



THE GARLIC NEWS

Your Window to the Great, Glorious World of Garlic!

SEASON'S GREETINGS TO ALL OUR SUBSCRIBERS FROM THE TEAM AT THE GARLIC NEWS! May 2005 bring peace and contentment to your life and a bountiful crop of garlic to your garden.

Here at Beaver Pond Estates, Mary Lou and I are enjoying our winter. We had a very nice autumn although our garlic planting was made a little difficult by an excess of rainfall. With muddy boots, we managed to get the last of it planted. Winter came a bit earlier this year on December 1, with plenty of snow and several bouts of freezing rain and quite cold for this part of Canada. It was likely one of the coldest on record.

Now, the garlic is snuggled deep in the garden, cosy under a blanket of mulch and snow. Having set roots before freeze up, it will rest through the long winter until the April sun awakens it to begin its yearly task of growing lovely, delicious bulbs. With luck, the snow cover will stay all winter.

This is the 2nd issue of the new Garlic News. It's packed with lots of new information and excellent articles by guest contributors. We've included some to help you with planning and marketing next year's crop. Take a quick scan through and then just settle down and read through it all.

Challenges Facing the Market Grower

Growing a profitable crop, even a good one like garlic, is a difficult task in today's world. The Garlic News regularly publishes articles with ideas to help growers.

Market gardeners face three main challenges in growing for a profit: planning, producing and marketing.

Planning: Garlic has only very recently been introduced to the farm sector in Canada. Good information is scarce and it lacks the many years of farm experience available for other crops. Sound planning by the prospective grower is needed in order to grow it well. Networking or sharing of information between growers is essential. Otherwise, imported garlic will continue to dominate the marketplace. Trials reports and planning data in the Garlic News can help in making sound growing and marketing plans.

Producing a good crop: While garlic is not difficult to grow, it's different from any other vegetable in its growing cycle, nutrient and moisture needs, specialized handling at harvest time and many other aspects.

WINTER 2004 ISSUE 2

Growers looking to increase production through mechanization would be prudent to exercise caution. Machinery needed for the gentle handling required by garlic is either not available or difficult to find, resulting in poor choices. At this time, handraulic methods are best for operations involving the handling of the garlic itself while machines are best for working the soil. See page 11 for an Aide-memoire on mechanization.

Marketing: By far, the most difficult task is selling the crop at a profit. A grower just does not have the time to harvest the crop and be out selling it at the same time and quite often, lacks the marketing skills needed to sell in a specialty or niche market.

With the below-cost prices set by imported garlic, selling to supermarkets is a poor choice. Some form of direct marketing to local niche markets offers the best returns for market gardeners.

Forms of direct or co-operative marketing to consider:

- Farmers Markets. These have come back in the past 15 years and have a dedicated following.
- Garlic Festivals. These are the most effective marketing technique, attracting consumers specifically looking to buy garlic.
- CSAs or Community Shared Agriculture are pre-arrangements with customers to buy a weekly box of fresh organic produce from a farm or group of farmers. The grower is guaranteed regular sales.
- Farm Gate Sales or Roadside Stand. If your farm is located on a busy highway, this works well in conjunction with other forms of direct marketing.
- Co-operatives. Farm co-ops are enjoying a renaissance due to the need for small growers to compete against cheap, imported food. Their purpose is to share the work and costs of marketing among members, in order to sell more effectively. A variant of co-ops is shared cost advertising.

Quinte Organic Farmers

In this issue, on page 9, you will find information on one version of a co-op as being tried out by a group of organic producers in Ontario. This group discusses their experience in not only some of the difficulties, but as well, the successes of co-operative marketing.

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Your Window to the World of Garlic
Winter 2004 Issue # 2

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ABOUT THE GARLIC NEWS

The *Garlic News* uses a newspaper column layout and larger print size for better readability. 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* 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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In This Issue

Challenges Facing the Market Grower	1
Planning, Growing and Marketing your Garlic Crop	
News From the Garlic Patch	3
About garlic happenings and personalities	
Calls and Letters from our Readers	4
Networking by growers	
Organic Sources of Nitrogen Supplements for Garlic	5
Ken Willis discusses organic methods for increasing yields	
Editorial Page	6
The Garlic Song	7
Lyrics to a little ditty by New Zealand entertainers	
Weather Forecasts for the Coming Winter	7
Which forecast should you believe?	
Leek Moth News	8
Peter Collis tells about a new problem encountered with this pest	
An Approach to Cooperative Marketing	9
The Quinte Organic Farmers share information on a new initiative	
Garlic and Health	10
Dr Kathy Wickens and Master Gardener Lloyd Strachan share some Thoughts on this important topic	
The Best Garlic Recipes	11
More Italian goodness - olive oil, bruschetta and garlic croutons	
Planning Charts for Calculating Seed Garlic	12
A quick reference to help in planning different size plots	
Testing the Garlic Dibble	13
More on this useful planting aid for small growers	
Aide-Memoire on Mechanized Garlic Production	13
Some do's and don'ts to keep you out of trouble	
The Garlic Directory	14
Ads, listings and useful garlic contacts	

Enclosures: Gift Subscription Form & Garlic Directory Special Offer
: COG Membership Application Form

Using the Garlic News in Your Field or Garden

The *Garlic News* is a working textbook for growers and gardeners. The information is of practical use in your field, garden or kitchen.

