005 Field Day was the most successful yet, drawing over 50 garlic growers and research personnel to our little Beaver Pond Estates Farm.

Growers doing a walk through the **Small-Plot Garlic Trials** in progress saw 97 types of garlic in a small plot measuring 50' x 50'. I pointed out the 45 proven strains available to growers in 2005, the 26 new strains at various stages of trial and a further 26 proven strains grown as "seed savers" only to preserve the genetic stock. Numerous other trials were also in progress: the best size of seed trials; strain improvement by the bulbil method; evaluation of mutations; spring planting trials; a first try at forcing true seed from bulbils; the wild leek and wild garlic patch; other alliums; elephant garlic in northern climates; and, other question-specific trials.

This private organic research project is unique, being the only one of its kind in Canada. Started in 1991 to develop cultural methods for harsh climates, it changed in 1996 to the evaluation of varieties and strains of garlic. Now, it is changing its orientation from evaluation to development of improved seed from bulbils and natural mutations.

The Leek Moth Update provided by **Jane Allison and team** appears on page 6 of this issue.

Margaret Tourond-Townson informed growers about the COG Organic Directory and **David Townson** talked about the Organic Growers Course in Ottawa coming up.

Ted Maczka, the Fish Lake Garlic Man, was on hand during the day providing advice on garlic.

The afternoon session dealt with marketing, both local by means of the garlic festivals and, as well, the broader aspects as impacted upon by the import/export trade.

Mary Lou had set up a small display of value-added garlic items that had proven successful at garlic festivals and farmers markets.

Gary Briggs of the Canadian Food Inspection Agency gave a status report on the Organic Regulation in preparation. The regulation will recognize three categories of organic food; first, the import/export of organic goods; second, the growers who move food between provinces; and, third, the local producers who serve only the domestic market.

He was followed by **Luc Fontaine** of the Quebec ministry of agriculture who provided an impromptu talk on how organics is protected in Quebec for the benefit of growers.

David Hahn spoke briefly on the National Farmers Union and what can it do for garlic growers and market gardeners.

Debbie DeCooman handed out information on the 2005 Seaway Garlic Festival & Agri-Tour to be held Sept 10-11 at their Connaught Acres farm near Chesterville.

Christine Kosman gave a short presentation on the EFAO Initiative (see page 9, Garlic News Issue 2) and the 6th Annual County Garlic Festival coming up in Picton on August 20, inviting growers to participate.

The day ended with a spirited discussion period on a wide range of issues of interest to garlic growers. There was no doubt that the Field Day was a day well spent in garlic networking among the growers.

Mark your calendar: Field Day 2006 on Sunday June 25.

The 2005 Garlic Crop In Eastern Ontario

By: Paul Pospisil

Was it a good year or was it a bad year for garlic?

Well, the more growers I talk to, the more varied responses I get and the more difficult it is to generalize on a regional basis. This year, I really don't know!

We are into climate change. There is no doubt about it. Climate change means extremes in weather. It also means that local microclimates can have dramatically different effects on crops just a few miles apart.

While we thought that the whole of Eastern Ontario was suffering drought conditions with our lakes and rivers drying up, much to my amazement, driving to the Seaway Garlic Festival in early September, we passed fields flooded with water from heavy rains!! No drought at all in that area.

Let's start at last fall. After planting, heavy rains. Two growers reported that their cloves were washed away.

Winter: Very little snow cover. Harsh, freezing temperatures. Winterkill in many over wintering plants.

Spring: Strange! Maple sap didn't flow. Too cold or too warm? Garlic did not emerge as it normally does around April 1st. Some strains were 2 ½ to 3 weeks late. Now, that shortens the growing season by a lot!

Scaping: Just a bit late, but the plants were shorter this year.

Summer drought: Very bad. Scorching hot temperature, day after day. Harvest came on prematurely, shortening the growing season even more. The harvest was compressed.

Disease: Growers reported more than usual incidence of dried tips and dying plants. No apparent reason, other than the plants were stressed from lack of water.

The proof of the pudding: That's when the bulbs are actually lifted from the ground.

Well, in our own trials plots, we were quite pleased, overall. Although losses from winterkill and late emergence were more than usual, bulb sizes from the remainder were very good. The soft necks, being warm climate garlic, produced the biggest bulbs ever, no doubt, because of the hot, dry summer. So large, in fact, that we called this, "**the Year of the Artichoke**". They were huge!

