



THE GARLIC NEWS

Connecting the Canadian Garlic Network!

Issue 14 Winter 2007-08

Buy Local: It's Better than Supermarket Organic

The logo in the centre of this page reflects a trend that is taking place across Canada. This one came from Cheryl Nash, one of the driving forces behind Eco-Perth**. "Buy Local" is rapidly displacing "Organic" as the consumer's choice, the latter term having been hijacked by food corporations buying and trading on the global market.

How can you stretch your imagination to believe that the "certified organic" label found on supermarket produce can even remotely be connected with organic husbandry when it comes from Mexico, China, or the Philippines, shipped across the Pacific? Why not from the farm down the road?

Just what does "local" mean in terms of time or distance? Let's look at some practices.

Organic Growing and Farmers' Markets

First, a bit of history. In the early 1970s, people came to realize that the chemicals being used in the treatment and production of "industrial" food were having a serious, negative effect on both the environment and on people's health. An ever-growing number of people the world over began to recognize the benefits of eating organic food. This was followed in the late 1980's by a return of local Farmers' Markets to town. Small growers could sell their fruits and vegetables, and even home canning, baking, meat, milk and eggs. Consumers eagerly sought out these markets for the fresh food, developing trust in their local farmers.

When we were preparing the rules for the Perth Farmers' Market, the guideline for vendor eligibility became about **75 km.** or an hour's drive away. Of course, vendors had to grow or produce their own. No brokerage sales permitted. Similarly, the first Garlic Festivals used the Farmers' Market guidelines to avoid being just another marketplace for garlic shipped in from China.

Farm Gate Sales

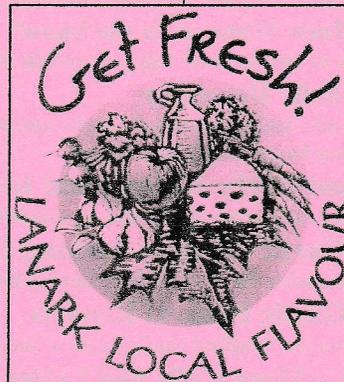
Many market vendors sold their produce at the farm gate to enable their customers to drive to the farm to get their fresh veggies during the week when the market was closed. They simply put up a sign or a trailer of garlic or vegetables at their laneway. It's now a common sight on country roads.

Feasts of the Fields

To promote local organic food, the Ottawa Chapter of Canadian Organic Growers ran the first Ottawa-region Feast of Fields in 1996 at the Central Experimental Farm. Organic farmers' were partnered with restaurant chefs to produce a smorgasbord of organic foods in an outdoor festival setting. Over 500 people attended the event, even on a rainy day. The feast grew and became an annual event for farmers and chefs in the Ottawa Valley region.

In July 2004, Local 316 of the National Farmers Union (NFU) organized a Feast of Fields on a farm north of Kingston to increase awareness of the importance of the local food system. The event was a sell-out with thousands of people attending.

In 2007, the NFU started a series called *Food Down the Road: Toward a Sustainable System for Kingston and Countryside* to develop markets to support processing and distribution of locally grown food. Local was defined as being within 100 km of Kingston.



The 100 Mile Diet

When the average North American sits down to eat, each ingredient has typically travelled at least 1,500 miles. In the spring of 2005, Alisa Smith and James MacKinnon decided to confront this unsettling statistic with a simple experiment. For one year, they would buy or gather their food and drink from within 100 miles of their apartment in Vancouver, British Columbia. It was a tough challenge. The idea caught on and attracted international attention. They wrote a book, "The 100 Mile Diet. For more information on this phenomenon, check out their website: <http://100milediet.org/category/about/>

These are a sampling of the many initiatives of making local food available to consumers. They are representative of hundreds of projects and activities happening across the land. All have a common theme; food produced locally, not more than an hour or two-hour drive away from your table, is the food to buy. It's good and it's better for you.

**For more information on the many Eco-Perth initiatives, check their website at: <http://www.ecoperth.on.ca/>

BUY LOCAL, BUY ORGANIC, BUY CANADIAN

IT MAKES HEALTHY BUSINESS SENSE

THE GARLIC NEWS

Connecting

The Canadian Garlic Network
Issue # 14 Winter 2007-2008

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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
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*To all our Garlic Friends, we wish you
a Very Merry Christmas and
a Happy & Prosperous New Year
in 2008
May your garlic bring you good health!*

Paul & Mary Lou

News from our garlic patch: cancer, planting the garlic trials and buying local

Well, a lot happens in 3 months and there's a lot to pass on. Some people have suggested that we should publish The Garlic News on a monthly basis to get the news out.

Hey! Now wait just a minute! This is not full-time job. This is just something we were talked into doing because a grower newsletter was needed. As it is, we're hard pressed to meet our self-imposed deadlines for every quarterly issue. So don't get any ideas that this old bod can produce more than he's doing already. One-finger pecking on a computer keyboard is as much work as it was with an old-fashioned typewriter. We'll stick with quarterly.



Here at the Beaver Pond, we have our own challenges. Our life continues to be driven by the need to get Mary Lou's cancer under control and into remission. It's been a long year of endless trips to Ottawa for numerous tests, doctor's appointments and treatment sessions. Surgery failed to get the tumours. The chemotherapy program failed. The first attempt at stem cell replacement didn't work.

Mary Lou is a very courageous lady, overcoming the fear of the unknown of each treatment, enduring the misery of chemotherapy side effects and keeping up her spirits.

As Christmas approaches, we're optimistic that the team at the General Hospital, one of the best teams in Canada, will come up with a successful approach in the New Year. It's a season of hope, joy and miracles.



Did you get your garlic planted this fall?

Some growers were late and didn't get planted at all. We did but I had to stretch it out over a goodly part of October to fit it into time and energy available. As it turned out, starting earlier was a smart move as winter came on very suddenly, a month early, with both snow and cold.

Only the bulbil trials didn't get planted. I'll try to pot them up in the greenhouse and get them into the garden next spring. Mulching didn't get the finished, either, only ¼ done. At this stage, I'm not too concerned. Daily snow is accumulating into a protective blanket over the garlic beds. If it stays over January and February, the likelihood of winterkill is small.

With the first cold winter in many years, it will be interesting to see how both the garlic and its enemies, diseases and pests, are affected. We'll see in a few months.



Buying local has become the dominant theme this year. Its not only the cheap garlic flooding the supermarket shelves. The China thing has come home to roost all over. Shredded plastic in proteins used for pet food, lead contaminated toys for children, cheap, dollar store plastics destroying our manufacturing, and the list goes on and on. I even garbaged a container of fresh, frozen vegetables from the supermarket when I discovered that it had come from China instead of from the vegetable fields of Ontario!

The problem with my shoes hasn't made headlines, yet. With my size 14s in EEEE wide, for a number of years, I was lucky to be able to buy the American New Balance brand, at 200 bucks a crack. Well worth the money. They came in large sizes, fit my oversize feet, were soft and well made and tenderly caressed my crippled tootsies.

That was until this year when I went to the expensive shoe brokerage for a replacement pair. He had to order them but assured me that they were the same, high quality as always, made in the good old USA. They arrived. They still cost the same. They seemed to fit. That was, until I had worn them for a day. My bunions were painfully sore; the orthopaedic inserts didn't fit (the shoes were supposed to be the identical model and size as my old ones but weren't) and the soft padding was hard as nails. I had to wear my oldies for a few days to let my feet recover.

The hardly-legible printing under the tongue said; "MADE IN CHINA". A shoddy, \$10.00 shoe sold under the New Balance brand for 200 bucks! There is just no end to this greedy profiteering being foisted down our throats under the guise of globalism.

I'm just pleased that more and more consumers are prepared to pay for quality goods produced by honest Canadian labour. It costs more but it's worth a lot more than most of the imported junk found in retail stores today.

The front page of this issue covers a sampling of the many initiatives finding public support for the "Buy Local" movement spreading across the land.