First, get a 3-ring binder to keep your issues conveniently ready to use. You'll notice that the inside margins are a little wider. This is so you could use a 3-hole punch without cutting into the text.

Better still, buy some top-loading plastic sheet protectors, one for each page. These are available in stationery shops and cost only pennies each. This way, you can keep the pages protected from dirt and water when using it in your garlic patch.

Keep all issues in the binder along with your garlic growing records and any other articles or information. That way, you'll have it all in one place, convenient for use indoors or out.

Would You Like to Help?

Yes, you can help. Here are some ways:

Promote the *Garlic News* to other gardeners by handing out application forms or having them contact us.

List your garlic or garlic products in the *Garlic Directory*. Send contacts of possible garlic-relevant advertisers.

Be a contributor to the *News*. Write articles or send us your favourite garlic recipes.

Keep an eye out for interesting cartoons, stories or facts about garlic and send them in.

Articles should be no longer than 400 words. Pictures may be either colour or B&W. Deadline for articles, ads, recipes for the Spring Issue is March 6.

News From the Garlic Patch

IN MEMORIAM

Dorothy Kate (MacDonald) Burnham
November 6, 1911 – October 24, 2004

Dorothy provided the biblical quote for the first issue of the Garlic Newsletter and helped by proof reading every copy except the last, when her faculties failed her in her 93rd year. She was a devoted supporter of our garlic community.

The Garlic News on Boundary's website: Hi Paul. We would like to help the Garlic News get on its feet. At the moment we are getting close to two hundred visitors a day to our site so your notice would get lots of exposure if we post it. What do you have in mind? Henry thinks we could write a short article in December on growing porcelains up from bulbils. Henry and Sonia.

Editor's Note: For those on the Internet, go to Boundary Garlic at www.garlicfarm.ca to see the notice on the Garlic News. Thank you Henry and Sonia!

The Garlic News on King's Creek Garlic website:
Thanks Ray & Diane for co-operative promotion. Check: <http://www3.sympatico.ca/diane.bradley01/>

Pat Garrioch wants to grow garlic in Winnipeg:
My name is Pat. I am Harold's daughter that Pauline told you about. I'm in the baby stages of becoming a gardener and have had a little success with garlic. Really though, I'd like to learn more. Thanks for any info. Patrica

Editor's reply:

Thanks for your garlic query. I'll try and get you started into garlic from the very beginning.

First, attached are some articles based on our growing experience. If you have trouble opening them, send your mailing address and I'll mail them

I've also attached information on the Garlic News. If you get into garlic, you'll want to subscribe to it as it's a great educational paper. It's not on-line yet but will be someday.

Now Winnipeg is a bit colder than we are here, your zone 2B to our zone 5A, so you could be a bit late to plant now if your ground has frozen early. If it's still workable, go ahead and plant. We're in the middle of planting the trials plot right now.

Be sure to use good northern hardy seed garlic from a local grower, not the Chinese garlic from the supermarket. T&T seeds in Winnipeg also sell suitable seed garlic. They even buy locally from Keith Murphy, a local grower in your city. "Seed" in garlic refers to the cloves that you get when you break apart the bulb.

That's likely enough to digest for now. I'll answer any questions, no matter how unimportant they may seem to you, as garlic is different from any other vegetable in your garden. Paul



Hardy Garlic

Garlic has to be very hardy to thrive in the severe weather encountered in some parts of Canada. This photo of the tender new garlic spears at the

Beaver Pond Estates trials site was taken April 24, 2004, after the 2nd return of winter, following two bouts of hot weather in March and April, each followed by a return to freezing winter weather and snow. Garlic has to be very hardy to survive such rapid changes.

2004 was especially demanding on over wintering crops. The ground was frozen to a depth of 3 1/2 feet as severe cold came before the insulating snow cover finally arrived in January. That's harsh.

The Small-Plot Garlic Variety Trials are conducted to determine which garlic strains will not only survive but also thrive in this demanding climate. Not all strains make it and a number have failed in even a normal Canadian winter. Growers are advised to grow those varieties and strains proven suitable for their region.



The ubiquitous Fish Lake Garlic Man, Ted Maczka, has been making the news again. With his absence from the Royal Winter Fair, garlic exhibits were down and so were the visitors to the vegetable section of the fair.

Ted goes in for his knee replacement operation December 08. If you're in Belleville then, drop in to cheer him up. **Ted's big news** is a new garlic strain. It was neglected garlic that a friend brought to him; small bulbs, only 2 cloves, but Ted says it has "extra bite", even better than his famous F3. Next year, watch for it as F13, Hardy Boy.