Porcelains were excellent with very few below grade size. The worst off were the Rocamboles and the short Purple Stripes. They seemed to be the hardest hit by the summer lack of water and high temperatures.

Although a few growers reported large crops, reports from most other growers across the region indicated that the crop was down, much less than other years. Checking the garlic stands at the festivals, there was a distinct lack of large bulbs. Sizes ran a maximum of 2" with most being much smaller. The largest grower in the region had a table full of bulbs no bigger than Large Tube!

I get a lot of calls for seed garlic and try to connect buyers with growers. This year, it has been the most difficult of all, as every grower seemed to sell out earlier than usual.

Overall, I must conclude that the average garlic crop in Eastern Ontario this year was smaller than usual.

Tip burn in garlic

By: Jennifer Allen, Vegetable Crop Specialist, OMAFRA

This season many garlic growers have been experiencing yellowing and dieback of leaves and have wondered what's causing this to happen?

Tip yellowing and dieback in alliums, including onions, garlic, chives and shallots can be caused by abiotic factors such as plant overcrowding, drought, salt stress, wind desiccation and occasionally ozone damage. As well, these symptoms can be caused by a biotic factor such as Fusarium basal plate rot. The organism responsible for Fusarium basal plate rot is *Fusarium oxysporum cepae*.

This mould is a soil organism that is capable of surviving for long periods of time. The fungus can enter healthy bulbs directly, or through new or old wounds such as those caused by insects, pink root infection, or cultivation injury. Spread occurs season to season through infected soil or via contaminated sets or cloves. Within infected fields, affected plants can be either localized or scattered throughout the field. Although it is not believed that bulb-to-bulb movement in storage is significant, this may be a concern for garlic growers who store bulbs for garlic seed stock.

Roots and basal plates can be infected at any age. Symptoms include a gradual yellowing and dieback of leaves. When infected plants are pulled the roots are pinkish-brown and if cut vertically, a discolouration of the plate is evident. Optimum disease development occurs in wet soils when soil temperatures reach 25 to 28°C.

Unfortunately, once a field is infected there is no curative measure that can be taken. Infested plants should be removed from the field and destroyed. Preventative control measures that can be taken to help reduce the risk of this disease next year include:

- Crop rotation to non-susceptible crops (non Alliums) for 3 to 4 years.
- Plant in well-drained soil, preferably on a raised bed.
- Soil fumigation.
- Manage soil insects (e.g. onion maggot) to reduce potential entry points.
- Dip seedlings and cloves in fungicide before transplant.
- Plant resistant onion varieties and/or disease free garlic cloves or bulbils.



Basal rot of garlic caused by Fusarium

This disease is controlled by proper crop rotation with non-susceptible crops for four years, removal of infected plants, and planting disease-free seed.



Many Queries ---

We received a lot of calls this year from growers concerned about both tip burn and mortality of garlic plants before they were ready to harvest. Copied below is an interim reply typical of the ones I gave to growers' queries while waiting for replies from government specialists (I had too many reports to publish all the different grower observations):

Hi David; Just a follow up to your query. We did our usual pre-harvest check in the Trials Plot and removed yellowed plants. It would seem that the % of plants affected is higher this year, likely due to the heavy rains earlier in the year followed by very hot weather, ideal conditions for fusarium basal plate rot to develop. I've copied the description from the OMAF paper for you. The US Compendium of Onion and Garlic Diseases doesn't throw any more light on it. Since the disease is carried in the soil, crop rotation and using good seed helps but there is no fast cure for the problem.

You'll find that you'll be able to salvage many of the diseased ones for table use -- BUT, DON'T plant any that show even a bit of root decay or discolouration as there is a risk of some of the soil on the bulb spreading to your new planting!

Rotation, giving the soil 3 or 4 years with no alliums, seems to be the best answer to cleaning up the soil.

I'm getting more reports so it appears that the hot summer seems to be the main culprit. And, yes, it appears 0 that Porcelains are affected more than other Varietal groups. Paul Pospisil

At first, the problem appeared to be only fusarium triggered by a very hot summer following a wet season. However, later information indicated that it could have been either fusarium or the bulb & stem nematode as the physical symptoms from these are very similar.