Buy local is not just another fad. It's the belief of a growing number of consumers that you can trust your local farmer to get safe, high quality food. The global food trade has demonstrated that big profits and not safety or quality is what really determines the products they sell.

As well, there is a growing realization that you must buy products produced locally by farmers or factory workers, or there won't be any jobs left for our grandchildren. The jobs will all be in Mexico, China or India, and few, if any, will remain in Canada.

A word to the wise: **Buy Local. It Makes Healthy Sense**

Calls and Letters From Our Readers

Harvesting too late.

I didn't have a good year for garlic. I dug on August 03 and most of the heads had opened up so I probably should have dug it earlier.

I don't like to miss any issues! I would appreciate the summer Issue if possible. **Marian Hall, Ajax, Ontario.**

Editor: Harvesting too late causes the bulb wrappers to break down. Knowing exactly when to harvest can be a little tricky. Different types mature at different times. Watch the leaves turning brown. They die from the bottom up. When the bottom 4 or 5 are dead or dying and the top 5 are still green, lift a bulb or two. If they are large and filled out, its time to harvest the rest. If not, let them go another day or two – no longer as they mature very quickly – and try it again. You'll get it with experience. Both the summer and fall issues are on their way to you

Developing a market garden.

I'm your new subscriber from Saskatoon. My husband **Steve Fortowsky** and I are actually transplants from Ontario (Windsor & London). I'm a UWO grad 1984. When we moved in 1990, my husband went to U of S and got his B Ag in Animal Science. I work in town, and my husband works out of our home. We are in the process of trying to develop a market type garden operation. We had a pretty good year for garlic, despite a late frost and extreme heat. We mulched our garden with alfalfa that a neighbour was selling at a great price. This saved our garden. The only thing, I left the garlic too long in the ground, and we had a lot of splitting and exposure of cloves. Live and learn! **Elise Gignac, Saskatoon, Sask.**

Editor: See my hints to Marian Hall above on just when to harvest your garlic.

Don't give up your day job just yet. But, do give up the thoughts of summer vacations. Summer is a time of work. Market gardening is a lot of hard work and building a business takes a few years. For the benefit of our members thinking along the same lines, my paper, "A Garlic Planting Plan For Small Organic Market Gardeners", appears on page 15.

Another new grower in Northern Manitoba

Marilynn Shimkus contacted me by phone and email looking for seed garlic. I was pleased to refer her to the growers who advertised in The Garlic Directory. She selected Al Boyko, a grower in Canora, Sask. We welcome Marilyn and her husband Ernest to the ever-increasing number of members in our Garlic News network. By the way, if you check Birch River on a map, you'll see just how far north it is, north of Duck Lake Provincial Park, in one of the coldest regions in Canada

She wrote: "Dear Paul; Thanks for putting me in touch with **Al Boyko**. His garlic is awesome! I would like to subscribe to The Garlic News and include all back issues. Thanks again." **Marilynn Shimkus, Birch River, Manitoba.**

Garlic Planting Tip: Once your garlic is planted, wait until the ground is frozen and the mice have found their winter home elsewhere before spreading your winter mulch. Mice can make a terrible mess, especially in straw.

Planted in raised beds

A new grower who I spoke to for the first time at the County Garlic Festival sent a lovely card and wrote: "Dear Paul; Thank you so much for your help regarding the proper planting for my garlic. I have planted 10 varieties in raised beds – all following the full moon – let's keep our fingers crossed! I have no interesting pictures to date but let's see what spring brings. Good wishes to you both." **Mary Jane McDowell, Wellington, Ontario.**

Editor: Thank you and well done, Mary Jane. I look forward to your first garlic results and pictures, too.

Quit growing garlic due to health

Tom & Nancy Worthing of Thessalon, Ontario wrote: "Due to health problems for both of us, we were advised by doctors to quit the greenhouse business. We sold our home and moved to Sault Ste Marie and are now living in an apartment with lots of activities. Thank you for all your great advice. We gave all the info from you to the folks who took over our house, Mr. & Mrs. Gerald Harrigan. Thanks so much." **Tom & Nancy**

Editor: Thank you, too, Tom & Nancy for letting us know and the best of luck on your new life in the city.

Entries at the Royal Winter Fair

Ted Maczka called after his visit to the Royal Winter Fair in Toronto and reported that five growers had submitted entries. Ted has for many years sponsored a \$100 prize for the best garlic at the Royal.

A check of the results from the Royal showed the following:

Class 46 - Garlic, 12 on a plate

1st **John Breckon** John also won the Champion Garlic Exhibit donated by Ted Maczka, the Fish Lake Garlic Man

2nd **Tony McNamara**

3rd **Howard Tizzard** Howard & Marie Tizzard also won 1st & 2nd for the 20" 'garlic ropes' class

4th **William Vanvliet**

5th **Joanne Borsok**

Brownish cloves. Is it wasting disease?

Gilles Nadon of Richards Landing, Ontario said they'd had 15 mm of rain, making the soaked garlic patch difficult to plant. He also said that some of the cloves, harvested in July, had the upper half sunken and wrinkled and a brownish colour. He wondered if this was some form of "wasting disease"?

Editor: I couldn't find reference to a "wasting disease" in any horticulture reference; the description didn't fit any of the diseases common to garlic so I suggested to Gilles that he send samples to the lab for analysis.

Anyone come across wasting disease in garlic?

As well as calls, emails and letters, we have a lot of visitors to the Garlic Trials Plot and provide free garden clinics on growing garlic. If you're in the vicinity of Beaver Pond Estates, please visit. Just call ahead to make sure one of us is here. We'll be happy to talk garlic with you. Editor

(More Calls & Letters on page 15)

Ted Maczka, a Special Canadian

By: Charlie & Sheila Robb

Where does one start with the story of Ted Maczka? From garlic festivals to workshops to the Royal Winter Fair, Ted has done it all.

If one has met Ted, listened to the man, one can only have respect for him. He has spent his life bringing to others his knowledge and experience of every aspect of growing garlic. For thirty plus years he has continually researched to bring forth the best product possible. He is adamant in teaching garlic growers that Canada grows some of the finest garlic in the world. He continues to encourage new growers and will do so as long as there is breath in his body. Ted is our mentor and is a respected member of any gathering he visits.



As a garlic grower myself, Ted has always been there for any help he can give at any time and through the years a bond of friendship has formed.

He has travelled from eastern Ontario to the Sudbury area to southwestern Ontario to Haliburton County and some northern states on his speaking tours and I'm sure there are many others.

We need more people like Ted Maczka, dedicated, sincere and honest. We salute you Ted on a job well done and wish you many more wonderful harvests!

With thanks, **Charlie & Sheila Robb, Haliburton County**

Editor: Ted Maczka's birthday is on January 14. Happy Birthday, Ted. May your garlic crop be the best ever. Give Ted a call at 613-476-8030 and let him tell you how old he really is!



A garlic planting plan for small organic market gardeners

By: Paul Pospisil, July 2002/revOct 2002

Farmers' Markets are ideal outlets to sell your garlic directly to consumers. Garlic alone is not a feasible undertaking. Plan on growing other market vegetables as well as garlic, both to attract customers as well as to balance your growing operation. It's the other vegetables that will make your project into a profitable venture by tripling your sales. The author is a founding member of the Perth and Smiths Falls Farmers Markets and operated a market garden for over 10 years. The plan outlined below is appropriate for beginning market gardeners.

1. Rotation Plots: Divide your garden into three equal parts, Plots A, B and C for annual rotation. Each plot should be 50' x 50', or a size that suits your land and wishes. This is enough to start with for the first year. One plot will allow

you 3000 garlic plants, more than enough for the first year. Experienced gardeners can start with more; beginners are wise to plant less. Learning to grow garlic well takes a few years.

2. Soil Building: Prepare your soil starting a year ahead of planting. Add compost and composted manure, plant legumes or several plantings of green manure to roto-till under and, most important, kill off the weeds!

3. Organic Certification. Start organic right from the start. Don't leave it till "later". Certification takes time and so does the learning process.