Some Great New Garlic Strains at the Small Plot Garlic Variety Trials this year ----

Luciano Pradal brought me a couple of bulbs of Sicilian garlic. **Margaret Plume** gave me two bulbs of Mammoth to try out. Then, **Joe & Agnes Barada** dropped over with some bulbs of garlic from Malta. As well, **Maple Bay Organic** shipped me 5 strains from balmy B.C. to try in the harsh climate of Eastern Ontario's zone 5. Add to that some that I picked up at garlic festivals this summer makes for a total of 12 new strains starting their first year evaluation in our Small-Plot Garlic Variety Trials this fall. That brings the total to 140 different types since we started the trials. Most have proven out very well, but obviously, not all have been found suitable for northern growing!

Topping the 2003-2004 first year trials were **Simon de Boer's** two huge strains, German Stiffneck and Polish Jenn. Both these received unconditional approval after their first year, needing no time to adapt to local conditions.

Tasks seem simple to those who haven't tried to do them

Calls and Letters From Our Readers

We received numerous emails, phone calls and notes of appreciation about the Garlic News. Here is a sampling of some of the many that came in.

'Good Job, Paul!' Ted Maczka called to say he enjoyed the new Garlic News. 'Good job, Paul! You did a lot of work on it'.

Thanks, Ted. Nice comments are encouraging.

Wanda Storto phoned: I don't want to miss the first issue. My application is sitting on the table waiting for someone to take it to the post office.

Your copy is already in the mail, Wanda. It should cross in the mails with your application!

Connie Horbas wrote: The newsletter was very good, and I am glad that you have taken on the big task of doing it. I know what trouble it is, I have done a newsletter for the Horticultural Society, and the goat association. If there is something I can do to help via email please let me know.

Thanks, Connie. Yes, your help would be very welcome. Here's a list of ways - (see page 2 "Would You Like to Help?"). Yes, also, to all growers wanting to help or contribute articles or news, you too are welcome. Editor.

Void to fill: There is a void to fill in terms of disseminating information, especially with your knowledge and the hard work you put into it. The audience out there is waiting for it. I am willing to help out in some fashion in the creation of a new publication, certainly as a contributor. **Kenny Willis.**

Editor's reply: With all the encouragement, the Garlic News is a reality. Kenny's daughter Tina sent an excellent cartoon, which appears in this issue.

Alive and well: Thanks Paul. I'll get the application right back to you. Glad to hear the publication is still alive and well. All the best. **Mike Gillespie.**

Marilyn Lee wrote: I just received the new Garlic News today. You are right in presuming that I will sign up. I'll mention it to Karin too. Thanks for sending it along. You can count me in.

Thanks very much for lending me the three back issues of the newsletter. I'm putting them in the mail back to you today. Happy planting. I've already started. I know it's not coordinating with the moon right now, but some of it will. It's not that I grow so much, it's that I'm that slow, a fair-weather gardener!

Editor's reply: We're pleased to have you as a member, too! It's better to plant it well, not fast.

"There are five elements: earth, air, fire, water and garlic."
- *Louis Diat, French Chef (1885-1957)*

Send information: I saw your letter in the Organic Growers magazine. We have a small garlic operation, but are interested in getting your newsletter. Can you send some information?

Thanks, **Mark LeRoeye**

Editor's reply: Hi Mark. The fall issue has just been mailed. You can still get it.

Interested: Yes I am interested in the garlic newspaper and will mail the application form with a cheque. **Regards, Walter Budz**

Bill & Kath Worsfold from New Zealand, wrote: Hi Paul. It's great to hear from you. We hope you and Mary Lou are both well. Of course you are welcome to use my Garlic Song. I have written out the words for you. At the time I wrote the song, August 7th 2000, we were on the way to play for you, and I thought it was absurdly over the top; but that was before I met everyone there and found that most of the things I thought were crazy, were actually almost normal! I still remember trying the garlic fudge, garlic cheesecake and garlic lemonade! I do hope we can make it back there sometime. Cheers, Bill Worsfold

The words to the Garlic Song are on page 7.

Sicilian Garlic: I just came back from Italy and brought three heads of Sicilian garlic that I got from a farmer's garden. I can give you one or two of them so that you can start another specialty plot. Some one in Italy recommended me to put my garlic down on Nov. 11th in a hole with ashes. What do you think? **Luciano, Ottawa**

Reply: Many thanks for the garlic. November 11 is a suitable time to plant in Ottawa. As far as ashes go, use them sparingly. Too much ash will raise the pH of your soil.

Carol Tisdall, an organic garlic grower wrote: My crop this year was very poor because of wet cold weather both at planting time last fall and growing time this spring. Most of what grew was quite small in size so I want to start with new seed. I am looking for garlic seed and would like to know if you have any for sale. I'm looking for Red Russian and Artichoke to plant. How much you charge per pound and you ship.