The articles by Jennifer Allen (opposite) and Michael Celetti (page 9) are to provide growers with an early "heads up" on these two potential problems in garlic fields. I will be following up next year with the growers who reported problems. Early examination of samples by a lab gives you a better chance of minimizing future crop loss and starting to take corrective action.

Basal Rot

From Manitoba Website

This soil-borne Fusarium disease prefers warm soil temperatures and is common in Manitoba. Early symptoms include yellowing and tip dieback. As the disease progresses, the plant will collapse, the roots will decay and the basal plate will have a pinkish colour. Secondary rots often follow. Crop rotation and the use of disease-free transplants are recommended.

Growing Clean Seed

By: Paul Pospisil

Are your soil and seed garlic contaminated? Well, grow some garlic seed from bulbils. Be sure to use bulbils that have not touched the soil (hand pick them). Plant in pots with clean, new soil or in a clean patch of garden. See Issue 4, Summer 2005 for two articles on growing from bulbils, one by Sonia Stairs and one from Beaver Pond Estates. You can have a clean seed supply in just a few seasons.

Managing the Bulb and Stem Nematode Menace in Garlic

Michael Celetti, Plant Pathologist, Horticulture Crops
OMAFRA, Guelph, Ontario

The Bulb and stem nematode (*Ditylenchus dipsacci*) is a microscopic worm like organism that can be a very destructive pest of garlic, onion, leek as well as many other host crops. Unfortunately, this pest has been spreading recently on garlic cloves used for seed. Regardless of the crop being grown, the bulb and stem nematode has the potential of causing complete crop failure. The nematodes can spread through irrigation water, in infested bulbs or cloves as well as on contaminated equipment, footwear and clothing.

The bulb and stem nematode survive freezing or extremely dry conditions in a dormant state in infested plant debris, infested soil and between the scales of infested bulbs of Allium crops (onion, leeks, shallots, garlic). Under wet conditions the nematodes become active and swim in the film of water in soil or on wet plant surfaces. They feed on leaves and bulbs but rarely roots by piercing plant cells with their stylet or hypodermic needle-like mouthpart. During feeding, they inject saliva containing an enzyme into the cells, which can cause distorted growth of the tissue. Leaves of severely infested plants turn yellow and dry prematurely resulting in stunted plants. Once the nematodes have caused initial damage to the growing garlic plant, hot dry weather will often exacerbate symptoms even though this type of weather does not favour the spread or activity of the pests. Other fungi and bacteria often enter wounded bulbs and cause further degradation. Infested garlic bulbs tend to be soft, shrivelled, discoloured and lighter in weight. The basal plate and roots of severely infested bulbs may also appear to have a dry rot and can be easily separated from the bulbs, mimicking symptoms of Fusarium basal plate rot.

Bulb and stem nematodes prefer wet soils and are not likely to cause damage during hot dry seasons unless the fields are over-irrigated or heavily infested seed was planted. Prolonged periods of rain and cool temperatures tend to favour the activity, spread and reproduction of this pest, such as the weather conditions experienced last year in 2004. These nematodes complete their life cycle within 19 to 23 days under optimum conditions and during this time a single female can lay up to 500 eggs. Several generations can occur over one growing season resulting in a rapid and dramatic population explosion. Although it was very hot and dry in many areas of Ontario this past season, the increase in infested garlic gloves planted from last years crop in the fall of 2004 impacted many garlic growers this year. The impact of this pest on the 2005 garlic crop would have been worse if the weather remained wet and cool again this year.

Often slightly infested cloves used for seed do not show any symptoms although the presence of nematodes can be detected by examining tissue under a microscope. Using garlic from contaminated fields as seed will most likely result in the introduction of this nematode into clean fields or further spread of this pest. Obtaining and planting nematode free seed from a reputable seed supplier is the best

way to prevent further spread of this pest. However, hot water treatment of garlic bulbs used for seed has been shown to be an effective method for reducing and in some cases completely eliminating the nematode from seed. This technique is only effective when the thermal tolerance of the nematode is less than that of the plant material. Temperatures above 50°C may injure the garlic cloves resulting in poor germination and establishment, while temperatures less than 44°C for 1 hour may not kill all the nematodes. For best results:

1. Select only healthy disease free bulbs for hot water treatment and planting. Unhealthy bulbs may not survive the hot water treatment, which could lead to poor germination and establishment.
2. It is recommended to pre-soak the bulbs in 0.1% detergent and water solution for about 1 hour at room temperatures before dipping them into the hot water bath.
3. Remove the bulbs from the detergent solution and submerge them immediately into the hot water bath maintained at 44°C for 1 hour ensuring that all bulbs are completely submerged.
4. After one hour, remove the bulbs and submerge them in a cool water bath for another 15 minutes or until the bulbs have cooled down completely.
5. Remove the bulbs and spread them on a clean surface to dry.

As well as planting clean seed, implementing a 3-year crop rotation with a non-host crop; burying or burning infested or contaminated seed and plant debris are also necessary to reduce reintroduction and spread of this pest. Cleaning soil and debris off of equipment footwear and or clothing before moving between fields and cleaning debris from storage areas will also help reduce the potential spread of this pathogenic nematode. Selecting fields that have been tested for bulb and stem nematode and determined to be nematode free is also important to ensure that the crop being planted will not be infested by soil borne nematodes. Soil should be sampled and sent to a Pest Diagnostic Clinic qualified to extract, identify and enumerate nematode population levels, well before the crop is planted so that appropriate actions can be made. Fumigating soil in conventional agriculture production systems with a registered soil fumigant late in the summer or early in the fall before planting will also reduce the potential of severe losses and further spread of the bulb and stem nematode.

Editors Note: If your soil is infested take corrective measures to minimize spread and crop loss. Growers concerned about infestation would be well advised to have their samples checked by a plant lab. A fee applies. In Ontario, contact:

PEST DIAGNOSTIC CLINIC

Laboratory Services Division, University Of Guelph
95 Stone Rd. West, P.O. Box 3650
Guelph, Ontario N1H 8J7
Phone: (519) 767-6256 Fax: (519) 767-6240

Garlic Research

The Ottawa Valley Leek Moth Project Update

A highlight of the 2005 Garlic Field Day at Beaver Pond Estates in Maberly on June 26 was a review and update on the Ottawa Valley Leek Moth Project by members of Dr. Peter Mason's team. Field team members Kathy Makela and Michael Wogin along with Carleton University graduate student Jane Allison were at the Field Day to talk about what they have found to date about the biology of the leek moth and the possibilities for biologically based management. Jane did the presentation to the growers.

Eastern Ontario growers were first made aware of the leek moth at the 2000 Field Day when a Metcalfe grower reported its presence. Since then, Paul Pospisil has led the push for information about the pest and has supplied research data on behalf of Eastern Ontario growers.

The Ottawa Valley Leek Moth Project was started in 2004 to develop an organic, biologically based control strategy for the leek moth.

Dr Peter Mason of AAFC, the Ontario Ministry of Agriculture and Food, Carleton University and CABI Bioscience Centre in Switzerland are carrying out a 3-year project, funded by the AAFC Pest Management Research Centre, to investigate the life cycle of the leek moth in the Ottawa area and evaluate biological pesticides and natural enemies.

Three local growers are co-operating in the project; Mike Gillespie of Osgoode, Jack Hinton of Almonte and Jack Fraser of Ottawa, providing the researchers with actual field conditions under which the leek moth lives.

Mason and his team set traps at each farm using the female sex pheromone to attract males, and they monitored these sites for leek moth flight activity and collected and studied samples of leek moths at each stage of their life.

While leek moth larvae and pupae were found on plants as early as the first field samples in mid-May, the population didn't increase within Allium crops until late July, with one site showing a severe infestation. According to their 2004 work, the proportion of plants attacked in a field increased from early July until mid-August. The most highly infested site in Osgoode showed over 90 per cent of plants sampled in mid-August with at least one leek moth specimen per plant.

After the first full year's work, Mason and his team concluded that the leek moth appears to have three flight periods in Ontario and two complete generations every year.

The female will generally lay between 100 and 120 eggs during her one-week life span. The eggs are laid on the leaves of the Allium plants, and once they hatch, the larvae will wander and bore into the leaves and create mines. Allison says the adults generally emerge from the pupae that are fixed onto the Allium leaves by the cocoon.