4. Crop Rotation: In the fall, plant Plot A to garlic. Next spring, plant B to legumes like peas and beans and C to other market vegetables (lettuce, spinach, radish, green onions, beets, carrots, summer turnips, baby potatoes, early tomatoes, and other high-demand vegetables requiring the least space). The 2nd year, garlic goes to B, legumes to C and the others to A. Rotate your crops every year.

5. Soil Enrichment. Legumes restore nitrogen to the soil and are ready to harvest early. Follow them with a plow down green manure crop like buckwheat to before planting.

6. Each 50 x 50 plot: Make 10 raised beds, 36" wide with 24" walkways between x 3 rows per bed = 1500 feet of row. Use raised beds for all crops for bigger harvests.

7. Garlic Planting Stock Calculations: Buy only enough seed garlic to plant Plot A. Estimate seed as follows:

a. Cloves needed: Porcelains @ 2 per foot of row = 3000 cloves, enough for 3000 plants. Others @ 3 per foot = 4500 cloves.

b. Bulbs needed: Porcelains (4 cloves per bulb) = 750 bulbs; Rocamboles & Purple Stripes) 7 cloves per bulb) = 650 bulbs; Softnecks (9 cloves per bulb) = 500 bulbs.

8. Know Your Garlic: Grow at least one strain from each of the five Varietal Groups for self-education Consumers expect you to answer questions intelligently so you want to know about all garlic, not just one Variety!

9. Business Plan. Write out your business plan and review it every year. Develop your market garden and garlic business over several years. Expand all three Plots at the same time. Develop your own market and customer base. Don't grow any more than you can sell. Garlic grown in balance with other market vegetables can be successful business venture.

10. Quality. While garlic can be a profitable crop for market gardeners, it's not a get-rich-quick scheme. It takes a lot of work to grow it well, harvest, cure and prepare it and market it at a profit.



"You can't change the direction of the wind, but you can adjust your sails"

Garlic Diseases – Recognizing the Problem

At the 1996 Vegetable Crops Conference in Toronto, Dr Ron Brammall of the Simcoe Research Station gave a talk on some of the shortcomings of the fledgling garlic industry in southwestern Ontario. Emphasis on marketing rather than good farming practice had driven growers to scale up production only to realize disappointment.

He stated, “ In the spring of 1987, the Ontario crop was all but lost. For most growers, the plants emerged in March to April and grew only a few centimetres. The plants then very rapidly died, --. Similar losses were seen in 1988.”

The loss was attributed to “winterkill”. However, when the plants were examined in the lab, they were infected with *penicillium hirsutum*, or Green Mould disease.

Why did this occur? Dr. Brammall laid the fault on the mechanical “cracking” devices being used by growers to speed up the planting process. The cracking machines damaged the protective clove wrappers, allowing the *penicillium* spores to infect the cloves.

Dr Brammall’s research also indicated that the spores, imported on infected garlic from California, were already resistant to known chemical controls used there. He concluded that chemical treatment was unnecessary if the seed cloves were undamaged by careful “cracking”.

Good farming practice is essential to successful agriculture. Reliance solely on chemicals doesn’t necessarily work.

A similar situation exists in the case of viral diseases of garlic. While research labs such as Becky Hughes “Clean seed project” at the SPUD research centre in New Liskeard can provide growers with disease-free seed stock, the onus remains with the growers to use good farming practices so as not to re-infect the clean seed. See next article as it refers to aphids spreading the viruses.

Garlic Viruses and the Ontario Industry

*By Dr. Lorne Stobbs, AAFC Research Scientist, November 1999
(Reprinted from The Garlic Press with permission)*

A two-year study was recently conducted by the Southern Crop Protection and Food Research Centre (SCPFRC) of Agriculture and Agri-Food Canada (AAFC) to assess the incidence of virus diseases in the garlic industry in southern Ontario.

Thirty-one commercial garlic growers were surveyed, with 13 varieties tested. These included: Chinese Softneck, German Hardneck, German White, Italian Red, Italian Softneck, Legacy, Lucie Anne Hardneck, Music, Nellie, Polish Gem, Polish Hardneck, Polish Softneck, and Siberian, although most growers were growing Music exclusively.

Garlic samples taken from all sites were infected with garlic latent virus (GLV), averaging 62 per cent overall infection. Infected plants exhibited mild yellow streaking & mottling. Symptoms were less noticeable or absent by mid-July. Onion yellow dwarf virus (OYDV) was found at 93 per cent of the sites, and was present in approximately 38 per cent of the plants at each farm. Infected plants exhibited mild mottle or were non-symptomatic.

Leek yellow stripe virus (LYSV) was present at 85 per cent of the sites, averaging 12 per cent infection.

In garlic, the viruses are seed borne. Since most of the seed planted by growers was either obtained from their previous crop or from local suppliers, the high levels of field infection are not unexpected.

Further spread of the viruses occurs as aphid populations rise in the field, with many fields approaching 100 per cent infection by harvest.

GLV and LYSV were transmitted by the green peach aphid from garlic to garlic, leeks, and onion. OYDV was similarly transmitted to garlic and onion. While the symptoms of OYDV infection were mild to negligible in garlic, the virus caused severe yellow striping, leaf curling, and stunting in onion.

No statistical differences in percentage infection were seen among the various varieties infected with any of the viruses.

Many of the plants were infected with more than one virus.

By mid-July, the viruses were widespread in the fields, and the presence of the *green peach-aphid*, a known vector of GLV, LYSV, and OYDV, was likely associated with horizontal field transmission. The presence of OYDV in garlic could seriously impact onion production if infected garlic was introduced into onion production areas.

Since a source of clean seed is not currently available to garlic growers, it is likely that these viruses will continue to spread and increase within the Ontario industry.

The widespread distribution of viruses within the garlic industry is cause for concern. Yield reductions in excess of 25 per cent have been attributed to GLV, LYSV, and/or OYDV infection. With increased public focus on the medicinal properties of garlic, the acreage of this crop across Canada has rapidly increased. Local suppliers, with no assurances that the seed is free from viruses, have met demand for seed.

Efforts need to be made by the industry to develop a clean seed program to ensure the health of an expanding industry.


Why do banks charge a fee on "insufficient funds" when they know there is not enough money in your account to pay it?

Developing a Garlic Clean-Seed Program for Ontario

By: *Becky Hughes, NLARS, University of Guelph*
& *John Zandstra, Ridgeway Campus, University of Guelph*

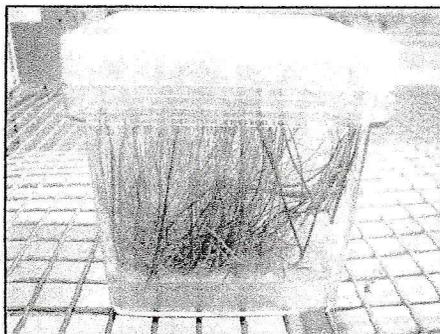
The University of Guelph's Seed Potato Upgrading and Distribution (SPUD) Unit, located in New Liskeard, Ontario, is a micro propagation and greenhouse facility specializing in clean seed and plant programs. Our location in northern Ontario is beneficial for any "seed" program where isolation from commercial crops and virus vectors is necessary to ensure high quality. Currently, the SPUD Unit produces pathogen-tested potatoes, raspberries and strawberries for the Ontario industry.

Our newest project is a "clean seed" project for the Ontario garlic industry. Like many vegetatively propagated crops, garlic is often infected with plant viruses. Yield losses in virus-infected garlic are estimated to be between 25 and 50%. Other pests and diseases, such as white rot and the stem and bulb nematode, can also be seed-borne. These pests have devastated garlic and onion-producing areas in other parts of the world. To address these concerns a number of garlic-growing areas have introduced garlic "clean-seed" programs. These programs are based on the elimination of viruses and diseases using micro propagation and testing, and the multiplication of seed stock under conditions designed to reduce re-infection.