Editor's reply: There's a shortage of seed garlic this year as it was a poor crop through most of the region. Ours sold out by end August this year and I've been trying to put buyers and growers together but there are more buyers than there's garlic. Try these local growers, ___ & ___. They may have some left. Paul

Carol again: Thanks for your info, Paul. Margaret Plume had Red Russian and some soft necks so have ordered from her. **Carol**

Organic Sources of Nitrogen Supplements for Garlic

By Ken Willis, N.P.D

Supplemental fertilization of the garlic plant with a source of nitrogen can help to increase bulb size and quality, thereby increasing yield. Nitrogen is essential for the green growth stage of garlic, producing healthy, vigorous leaf and stem tissues. However, the misuse of nitrogen can seriously decrease quality by increasing the incidence of penicillium mould (*Penicillium corymbiferum*) and decrease storage time. With the exception of extremely poor soils with low levels of fertility, the use of other plant nutrient fertilizer such as potassium or phosphorous will produce little effect on garlic yield.

Conventional chemical farmers will use a source of nitrogen called 33-0-0 (ammonium nitrate). It is applied at three-week intervals starting at the 2-3-leaf stage after emergence in early spring, at a rate of 37kg/ha or 33 lbs/acre. This method of fertilization is very fast acting as the nitrogen is water-soluble and translocates to the garlic plant readily. Over-use of this fertilizer results in an increased incidence of penicillium mould.

Ammonium Nitrate is a prohibited substance for organic growers.

The availability of an adequate supply of nitrogen can be a difficult practice to manage for organic growers. With the addition of soil amendments such as manure, cover crop plowdowns or mulch material, you can greatly reduce the need for additional sources of nitrogen. Well-balanced soils with high organic matter content may in fact require no additional nitrogen supplementation. For the purpose of this article, I will not discuss building soil fertility and the following is a discussion on nitrogen sources as supplements.

The old time standby of organic nitrogen fertilizer for garlic was blood meal. Blood meal is applied in the fall just prior to planting time and has an analysis of 12-0-0. Due to the issue of mad-cow disease, it is now not allowed in certified organic production.

Alfalfa hay is a great source of nitrogen for garlic. As quality of the hay varies, there is no way of predicting the nitrogen analysis. It should be applied in August before October planting at a depth of 1 or 2 inches and incorporated into the soil. In dry years, watering will help to break down alfalfa to prepare for planting time.

Alfalfa is a major ingredient in organic, commercially available fertilizer blends now available for purchase in bags at garden supply outlets. These blends may contain many other ingredients, such as corn gluten, rock phosphate and greensand, therefore supplying various plant nutrients. It is very much 'buyer beware' with these products and you should check for the OMRI approved sticker before purchasing. Follow directions on the label.

Organic fertilizer blends generally contain an analysis with a low percentage of nitrogen, usually below 5%.

A low analysis nitrogen fertilizer helps prevent the penicillium mould and problems from nitrogen overuse.

The slow-release property of a nitrogen source is an important factor because nitrogen must bind with organic matter content in the soil or it will leach out into groundwater or volatilize into the atmosphere.

Crab shell meal will supply nitrogen very slowly to the garlic plant as the shells take a long time to break down. It should be incorporated prior to planting in the fall at a rate of 112 kgs/ha or 100 lbs/acre*. With an analysis of 3-3-1, crab shell meal will also supply a balance of micronutrients. The main drawback to using crab shell meal is it is expensive.

For those who have a readily available source of quality compost, the use of compost tea as a soil drench is the best overall choice in supplying nitrogen as it is economical, clean and provides a readily available form of nitrogen, which is utilized by the plant immediately. Compost tea should be applied in the early spring starting at the 2-3-leaf stage and repeated at three-week intervals for a total of three applications.

The last type of nitrogen fertilizers useful for garlic growing are the commercially available, water-soluble fertilizers made from seaweed, kelp or fish. These products are offered in many formulations and supply varying degrees of nitrogen. They are diluted with water and utilized in the same method as compost tea. Always follow directions on the label. I recommend the hydrolyzed fish and kelp formulations of these products.

For certified organic growers, be sure the product is approved for use. Avoid fish emulsion formulations from farmed fish as they may contain antibiotic residues.

To grow great garlic, it is important to start with building a well-balanced soil. However, considering the factors of ~~time of application, water solubility and low rates of~~ application, those who are looking to add a source of nitrogen will improve the yield and quality of the garlic harvest.

**Note: multiply lbs per acre by .04 to get lbs per 100 square foot.*



Ted Meseyton, the Singing Gardener from Portage la Prairie, Manitoba writes; "Me, Ted, write a garlic song? Why not? After all, I sing about lilies and lobelia, beans and tomatoes, wild flowers and potatoes." Ted has railway caps, CD's and cassettes and a pure white beard. Contact him at: singinggardener@mts.net or, in season, each Nov & Dec at singingsanta@mts.net

Editors Note: OK, Ted. Let's have that song about garlic! As well as the lyrics, how about a popular tune so everybody could sing it at a festival?