"The second, third and fourth instars in the larval development are the ones that bore into the central yellow leaves of the leek or garlic, and they're the ones that produce the most severe damage," she said.

Over the past year, Allison has started studying the leek moth's preference for egg-laying and larval feeding on native Allium species, and her results show the females prefer to lay eggs on the native Alliums.

"There is some tendency to lay eggs outside of that genus, but it's mostly out of desperation as their life span starts to decrease," she said. "There is no larval survival outside of that genus."

In 2004, they also tested biopesticides BTK and spinosad in the fields.

"The data suggests these products do provide some protection to garlic and onion from the leek moth, but we have to take the biology of the leek moth into account," Allison said. "Upon hatching, the larvae will wander a bit but then mine into the leaves, so this means that they're exposed to BTK for a very brief period, and they'd have to be exposed to a lethal dose before mining into the leaves. Spinosad is a contact poison, so a lethal dose is more likely to be encountered, but the results really suggest that the timing of the application is going to be critical. It should be matched with the beginning of the egg hatch to be effective. This year, we're repeating these field trials, and we've added some additional treatments to evaluate."

As for natural predators, surveys in 2003 and 2004 showed the larvae are attacked by several species of parasitic wasps, but Allison says these wasps are too generalist to have a major impact on the leek moth population.

However, she says there are several parasites in Europe that have had a significant impact on the leek moth population there, so two of these are being studied to determine their effectiveness and whether or not they are specific to the leek moth.

The leek moth is difficult to control because it is only exposed for a very short period of time when predators or spraying could affect it, and then it is hidden in the plant.

"It's really the larva that does the real damage, and by the late instars, they've burrowed into the leaves, and I'm not sure birds or bats would be able to find them at that point unless they were identifying them as being very, very small," Allison said.

The Ottawa Valley Leek Moth Project has uncovered valuable information about the leek moth and will continue to do so for the next year and a half.

Editor's Note: We appreciate the work by Dr. Mason and his team in this study. Although growers should not expect any instant solutions to the leek moth, this research will eventually produce responsible approaches to protecting garlic crops.

Around The Garlic Festivals

From the Caribou Garlic Festival:

“On August 13 & 14, we held our biggest Garlic Festival yet! This was the 6th annual event and a record-breaking crowd came from as far away as New Zealand, the U.S.A., Germany, and Holland to attend. Over 6,000 people came to celebrate the “Stinking Rose” and enjoy the sights, sounds, and smells of lots of different treats laced with **lots & lots of GARLIC!**”

Seaway Garlic Festival

Mary Lou & I took part in the 3rd Annual Seaway Garlic Festival. It was held this year at its new location, **Ed & Debbie DeCooman’s** organic farm, Connaught Acres, near Chesterville, Ont. The festival was outdoors in a large field, with tents provided for the education and cooking programs. The sunny autumn weekend made for a pleasant outing in a relaxed and pleasant setting.

Debbie & Ed hosted the 2005 Eastern Ontario Garlic Awards in their 9th year (see awards results on page 3).

Mary Lou entertained festival goers with her kitchen talk on using garlic in all its many aspects. I enjoyed doing my garlic guru “thing” by demonstrating the string braiding technique and answering hundreds of questions about growing and using garlic throughout the weekend.

Relocating an event has many disadvantages; however, the new Seaway Festival more than compensated for these; the farm location was appealing to urban dwellers; being part of an established Agri-Farm Tour, it had a good draw of visitors; and, being run late in the season enabled the local growers the opportunity to properly harvest, cure and present the best possible garlic; all these made it a more attractive proposition than larger festivals which run much earlier. The festival program was a good balance between garlic food, garlic for sale and garlic education for hobbyists and market gardeners alike.

The highlight of the festival was slow food chef, **Bruce Woods**, who fascinated his audiences in repeat performances of garlic magic, using only a BBQ and an outdoor flame cooker to produce delectable garlic dishes.

Personalities in attendance included **Ken Willis**, the founder of the Seaway Garlic Festival, on hand to give encouragement and support, **Ted Maczka**, the Fish Lake Garlic Man and **Alvin Runnalls**, Mayor of Dundas County who officially opened the festival.

There was more, much more, not the least being the abundance of the very best local garlic available in Eastern Ontario.