Funding to develop a garlic "clean-seed" program in Ontario was received from the Agricultural Adaptation Council, FedNor and the Garlic Growers Association of Ontario (GGAO). The objectives of this two-year project were to develop an efficient and economical system to micro propagate 'Music' garlic, to produce virus-tested stock of 'Music', develop a greenhouse production system, and develop guidelines and partners for a future program.

The SPUD Unit investigated the effects of explant source and media on plantlet establishment in tissue culture, the percent "virus-negative" plants, multiplication rates and greenhouse survival of 'Music' garlic. As 'Music' is hard-neck garlic, which produces scapes and bulbils, we were able to put it in culture from scapes, bulbils and cloves.

An efficient and economical micro propagation system was developed for 'Music' garlic using meristem tips from bulbils and garlic cloves.



Garlic plantlets in culture

Different media are required during initiation of the culture, multiplication and rooting of the plantlets, and bulblet formation. We have identified a series of media which results in a high multiplication rate in the laboratory and a high survival rate in the greenhouse. Plants in the greenhouse formed mature bulbs in five to six months. Bulblets were also formed in tissue culture.

The SPUD Unit, NLARS now has the capacity to produce large quantities of pathogen-tested garlic. It is possible to produce over 20,000 plantlets from one garlic clone in nine months.

These would result in at least 16,000 greenhouse-grown "clean-seed" bulbs in another six months.

After screened greenhouse production, it is necessary to multiply garlic seed in the field for several years.

These seed-production fields must be isolated from commercial *Allium* crops, and other potential pathogen sources. Recommended field production practices for "clean-seed" garlic production in Ontario are being developed in conjunction with the GGAO.

There are still several variables that still have to be determined, including the effects of fertility on greenhouse bulb formation and the multiplication rate of this pathogen-tested material in the field. This will determine the number of field generations required and the cost of "clean-seed" garlic.

Limited quantities of virus-tested garlic will be available to the GGAO in 2008. This pathogen-tested material is also free of stem and bulb nematode, white rot and other seed-borne diseases.

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[*www.garlicgrowers.on.ca*](http://www.garlicgrowers.on.ca)



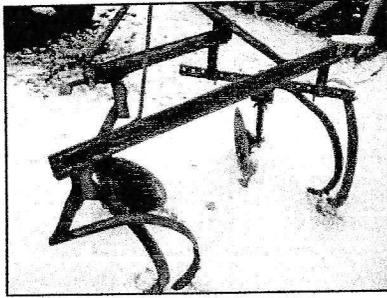
Bulblets forming in culture

Growing Garlic in Nova Scotia

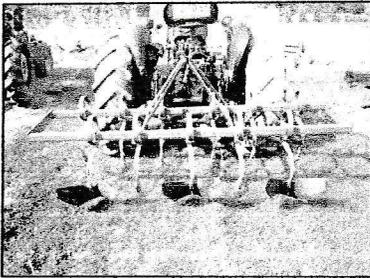
By: Clark Wiseman of Dutch Settlement, Nova Scotia

I will be starting to plant tomorrow, September 26 and depending on weather, finishing mid-October. I usually don't mulch until freeze-up, which can be mid-December or later around here.

On my heavy ground, and with the maritime climate, I need to make hills for planting. I used to use a one-row potato hiller, but it required 3' per hill, and I could only drive in one direction because it was offset on the tractor.



The furrowers in the photos came from my local Massey dealer, and combined with the tiller on the other tractor have made the task of constructing hills incredibly easy.



I have a 15" wide furrower centred behind each tractor wheel, and one in the middle. This gives me two beds between the wheels at about 25" centres. I can then turn

around and make two more hills immediately adjacent on the same spacing. Some tractor speed is necessary to throw the dirt up in a nice inverted 'vee'.

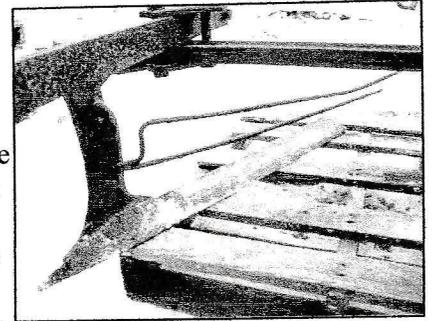
I can drive through them again without compacting the original hills, which on my heavy ground is often necessary to loosen the soil for planting, especially if rain has compacted them. I usually make the hills in August just in case the fall turns wet. If this happens, I will try removing the furrowers and leave one cultivator tooth per hill to open the soil for planting. I haven't had to do this yet, but in years past, I have had to plant while up to my ankles in mud, but the tops of the hills stayed dry enough to plant. Clay is amazing stuff!

This shows new ground that has grown nothing but weeds for 30 years. I hope the alternating strip will help me kill weeds between the beds in alternate years, while a heavy layer of mulch limits weeds in the beds.



The strip method gives me convenient places to throw the rocks from the planting beds, so they can eventually be removed and it gives room for tractor and trailer between the beds for mulching and harvesting. It will take years of labour to make this good ground, but the challenge is quite exciting. (Jeez, maybe I need to get a real life!)

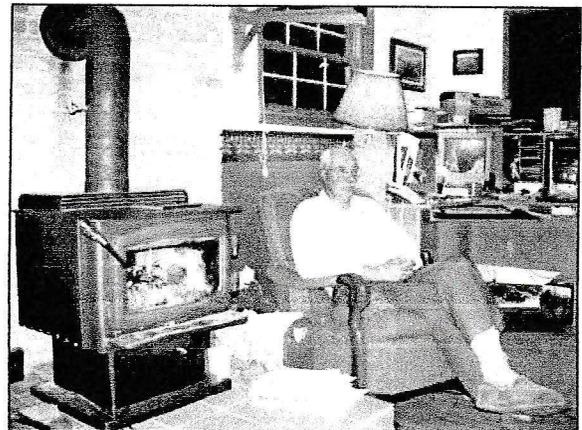
This is (formerly) a horse-drawn bean puller that a neighbour gave to me. I want to attach the two spades to the frame for the one-row potato hiller that I mentioned. My older tractor has down pressure on the three-point hitch, and I want to try to lift, or at least loosen the garlic so that I don't have to use a fork to pry them out of the ground. The down-pressure should allow me to keep the spades well below the bulbs.



December 2. I still have not mulched the garlic this year. We have had so much rain that I can't get near the field. The ground is frozen now, and if it stays that way, I might mulch this week. There is no sign of green shoots, either.

I like to experiment with cropping, and next year, I may grow potatoes in every fourth strip, which would still allow decent access to the garlic beds. I can get copious amounts of seaweed, which might be the best potato fertilizer I have ever encountered. It keeps the bugs off when the potatoes are grown in it, and in year two, the seaweed makes an excellent soil amendment, still with some manuring value. The potatoes are organic and taste great, with noticeable iodine content (you can smell it when boiling them - with several cloves of garlic, of course). I mention this not so much for the gardeners among your subscribers, but for the growers who are trying to make a viable commercial operation.

Co-planting other commercial crops with the garlic makes sense to me. In fact, I would like to hear from others who are taking a similar approach.



Clark ponders his garlic crop, by the fireplace, of course!

Stem and Bulb Nematode Continues to Damage Garlic in 2007

By: Jennifer Allen, Vegetable Crop Specialist, OMAFRA

As was to be expected, I received numerous calls and samples from garlic growers this season that suffered losses due to the stem and bulb nematode (for more information on what the stem and bulb nematode is, check out my article in Issue 9 of the Garlic News).

Unfortunately, most of the garlic growers didn't know they had a problem until the end of the season when they started harvesting their bulbs. Traditionally, it's been recommended that you look for stunted young plants or plants displaying chlorosis or bloating. Since most of the growers I've dealt with didn't see any of these above ground symptoms, I think it's time we rethink how to look for this pest.

Based on my experience, soil and bulb testing is really the only way to know whether or not you have this pest.

Soil sampling should be done in early summer and early fall. In general, nematode populations tend to peak in May-June and September-October. The tools you'll need include a soil core probe or a narrow bladed shovel, and a bucket. Once you have these tools, you're ready to begin.