Editorial Page - Our Opinion

Do you grow your garlic organically?

In our own vegetable garden and the Small-Plot Garlic Variety Trials as well, we use sound organic practice. We encourage gardeners to grow organically, whether you grow for market or just grow for yourself.

Organic food is healthier for you. The methods used by growers are good for the environment. When you read almost daily of the damage being done to our air, our water, our climate and all parts of mother earth, that's reason enough to do something personally to lessen the waste.

Nearly one-fifth of the food consumed in Canada today is organic and consumer demand continues to rise, especially among younger families wanting to rear their children in a healthy manner. That's a far cry from not so many years ago when organics was denigrated as a fringe activity for kooks!

Garlic readily lends itself to organic methods. It thrives in organic soil and grows very well without the addition of any synthetic products. It is bothered by few pests and diseases so there is little reason to contaminate this health-giving vegetable with poisonous chemicals.

We support COG, the Canadian Organic Growers. COG promotes organic growing.

A COG Membership Application/Renewal Form is included with this issue for your convenience.

We are not in any way involved with the management of this organization. However, membership in COG is money well spent. It is the best source of organic information available to growers.

Use the contacts shown on the COG Application Form and send your membership application directly to them.

Now to the new Garlic News.

We are pleased that it has been so well received. Subscriptions are steadily coming in and the number of members from across Canada and some from the U.S.A grows weekly. We even had inquiries from France and Mexico.

Have we missed anyone?

If you know of a grower who might be interested in the Garlic News, please pass the attached application form to them or let us know and we'll send them one.

A diversified membership makes networking successful. As more growers join, the information base gets bigger and everyone benefits from greater experience.

We are particularly pleased that members are promoting the Garlic News. Both Boundary Garlic in B.C. and King's Creek Garlic in Ontario are listing it on the Internet. See page 3 for their website addresses.

If you'd like to be involved in promoting the News, let us know. See page 2 for ways in which you can help.

Send in your stories, pictures, snippets, garlic news or items of interest. We'll publish as many as space allows.

It's your news and articles that will continue to make the Garlic News "Your Window to the Glorious World of Garlic! Keep them coming.

The evaluation reports from the 2003-2004 garlic trials are not ready yet and will have to wait for a future issue.

The paperwork of keeping records on over 100 garlic strains is a rather ominous task. This is when I have to admit that the plague of the dastardly computer can be a blessing as well!



Want to Start a Garlic Festival?

Garlic Festivals are spreading across Canada as interest in garlic continues to rise. They provide growers with the best marketplace for their fresh garlic crop, enabling selling at full retail price.

If you are considering starting one in your community next summer, start working on it now. There's a lot of planning and organizing it and you need plenty of lead-time.

We have reports and articles on experience from other festivals in our files. These can be provided at a nominal charge to cover costs of printing and mailing. Just ask.

BUY LOCAL, BUY ORGANIC, BUY CANADIAN

IT MAKES HEALTHY BUSINESS SENSE

The Garlic Song

Written and sung by New Zealand entertainers, **Bill & Kath Worsfold** at the 4th Annual Garlic Festival of Eastern Ontario held at the Carp Fairgrounds, Carp, Ontario, in August 2000. The song is performed to the beat of a "doubek", a heavy walking pole festooned with loosely attached beer bottle caps, which rattle every time it strikes the ground. Reprinted with permission.

Bill & Kath also performed at our local Maberly Fair after the festival and sang the Garlic Song as a tribute to Mary Lou and I. It was quite an honour.

CHORUS: Garlic! Garlic! We love eating garlic!
Garlic! Garlic! We love eating garlic!

1. The breakfast foods I love the most
Are garlic jam on garlic toast,
Garlic cream and coffee, too,
With garlic sugar – one lump or two!

CHORUS

2. I like garlic juice on garlic flakes
With a cup of garlic tea,
Chocolate-coated garlic cloves
Are just the treat for me!

CHORUS

3. Garlic's really good for you,
It will make you fit and strong,
It can cure every known disease
It's a pity about the pong!



Windowsill Garlic

It's easy to enjoy the fresh taste of garlic all winter if you have a sunny window. Just ~~grow a pot of garlic greens. They have the full~~ flavour of garlic, plus, they are fresh and tasty at a time when it's hard to buy decent garlic.

Take any windowsill container such as a flowerpot, fill it with regular soil, the same as you would use for indoor plants and plant your garlic cloves or bulbils. Push them about an inch into the soil and keep watered. In a few days, the garlic will be coming up. When the greens get about 8-10" tall, clip some off with scissors and use in place of regular garlic in your meals.

The greens have full garlic flavour. Just taste them. They will keep on growing giving several cuttings from each. Start a new pot every 3 or 4 weeks for a steady supply. We use the cloves from undersize bulbs – the culls – or even plant bulbils or rounds.

Don't expect to harvest any bulbs from your windowsill garlic. It's the greens that you're after.