Congratulations to Debbie and Ed DeCooman on keeping the Seaway going and staging a very fine festival!

Perth Garlic Festival

Although I was away and unable to view the event this year, calls to the News came in with mixed reviews of this, the original garlic growers’ festival in Ontario. On the positive side, a number of local growers had returned to support the event after their exodus in 2000 and reported that garlic sales were good. On the negative side, reports suggested that attendance was well down. The organizers themselves complained in the local press about the event. An extract *from the Perth Courier* “Letters” column reads as follows:

*“— Unfortunately, vandalism of our directional signs this year made it more difficult for visitors to make their way to the fairgrounds. This is a sad commentary and reflects negatively on the festival committee and the town. —
Ed Firlotte, Secretary, Lions Club of Perth.”*

Note: It is regrettable that vandals have no conscience. Even garlic becomes a target to mischief.

Mountain Pride Garlic Festival

It appears that Saskatchewan’s garlic festival was cancelled this year. We’re still waiting to hear from **Evelyn Holowaty** on plans for next year’s event.

County Garlic Festival

The historic Crystal Palace in the Picton fairgrounds was the site of this little festival, in its 6th year. Emphasis on organics, along with garlic and garlic food competitions, soothing music and children’s activities combined to make it a very special event.

It is home to the “Glass Garlic Awards”.

Entertainment was provided by the Cold Creek Cloggers and The Academy Players. A magic show by Cory’s Fun Productions and the ever-popular garlic “breath of death” contest and garlic peeling contest kept adults and children occupied.

The ambience reflects **Christine Kosman’s** personality. Christine has organized the county’s Garlic Festival since its inception in 2000. She also grows garlic.

“The purpose of the festival is to have a stinking good time and put the focus on garlic,” she said. “It’s an opportunity for small garlic producers to come out and show their products.”

Kosman was buoyed by this year’s festival because it drew almost a dozen garlic vendors, double the amount of previous years.

Still the most charming event of all the festivals we have attended over the years. Although very small and running only one day, it again rates as being the best festival in Ontario for a relaxing Day’s outing.



THE GARLIC DIRECTORY

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The Best Garlic Recipes and Ideas

Medicinal Garlic Soup

This recipe was sent by Karen Poce of Chesley, Ontario as a relief for nose and chest congestion due to a cold or bronchitis.

Make it while your garlic is fresh and freeze it for the winter.

Ingredients:

- 1 litre chicken stock
- 1 or 2 heads garlic, peeled & chopped
- 5 sprigs fresh parsley, chopped
- 6 sprigs fresh cilantro, chopped
or, 1 teaspoon ground coriander seed
- 1 teaspoon lemon pepper
- 1/3 teaspoon dried mint leaves
- 1 teaspoon rubbed basil
- 1 teaspoon curry powder
- Tabasco sauce to taste (1-2 drops)

Method:

Place all ingredients in a pot and bring to a boil. Do not cover.

(Inhaling the fumes will start recovery.)

Reduce heat and simmer for 30 minutes

Allow to cool slightly, then, either puree for maximum effect

Or you may strain and drink the broth.

Makes 4 servings

Crabapple Garlic Onion Marmalade

From the Pembina Garlic Festival

Ingredients:

- 2 cups onion - finely chopped (sautéed slightly)
- 1 cup honey
- 2 cups white sugar
- 2 Tbsp. lemon juice
- 3 Heaping Tbsp. minced garlic
- 1 Box Certo
- 3 cups juice - Crabapple or Hawthorne

Method:

Bring certo, juice, honey, garlic, onion to a hard boil (can't be stirred down). Add sugar and return to boil until jelly stage - usually 1 or 2 minutes. Pour mixture into sterilized jars and seal.

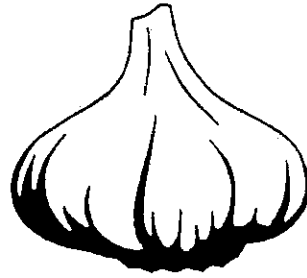
Kitchen Hint

Do you have trouble peeling garlic cloves?

The job is much easier if you soak the cloves in warm water for a little while. The water will loosen the clove wrappers so they will come off easily.

The Garlic Tree

Garlic



Species *Allium sativum*

Subspecies *ophioscorodon* *sativum*