The basic soil sampling recommendation is that you sample a number of locations (see Chart below) within your field. From each sample site, go down at least 8" deep, knocking off the first 2" and mixing the remaining 6" in your bucket.

Once you've finished sampling, you need to take a sub sample, generally a cup or two of soil, place it in a sealable container (plastic bag, plastic dish), and then send it off to the lab for analysis.

Number of soil core samples/area required for estimating nematode populations

Area	Number of soil cores/sample
< 500m ²	8 - 10
500 m ² - 0.5 ha	25 - 35
0.5 ha - 2.5 ha	50 - 60

For bulb analysis, either you can submit samples from actively growing plants or you can wait and send samples once harvested. In either case, simply pick out some healthy and non-healthy bulbs, place them in a sealable container, and send them off to the lab for analysis.

Here in Ontario, I have all of my samples tested by the Pest Diagnostic Clinic, part of Laboratory Services at the University of Guelph. To learn more about their services, to get a submission form or to check out their fee schedule visit: <http://www.labservices.uoguelph.ca/units/pdc/> or call 519-767-6256.

Remember, there really isn't a reason not to test. If your soil or bulbs test positive, you're ahead of the game. You can now work on controlling and eliminating the pest from your field. If you samples test negative, then you know you have pest free stock and can continue to monitor and prevent a problem from developing.

For more information check out OMAFRA Fact sheet 06-099, titled "*Sampling Soil and Roots for Plant Parasitic Nematodes*" by Michael Celetti and John Potter.



Editors Note: Buying a soil core probe is a worthwhile investment. I purchased my soil probe from a company in Guelph called Halltech. Here is their website:

<http://www.htex.com/environmental/soil.htm>

The tool is 36" long with a T-handle, making it very easy to take 12" deep core samples. Oakfield Apparatus in Ohio makes it so there is a short delay bringing it into Canada. It cost around \$125.00 and was well worth the money.



References to Previous Articles on Stem & Bulb Nematode published in The Garlic News

Issue Number, page	Topic
#5, p 9 –	Managing the Bulb & Stem Nematode Menace
#8, p 8 –	Garlic Field Day 2006 at Beaver Pond Estates
#9, p 6 –	Extensive Garlic Damage in 2006
#10, p8 –	The Challenge of Nematodes
#10, p9 –	Beaver Pond Estates Report on Organic Trial Using Green Manure Crops for Nematode Suppression
#13, p7 –	Nematode Suppressing Green Manure Trial 2
#13, p8 –	Experience with Nematodes in Kenya



How Much Water is in the Snow?

On average, 10 inches (25 centimetres) of snow is equal to inch (2.5 centimetres) of water. If the temperature is above freezing, six inches of snow might correspond to an inch of liquid. This is called *wet* snow. *Dry* snow, or powder snow, when the temperature is only 10 degrees Fahrenheit, needs 18-24 inches of snow to equal one inch of liquid water. A good accumulation of snow over the winter helps to restore soil moisture and bring up water levels (which have been dropping after several years of low rainfall).

The heavy snowfall experienced in many parts of Canada may turn out to be a blessing in disguise for garlic growers. Snow is an excellent insulator and will protect over-wintering crops like garlic from winterkill.



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Email: sales@mbgarlic.com

Website: www.mbgarlic.com

Note: Valerie Russell advised that Maple Bay Organic would no longer sell garlic for seed, only for table use, due to an infestation of white rot. See website for further information.

You harvest as you sow. It pays to buy quality seed.

Demand for Canadian Grown Garlic continues to go up, year after year.

Again this year, we received scores of inquiries from every part of Canada looking for garlic – garlic to plant, garlic to eat, just garlic, as long as it was local.

We referred these customers to the growers listed in these Garlic Directory pages. If your ad was here, you had dozens of referrals from us. If we didn't know that you had garlic to sell, we couldn't help you sell it!

Don't delay. Fill out your application and send it in today!

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Jules Pretty, University of Essex, UK

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See article on organic garlic bags, The Garlic News Issue #10.

Organic Garlic For Sale: Majestic, Music, Georgia Fire, Georgia Crystal, Magical, German Red, Russian Red, French Rocambole, OCPP certified. David Hahn, Forest Farm, Godfrey, Ont., ph. 613-273-5545, Email dhahn@rideau.net

Garlic For Sale: Bulbs, garlic powder. Majestic, Music, Czech Broadleaf & Russian Red. Tim & Sue Asselstine, Cranberry Creek Farm, Email clarendonstn@aol.com. Ph. 613-279-1208.

Organic Seed Garlic For Sale: German Stiffneck, King Ted, Music, Siberian, Legacy, Wildfire, German Fire, also bulbils & wild leeks. OCPP certified. Will ship. Simon de Boer, Langside Farms, Teeswater, Ont. ph. 519-357-1919, Email sbdeboer@wightman.ca.

Organic Garlic For Sale: Porcelain, Rocambole & Asian. OCPP certified organic, Jean Finlayson & Elly Blanchard, Railway Creek Farm, Madoc, Ont. Ph.613-473-5174.
Email railwaycreek@auracom.com

Garlic For Sale: 4 Porcelains, 12 Rocamboles, 5 Purple Stripes, and 6 Artichokes. Lorna & Martin Reichert, Reichert's Gardens, Morewood, Ont., K0A 2R0. Ph. 613-448-1033. Email mfreichert@yahoo.ca.

Garlic For Sale: Featuring 'the Original Big Ass Pickled Garlic' & assorted garlic products, will ship, Music garlic in season. See card on facing page. Email bigassgarlic@hotmail.com ph. 705-766-2748.

Garlic Bulbils, Chives, Garlic Chives, Walking Onions for sale. Ship in Canada only. 2008 Garlic Listing coming soon. Beaver Pond Estates Small-Plot Garlic Variety Trials, Maberly, Ont., ph. 613-273-5683. Email: garlic@rideau.net.

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The best garlic recipes and ideas

Garlic Guru's Holiday Party Snacks

Holiday gatherings usually include a lot of munchies, including mixes of peanuts and pretzels. Although you can buy them ready-packaged, they taste much better when freshly made. There are many recipes for making your own using breakfast cereal, pretzels, peanuts, spices and herbs. Here's my own offering for holiday season 2007-08 from the Garlic Guru's kitchen.

Ingredients:

½ box Cheerios, the whole-wheat kind
½ box Shreddies
large bag of small pretzels or pretzel sticks
1 lb. of salted peanuts
1 can of whole cashews, for the gourmet touch
¾ lb. dairy butter
2 large tbsp fresh garlic powder (see recipe opposite page)
2 heaping tbsp grated Parmesan cheese
1 ½ tbsp Worcestershire sauce (if not available, substitute Soya sauce with 2-3 drops hot pepper sauce)

Method:

Combine dry ingredients in a baking pan. I use two of those aluminium pans used for lasagna. Melt butter, stir in garlic powder and sauce and drizzle over the dry ingredients. Bake at 200 F for 3 hours, stirring every ½ hour to coat all parts.
Spread to cool. Serve in little snack dishes located near the armchairs of guests and in-laws who came for the food.

Garlic, Onion & Herb Pita Chips

A fine recipe from the Silver Spring Farm Cookbook, p 26. This cookbook is now out of print. It was originally published as a fundraiser for the Ottawa- Carleton Association for Persons with Developmental Disabilities (OCAPDD). If you would like to support this worthwhile cause, let us know and we will put you in contact with some of the principles involved.

Ingredients:

5 whole wheat or white 6" pita breads
½ cup extra virgin olive oil
2 or 3 garlic cloves, finely chopped
1 green onion, finely chopped,
1 tbsp parsley, finely chopped
1 ½ tbsp finely chopped herbs of choice, e.g. basil. Dill, rosemary, etc.
grated Parmesan cheese (optional)

Method:

Mix garlic, onion, parsley and fresh herbs with oil and let sit for at least one hour to allow flavours to blend.
Preheat oven to 350 F.
Split each pita bread horizontally to make two halves.