If you still have some cloves left in the spring, grow some more greens in your garden. They'll tide you over until the new crop is ready.

What constitutes a living wage depends on whether you are paying it or getting it.

Weather Forecasts for the Coming Winter

From the Weather Network:

Weather-wise, what can Canadians expect for the 2004-2005 winter season? "A pretty average winter for the most part, but a few areas of the country will deviate from normal, experiencing warmer, colder, drier or wetter than normal conditions," says Meteorologist Lloyd Butler at The Weather Network. "The presence of a very weak El Niño in the equatorial Pacific should not have much of an impact on Canada's weather, so most areas should prepare for the usual doses of winter weather including snow, freezing rain and cold temperatures throughout the season."

Hard to be wrong with a forecast like that. All eventualities are covered!

From the old Farmers Almanac 2005:

"We derive our weather forecasts from a secret formula that was devised by the founder of this Almanac, Robert B. Thomas, in 1792. Thomas believed that sunspots, which are magnetic storms on the surface of the Sun, influenced weather on Earth. Over the years, we have refined and enhanced that formula with state-of-the-art technology and modern scientific calculations. We employ three scientific disciplines to make our long-range predictions: solar science, the study of sunspots and other solar activity; climatology, the study of prevailing weather patterns; and meteorology, the study of the atmosphere. We predict weather trends and events by comparing solar patterns and historical weather conditions with current solar activity."

Editors Note: Not a bad system. Seems it works as well, if not better, as our high-tech, taxpayer funded system!

From Art Briggs-Jude, neighbour, naturalist and author of many articles about nature from his observations at Bluebird Acres:

"Bushy tails, beaver houses foretell winter weather". "The Woolly Bear caterpillar, forecast a bad winter by its heavy coat and black bands wider than the brown". "A heavy blackberry bloom, deeper carrot roots, -- a large crop of acorns, dogwood berries and wild grapes and green leaves falling before they changed colour --- foretold of a hard winter ahead." "Animal indicators to a bad winter were larger than normal muskrat houses, beaver lodges with more sticks on the north side and extra thick fur on the bottom of a rabbit's foot." " -- hunters also checked the bushiness of the tails of the animals --."

Art goes on further to say, "And while some of these folklore clues were stretched for convenience sake, many were surprisingly accurate."

Editor: Living in the country, I'll put my money on Art. So far, this year, he's bang on and CBC is 100% wrong. Winter came three weeks early and it's been colder than normal.

A Late Hatch of Leek Moth in 2004?

Ken Willis of Iroquois first reported that a late hatch of leek moth larvae had made it into the bulbs this summer. Then, Peter Collis provided this confirmation:

“Dear Paul;

I hope I am not too late with my contribution to the newsletter. Here is a short description of my experience after harvesting and during the drying process in late July and early August. Make any changes that are necessary. Incidentally I have once again purchased all new seed garlic from garlic growers in areas away from Ottawa.”

Peter Collis, Stittsville, Ont.

Can The Leek Moth Continue After Harvest?

As a home gardener living in Stittsville, I have experienced problems with the infamous leek moth. The previous year I purchased all new bulbs for 2003 fall planting. In a new raised bed, 25 feet long by 4 feet wide, old soil removed and replaced with new sandy loam, new compost and fertilized with kelp, bone meal and green sand, I planted approximately 300 cloves from 6 varieties. A great harvest was anticipated.

The bed was watered regularly, fertilized and each plant inspected for leek moth eggs during the growing season. The bed produced many large size bulbs with minimal evidence of leek moth damage. A fairly large ladybug population was evident on the plants and may have kept the moth from hatching too many eggs.

At harvest time each plant was separated from the soil and the stalks were tied with string in bunches of 6 to 10 bulbs depending on the size of each bulb. They were hung to dry in the shade for the remainder of the day and then brought indoors to the basement where they were suspended from the ceiling. An oscillating fan was used to circulate air and speed up the drying process. The central air conditioning system removed moisture from the air.

About two weeks later, a few leek moths were noticed flying around the room at night when the lights were turned on. They persisted and increased in numbers despite frequent sprayings with a solution of insecticidal soap. It was during the third week that small white cocoons appeared everywhere, on the dried leaves, walls, and ceiling. Small holes were observed on many of the now dried bulbs when the stalks were removed and the bulbs cleaned for storage. Yes, the worms were hatching as they emerged from the bulb. Therefore all bulbs with the small holes had to be opened and infected cloves removed. Almost 40% of the harvest was lost. Each year I learn something new about this pest. Maybe next year will be better. In the spring, I plan to protect my garlic plants with row covers attached to a wooden frame that can easily be removed when needed. Wish me luck. **Peter**

To: Peter Collis

Subject: Re: Fall 2004 Leek Moth Damage-COLLIS

Hi Peter;

Thanks. The article is timely and it's good information as this is the first year that other growers had observed leek moth activity after the harvest.

I have a couple of questions on the sequence of your observations. Perhaps I'm not reading it right.