Lightly brush the entire lighter-textured surface of each half with the oil mixture. Cut each half into eight wedges. Sprinkle with cheese (optional).
Place on cookie sheets and bake for approximately six to seven minutes until golden brown. Watch closely as oven temperatures and time can vary.
Serve with dips or enjoy as chips. These will disappear quickly.

May be stored in airtight containers in the refrigerator.

Crostini, for Valentine's Day

Crostini, the Italian expression for "little toasts", is used in recipes to describe small, thin slices of toasted bread, brushed with olive oil and used as a base for canapés or croutons. Here is one submitted by Local Flavour to the weekly recipe column in the Perth Courier for Valentine's Day 2007.

From Lanark County, Roasted Garlic Crostini

The ultimate aphrodisiac is a whole head of roasted Lanark County garlic shared with a loved one. Serve on February 14th. Roasting garlic magically transforms the pungent cloves of garlic into sweetly caramelised nuggets of pleasure to spread over your toasted baguette slices. Remember that the aphrodisiac qualities of this recipe are most powerful when you use Lanark County garlic*.

Ingredients:

1 sourdough baguette, cut into ½ inch thick slices
2 whole heads Lanark County garlic*
2 oz. soft goat cheese, cut into 6 rounds
1 tbsp pine nuts
2 tsp olive oil, extra virgin, of course
6 sprigs fresh parsley

**You are allowed to use your own local garlic, but never the stuff from China found on supermarket shelves!*

Method:

Trim tops off the garlic heads to expose the cloves. Place head down on a piece of foil. Drizzle the olive oil and wrap up in the foil. Bake in a 400 F oven until the cloves are softened and caramelised, about one hour.
Meanwhile, toast baguette slices on a baking sheet in 400 F oven until golden, about eight minutes. Spread pine nuts on a small baking sheet and toast alongside the baguette slices until lightly browned, about five minutes.

To serve, arrange baguette slices, garlic, pine nuts, goat cheese and parsley on a serving plate. Using a small fork, remove two cloves from the garlic bulb and spread on a baguette slice. Top with goat cheese round, pine nuts and parsley.

Beware! Taken with a glass of sweet sherry, cupid's arrow may find its mark before the crostini are finished!

Making Garlic Powder

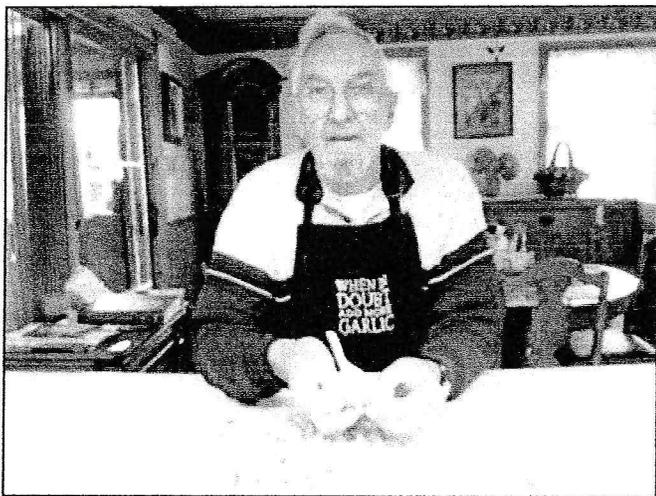
From the Garlic Guru's kitchen experiments

Garlic powder is made from dried garlic cloves, ground finely into a powder. Since I'd received a number of queries on it, I decided to get out my Model FD5 Food Dehydrator from Mr Coffee, the one I use for drying tomatoes in the fall, and try it on garlic.

Checking the instructions, sure enough, I found the instructions for drying garlic. They read, "Separate into cloves. Remove outer skin. Slice, then place to dry. Grind when ready to use." Under Dryness Test, it said, "Brittle." Under Drying Time, it said, "4 to 12 hours." Wow! With such precise directions, who could go wrong? Imagine, drying for anywhere between 4 hours and 12 hours!

Needless to say, I decided to add my personal touch.

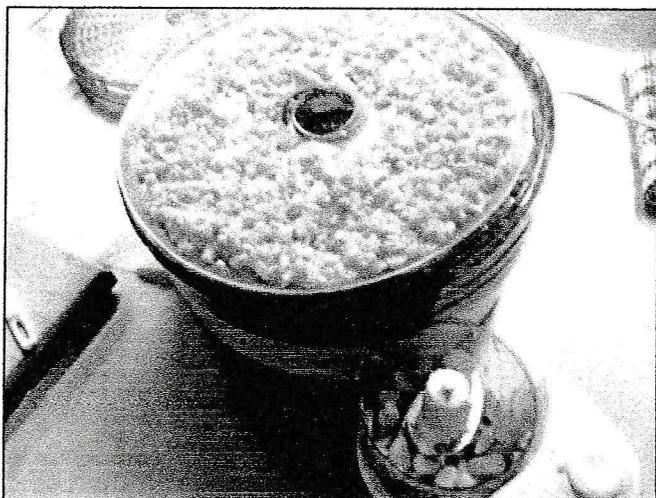
Preparation:



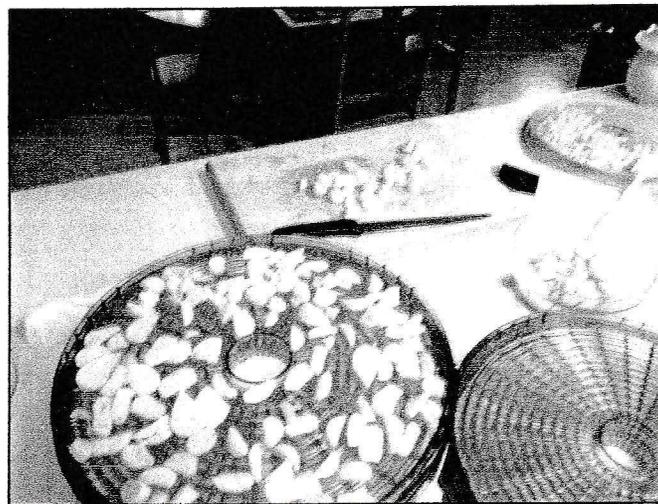
First, I cracked the bulbs into a nice pile of cloves. Then, I peeled them to remove the clove wrappers.

Method:

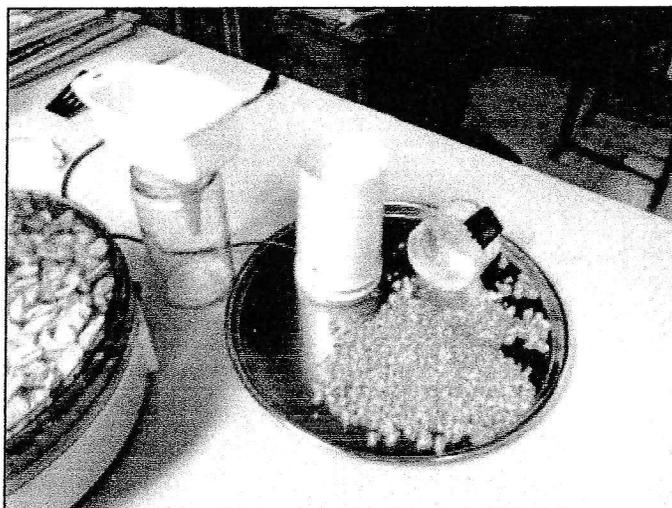
I chopped some cloves in the food processor and put them on the drying trays.



Then, I sliced some and put them on the drying trays. I let them slow dry for 8 hours, then, turned off the heat and let them sit overnight to finish drying

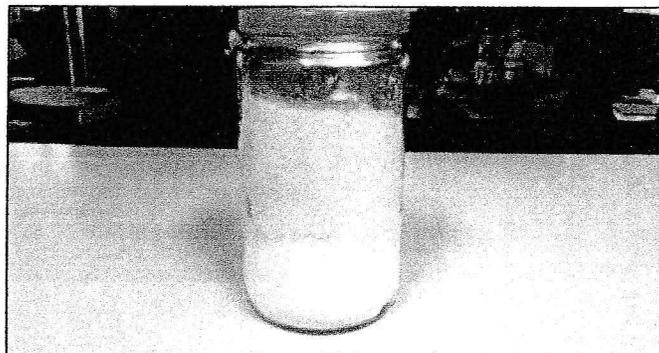


Next, grinding. I used a little household Braun coffee grinder. It worked very well.



The chopped cloves ground more easily and made for a lighter powder. The sliced cloves seemed to dry harder and tougher. When I sampled them, there was no apparent difference in taste. Both were very powerful, much stronger than commercial garlic powders.

The powder was put in an airtight jar and we now have our winter supply of dried garlic powder.



Note that the powder at the bottom of the jar, made from the chopped garlic, came out lighter than the powder from the sliced garlic.

More 2007 Garlic Festival Reports

These festivals occurred after the fall issue had gone to press. We offer them to our readers to encourage you to visit them in 2008. Editor

9th Annual Andrew Garlic Festival October 13, 2007

Juliana Melenka of Andrew, Alberta told me about this festival which has run for 9 years. She sent me newspaper articles, the Garlic Delights cookbook and a letter, saying:

“This festival involves people who are not big garlic growers. The Ukrainians have always used garlic, but after they came to Canada, they were ridiculed and called Garlic Snappers or bohunks and a few other names in not a nice tone of voice. Yet they put their noses to the grindstone and helped develop Canada to where it is now. Thanks to the people who came to the area in recent years. They realized what good cooks those of Ukrainian heritage were. Their secret ingredient? Garlic. They encouraged them to be proud of their heritage and of using garlic. Now, there is a festival here. Keep up the good work you have been doing. Garlic is a terrific plant. God Bless you! **Juliana.**”

God Bless you, too, Juliana and be proud of what the Ukrainian immigrants achieved and are still achieving. I, too, grew up in an immigrant community in Saskatchewan and felt the sting of nasty prejudice while growing up. It's too bad that some people are so short sighted that they cannot see the good in newcomers.

The festival started with a breakfast followed by shopping at the farmers' market. It featured many competitions of garlic and other harvest vegetables, a scarecrow competition and even a Garlic Princess!

The Famous Garlic Supper had everything with a taste of garlic: roast beef, pork, mashed potatoes, gravy, holubchi, nychynka, veggies, beets, mushrooms, Caesar salad and a bowl of crushed garlic to top off your plate!

The day ended with dancing to Victor Holubowich and the Royal Lites.



Garlic Princess, Danielle Danyluk and friend poses with this scarecrow that won 1st place in the adult category.

Photo courtesy of The Triangle

To obtain a copy of the “Garlic Delights” Cookbook, send \$8.00 per book ordered to:
Friends of the Andrew Garlic Festival Association,
Box 368,
Andrew, AB, T0B 0C0

🍷 The 1st Annual Stratford Garlic Festival, Saturday September 15.

I can provide a first hand report as my grand daughter Ashley and I were there with The Garlic News information stall, freezing to half to death and handing out freshly made chocolate-covered garlic cloves to frozen garlic aficionados.



Ashley

Despite the unseasonably cold weather, the festival was one of the best I have ever attended, a credit to the hard work and outstanding organization of the event by the Kiwanians.



Entry Gate

At the gate, a volunteer from the Kiwanis welcomed everyone. From there, one went to well-arranged grounds, moving from the Garlic Growers Marketplace to crafts, food vendors and entertainment. The education tent was in a quiet corner. Garbage cans were available in strategic spots. Portable toilets were convenient but discretely out of the way. Festival logo t-shirts were reasonably priced. Well, in just every aspect, it was superbly organized and run.

Garlic. Well, there were truckloads of it! Perhaps, a bit of optimism on the part of some of the larger growers, who need to adjust their thinking from 50-lb onion sacks to retail packaging when selling directly to consumers at a festival?

Well done to Warren Ham of the Growers Association and to Ron Deichert, Kiwanis Club festival coordinator!

Overall, it was a fine festival with a promising future.

“To eat or not to eat garlic, that is not the question. The question is, “how much to eat and how to eat it.”
Ted Maczka, speaking at the Stratford Garlic Festival, the Canadian home of Shakespeare plays.”

87% of all statistics are made up on the spot. Farm n' Friends

More calls and letters from our members

(Continued from page 4)

Jim Craig of Essex County wrote: Any idea where I can buy mustard seed as described in issue #10. I live in Essex County but cannot find anyone locally that sells it. Thanks.

Editor: I bought my mustard from Homestead Organics. Their website is: <http://www.homesteadorganics.ca/seeds.htm>. I believe they ship but you have to contact them. Mustard seed is very small, like radish, so a little goes a long way. I bought a 50 lb bag, split with another grower and still had enough for three plantings each summer for two summers.

Spring planting in Saskatchewan

*Editor: I contacted **Al Boyko of Canora, Sask** since he hadn't gotten his garlic planted in Fall 2006 (he spring-planted in 2007) and asked: "Do you have any seed garlic for sale? I'm still getting inquiries for garlic from western Canada."*

Al replied on October 14:

"Yes, I still have seed garlic for sale. I have mostly softneck but also a small amount of hardneck. I have finished digging out this year's garlic crop and am very pleased with how it turned out. It is probably the best results we have had since we started this adventure. I got all of it planted by May 1st and started digging on Sept 1st. The plants did not start dying back till after the middle of August. Both hard and softneck had a lot of large bulbs.

I am not sure how much the weather had to do with it or if it was the spring planting that just works better in this part of the world. I am hoping to test my theory this year by planting some this fall and also planting some next spring as a side-by-side comparison.

Also, I had some calls from people looking for garlic. I understand that you have been giving them my name. Thanks, I appreciate that." **Al**.

Planting Bulbils too early. Delia Barkley of Morrisburg, Ontario asked: Hello Paul. I have a garlic question. I planted some bulbils this year, putting several in a flowerpot and burying the flowerpots level with the garden. They grew nicely but I don't remember what I should do with them over the winter.

Editor: If they were this year's planting (summer 2007), you likely planted them too early, as they wouldn't have time to finish growing. If that is the case, leave the pots in the ground and they should survive the winter and finish growing next year.

Plant bulbils on the same timetable as cloves. You harvest them the next summer and replant that fall. Depending on the Variety, you'll have full size bulbs after 2 -5 repetitions. Czech Broadleaf bulbils produce mainly bulbs in their first year. Replanting the cloves from these produces large bulbs. At the other end, a Music bulbil produces a tiny round the first year. Replanting the round gets you a larger one, then a small bulb, then a larger bulb and finally, in the 5th harvest, a full-size bulb.

Delia again: Your first guess was right. I planted them in the spring/summer and they haven't finished growing. That's what threw me off. The leaves are still green. So I'll just leave the pots in the ground as advised. Thanks for the information. It's always fun to try something new.

Garlic Dibble. Debbie DeCooman of Chesterville asked: Is there a plan or does someone have the instructions on building the planting tool like Sep Bonner had the time he came to the Garlic Festival? Maybe you have seen other methods of planting in your travels. You should do a feature issue on planting, both by hand and mechanically. This might just encourage some people on planting more and create new growers for the ease of doing it. **Debbie**

Editor: The instructions for building the garlic dibble are in Issue 1 Fall 2004, on page 7, at the end of the article. Your idea on featuring planting techniques is a good one. I'm working on something for a future issue on designs for a mechanical planter. Many of the ones in use are merely adaptations of planters for other crops, strawberries, potatoes, corn, etc but growers are designing special ones as well. There's enough variety there for a good feature.