1) Had you noticed any cocoons BEFORE the moths were seen flying around "about two weeks later"? Moths should emerge from cocoons.

2) Had you seen any larva on the plants BEFORE the cocoons appeared in the 3rd week?

The events you describe appear out of sequence. Normally, you should observe: egg - larva - cocoon - moth - egg - and so on, in that order. Paul

Paul,

I agree with the sequence you describe on the leek moth's evolution. I first noticed the moth in flight or on the wall near basement windows where the drying garlic was hanging. Later I discovered a few empty cocoons as more moths emerged. It wasn't until I started removing the stalks that I noticed the large number of empty cocoons stuck on the dried leaves and a few white worms crawling on the plants. That's when I knew my garlic was severely damaged. When most damaged cloves were cut open, white worms were happily feeding on the inside of the clove.

I wasn't too concerned when the occasional moth appeared because the plants were safely drying in the basement. The moth was usually on the wall near the basement window. These I killed with an insecticidal soap spray. I never thought to look for cocoons. Had I looked at the leaves, taken the hanging bunches apart and examined the bulbs as soon as the moth appeared, I may have realized I had a problem and could have minimized the damage before it developed.

You can be sure I will be more vigilant in the future. Thanks for your helping in understanding the problem.

Peter

Editor's comment:

I receive numerous questions about whether or not it is safe to plant garlic grown in a leek moth infested area. In general, my reply has been that it is unlikely for the leek moth to spread through the seed bulbs. Neither the eggs nor the cocoons would normally be deposited on the bulbs, as they are underground. However, in view of this latest anecdotal evidence, it would be prudent to inspect ALL the bulbs and cloves for evidence of leek moth boring to eliminate the possibility of moving a live larva to your field.

I met a group of growers at the County Garlic Festival in Picton this past August. They had a co-op selling garlic and other organic produce. This is part of their story:

Elly Blanchard wrote:

The growers' co-op has 10 certified organic members. This past summer, some members were able to provide a good supply of produce to the stand in Belleville. We have a co-ordinator who was in charge of ordering from us what was needed to sell. The co-op bought the produce for 1/3 of our retail asking price. Surplus was either used by members or donated. Producers took back unsold meat each week. We are looking into restaurants and small speciality stores in the Kingston to Toronto corridor. We still have yet to find someone able to do the 'selling' and PR job of going to restaurants and other markets.

Kingston seemed like a very good spot for organic, but the problem was getting the produce to the person going there. We are very spread out here in Hastings, Prince Edward and Northumberland counties.

Funding from several counties, EFAO, COG, and a CanAdapt grant has helped us tremendously.

We are not a CSA by any definition. We buy from our members and sell it at markets. We need to refine the supply by each farmer to reduce waste, and at the same time have a broad range of items at the sales outlets.

We would like a warehouse with cold storage and approved kitchen, but that is far down the road.

Right now we are trying to move what we have in local venues and provide a good income for farmers. Right now, education, availability and promoting the Organic Farmers Co-operative name is our main effort.

I think it is a very promising group. **Elly**

Here are their names and emails of the other members.

Judy Denham: pw.denham@sympatico.ca

Ann and Bob Orrett: baorrett@sympatico.ca

Ken and Joan Marisett: kmarisett@sympatico.ca

Ann and John Van Der Heyden: woolerdalefarm@yahoo.ca

For EFAO, go to: <http://www.efao.ca/>

or contact: Ann Slater, President, and ph. 519-349-2448

Dear Paul

We are starting a co-op for marketing organic produce and meats. At this point we are a group of farmers working together to market our certified organic products of which garlic is only a small part. What are you looking for?

Bob Orrett, member of the Quinte Organic Farmers.

Bob again:

One of our members has written a short article about our new co-operative effort.

Dear Bob & Ann;

Yes, please send me anything you have, including pictures, for publication. Your group is an example of a workable solution, despite the frustrations that often accompany co-operative efforts. However, continuing to buy cheap, imported food from Chile, Argentina, Columbia, China, etc., is a far worse alternative for all concerned. Paul

Hello Paul; here is a picture of our Quinte Organic Farmers taken at the Picton Garlic Festival last August to go with my article. We're not yet registered as a co-op. **Judy Denham**



The Ecological Farmers Association of Ontario is an organization promoting sustainable farming in the province. The counties of Hastings, Northumberland and Prince Edward have seen an active EFAO group develop in the last few years. We have explored many topics of interest to small farmers at our meetings.

On a snowy day last January a new idea was born. Why don't we look into forming a co-op to sell our produce? Starting with only four members, the idea gradually attracted most of the other EFAO members in our group. We all wanted to be able to concentrate on producing rather than marketing.

To our great surprise, funding was quickly obtained from various sources for start-up costs.