Judy of Judy's Organic Herbs asked about planting old seed. "I just planted a few garlic cloves that I harvested in July 2006 and were sprouting. Will they develop into decent garlic or should I just plant firm cloves that were from this year's harvest? Thanks so much for your advice. Green Blessings." **Judy**

Editor: Hi Judy: Yes, they will grow. No, they will not likely produce a suitable crop (too many root buds have dried out and died), and yes, you should plant fresh stock from 2007 harvest.

Anna Schaab of Yorkton, Sask. wrote:

Hi Paul! Just received our copy of the Garlic News. Lots of information packed into it! Hope things are slowing down and you are able to put your feet up for a few months. We don't put our garlic on hilled rows, but we are going to try and put some straw down to help with the weeds. Have tried plastic mulch and it works great! **Anna**

Editor: Put my feet up? Not likely, Anna. I'm retired. That means working 16- hour days, 9 days a week and 14 months a year.

Ted Meseyton, the Singing Gardener asked:

A homemaker who made refrigerator-pickled garlic & brine pickled garlic (similar to a cucumber dill recipe) wants to know why some of the cloves turned green in their jars, while some of the cloves remained entirely natural in colour (white) in their jars.

1. She boiled the garlic cloves using the fridge brine recipe. In other words, the cloves were cooked. They stayed white
2. She poured hot, boiled brine over the dilled garlic cloves (uncooked garlic cloves). These ones turned green. There is a fresh dill head in these jars. Sampled them and they taste great. Do you have any feedback to offer regarding the colour changes?

Editor: Pickled garlic does turn green or blue if you use the cloves completely raw. It has something to do with the sulphur in the garlic reacting with the vinegar. The colour doesn't hurt, the pickled garlic tastes OK but the odd colour does put you off. To avoid the problem, you prepare the cloves beforehand. Simply, you blanch the cloves (don't cook them or you destroy the flavour) and then follow your favourite pickling recipe.

Yields? What size of the cloves should one plant?

By: Ted Maczka, the Fish Lake Garlic Man.

As an amateur farmer with a vision of making Canada self-sufficient in growing garlic and developing finest garlic in the world, I decided to do it. Not knowing the basic how to grow it, all I knew that it could be grown in here. Looking back almost 30 years, there was hardly any good information on garlic growing available. The people who grew it in their backyards were not keen to share their knowledge.

Eventually when I came across some information from California, it was a little baffling. It said: "plant the largest cloves, eat or throw away small one." It was something against my principles, to throw away small cloves so I decided to plant them and to plant some of the bulbils (bb) the results were very encouraging. What I didn't realize at that time, they were growing peanut size 1 oz. bulbs and calling them large, not a 4 oz. + (115 gr. +) which I call large.

Few years later when I came across some research from India's University and Egypt's, I was doing much better, then they were. My conclusion was that we have an ideal climate to grow garlic. What I learned later, in California they were growing mostly soft neck garlic, bulbs having 20 cloves and more. While I grew the gourmet garlic of a Rocamboles and Porcelain variety, the bulbs in F1 a Rocamboles variety having up to 12 cloves and in porcelain 4-8 cloves and weight up to 160g. (6 oz.) As time went on, I increased growing many different varieties.

My favourite F3, which is a Porcelain variety, is known as a Russian Red. From the tiny bb 4.015-0.150g I have been getting different varieties of garlic. An original variety and two distinctly different varieties. In my imagination I would say they could be mother and father of F3. One would be the Porcelain type but smaller plants and bulbs and producing tiny bulbils. I named F31 and second variety is a Rocamboles type F32 with a large bb. So I came to conclusion, F3 must have been some kind of hybrid, which has been created many years back. There is an amazing thing with F3, when it is grown from the bulbils, it produces different relatives. The bulb may have four cloves, six cloves or up to eight cloves. A similar thing is noticeable in the Rocamboles some bulbs may just have six cloves; the others may have up to eleven cloves. Also some may produce bulbs, containing 2-7 cloves under a single skin, which was a welcome to some large users. That what my original F1 was doing, but not consistently. After many years of experimenting I gave up.

Looking at the misleading info, where our government so called the Agriculture experts taught farmers how to go broke by growing garlic. Plant the largest bulbs: What did they mean by a large bulb weigh 1 oz (28g)? To me it is peanut size. Looking at the plate one from the top we have F3j. J stands for the junior, a young generation bulbs grown from the F3 bulbils. I find them more productive planting seed stock, then regular bulbs, grown year after year. While planting largest cloves year after year, I noticed degenerating affect. I would get smaller yields and in many cases a smaller bulb then the clove I originally planted. It seems to me a younger generation has more vigour to grow. Planted 3g cloves 200g quantity and harvested 2125g. The average yield was 1:10.6, or in simply English from one lb. I got ten and half lbs. The last column shows the smallest and largest bulb grown. Now, lets looks at 11 gr. cloves the average yield dropped to 1:5.6 and the bulbs were larger. Going down to F3 23g cloves yields drop down to 1:2.8 making very poor yields, the average bulb weight 60g (2 oz.). Of course you may get a few

larger bulbs 115g + (4 oz. +) but an overall premium from sale will not be as gainful, as grown from the medium or smaller size cloves. In my many years of experimenting with planting of the large size cloves or rounds up to 60g (2 oz.) I found them very poor yields sometimes getting smaller size bulbs what I originally planted.

Conclusion the older and larger bulbs get, they are losing a power of reproduction. Therefore, my suggestion for planting garlic, eat or sell largest bulbs, use as a planting seed stock medium or small size bulbs. This refers to some large size bulbs Rocamboles type and Porcelain variety. By large I mean 115g+ (4 oz. +).

As to planting and harvesting F3 garlic mechanically it is not a smart idea. This is gourmet garlic. It should be handled with a loving care and growing strictly organic. Research in England many years back found that some of the beneficial oils were missing in the garlic grown with man-made fertilizer. As to planting any bolting type of garlic with the machinery, cutting off scapes with a lawn mover mounted on the tractor, harvesting with the machinery, yes, it can be done, but can one maintain a quality? Not what I noticed so far! Here is the best example, what they accomplished in California, the soil is riddled with disease and the largest grower of garlic quits growing and turns to import Chinese garlic.

Looking at the F3B, some rounds grown from bulbils, their yields were better then cloves of the same weight. Why? It seems at the base. It has a larger perimeter of root system? F3 bulbils may weight 0.010 - 0.165g+ I plant them in pots or a larger container filled with a black loam from the swamp and mix some wood ash. Being crippled, it is much easier for me to weed or harvest from a taller container then ground level. Those tiny bulbils when planted proper way, in the fall or very early in the spring, will give one very good planting seed stock. One can broadcast them and cover up with the fine soil 1 cm. (0.5 in.) Then harvest large bulbs for fall planting; rest can be harvested following years. The larger size bb one can plant pointed part up. Spacing can be 1 cm. <+ in all direction. If one has problems to distinguish bottom, one can soak them 2 - 5 days ahead. Then you will notice white roots coming out. Make a hole in the soil with a pencil pointed end, and then drop the bulbil in. Cover it up with 0.5 cm. (0.25 in.) and the loose soil.

Following is an interesting experiment. F3bb, 20 each weight 0.060g were planted in some foam cups four per cup in early March. They were transplanted into a larger container with loving care and minimum disruption to the roots. The average yield was 1:54; smallest round (bulb) 2.5 gr. making yield 1:41.6; a largest round 4.2g yield 1:70. Those are an excellent result from an amateur farmer. Those bulbs will make an ideal planting seed stock for the fall planting. Please note: results listed on drawing # 1 have been obtained by planting garlic by hand roots down. If one drops the clove or a bulb sideways in the ditch, results may not be as good. Also keep in mind, the sun, moisture in the soil, a natural fertilizer and weeds, too much or lack, all can act positively or negatively on yields.

PS. Please note: Research, Experiments and Spreading the Garlic Gospel are my voluntary contribution to humanity. If you need some more information, call me 7-10 pm EST. 613-476-8030 or write to: Ted Maczka, 1133 County Rd, RR2, Picton, Ontario, K0K 2T0 Please enclose a self addressed stamped envelope and a small donation will help in my endeavour.