As a first venture, we sold our vegetables and meat at the Belleville Farmers Market. Later, we expanded to a few days at the Kingston Farmers Market and a few other events, such as the Picton Garlic Festival. This first year a learning experience and we did not make a lot of money. Feeling our way along, we realized that we had an awful lot to learn about marketing. We did learn that it is almost impossible to sell to the big chain grocery stores any more. Our next step was to hire a consultant who had the knowledge we lacked. We are still in the middle of this process but it has been a very interesting experience. The learning curve is steep but we are still moving ahead enthusiastically. At the moment, we are designating a few stores and restaurants on which to concentrate marketing. We have found that so far, we are not saving any time by having a co-op. There are meetings to attend. It looks like it will be several years before we can just be farmers again but we are very hopeful that eventually we will be selling large quantities of organic produce in the area and being well paid for our efforts.

If you don't believe in co-operation, just observe what happens to a car when one wheel comes off.

The Healing Benefits of Garlic

By: Dr. Kathy Wickens, Chiropractor

Garlic has many healing properties. If a patient asks me what to include in a daily vitamin regimen, I like to mention garlic, whether they eat raw garlic, with its natural allicin, yes, smelly component, or supplemental garlic that has not had the allicin removed. In other words, the odourless garlic is not as effective. If concerned about the odour, eat more, or follow it with parsley leaves or alfalfa tablets after the meal.

The health benefits of garlic, related to the fact that natural chemicals can have powerful health boosting effects on the body, were well known to our ancestors. They used garlic to protect them from illness and to act as an antiseptic for a wide range of infections.

Modern dietary advice, supported by scientific evidence, emphasizes the benefits of a daily intake of garlic to be as follows:

- ❖ Lower total cholesterol (but raise the good-type HDL cholesterol)
- ❖ Produce more “natural killer” cells in the blood that will tackle infections and tumours
- ❖ Lower blood pressure
- ❖ Reduce the risk of blood clots (that are responsible for most heart attacks and strokes)
- ❖ Destroy infection causing viruses and bacteria
- ❖ Reduce the risk of certain cancers, in particular, stomach cancers.

Garlic acts as an anti-fungal, antibacterial, which means it can help with conditions such as ringworm or athlete's foot when used both internally and externally. It can also prevent or reduce the symptoms of a cold or flu virus.

Research is showing that garlic may have cancer-fighting properties. There is overwhelming evidence to suggest that you can boost your health by eating garlic on a regular basis. Work it into your daily diet by eating it raw (ideally) or cooked. Use it as flavouring, crush, mince or chop it and include this powerful plant in as many ordinary, day-to-day recipes, as you can. Don't just think of it as an occasional food item to be used for special meals or when entertaining. Instead, for example, add it to burgers, casseroles and salads etc. Let your imagination come up with new ways of incorporating it into your daily diet – ideas that will really suit you and fit in with your family eating preferences. The benefits far out way any concern for the “offensive” odour of garlic, so add garlic to your grocery list today.

Historical Note:

In the middle Ages, a German nun, St. Hildegard of Bingen, who wrote two medical textbooks, advocated raw garlic to heal the sick. The London College of Physicians recommended garlic for the great plague in 1665.

Eat Garlic

By: Lloyd Strachan, Master Gardener

Eat garlic as a regular part of your diet, and it may help prevent prostate and other cancers. Not only does it give food a special flavour, but garlic also seems to have broad anti-cancer effects throughout our bodies, according to new research from the National Cancer Institute.

Numerous studies have confirmed garlic's cancer-fighting powers. It doesn't take much to do the trick. Less than a clove of garlic every day is enough to cut the risk of prostate cancer in half when compared to men who eat no garlic. And that's not all. Garlic has also been shown to prevent cancers of the colon, stomach, and possibly breast.

Which just leaves this question: Is it better to consume garlic with food or as a pill supplement? That is currently being studied and the early results point to food. It seems whole garlic offers the best protection. Since very little garlic is needed for maximum benefit, as little as four to five cloves a week will suffice, researchers think adding a bit of garlic to your vegetable stir-fry or tucked in the roasted chicken may be better than popping a pill.

When garlic is cooked, it can lose many of its cancer-fighting enzymes. But you don't have to eat it raw to reap all the health benefits. Instead, peel and crush the garlic in a garlic press. Let it rest for 15 minutes, and then cook it.

If you can't stand garlic, there's good news. Onions also fight cancer in much the same way as garlic. Studies have shown that while garlic, onions, scallions, and leeks contain slightly different compounds, the substances that block cancer-promoting enzymes promote DNA repair and regulate the cell life cycle are found in all these foods.

More About Using Garlic

Garlic has been used as a medicine and a food since the time of the Egyptian Pharaohs and the earliest Chinese dynasties.

When garlic cells are crushed, they release allicin, the active ingredient responsible for garlic's characteristic odour. To be effective, garlic preparations must smell of allicin. It is a sulfide of the radical allyl, present in all the onion family. This oil is rich in sulphur, but contains no oxygen. The peculiar penetrating odour of garlic due to this intensely smelling sulphuret of allyl, and is so diffusive that even when the bulb is applied to the soles of the feet, the lungs exhale its odour.

The fresh bulb is much more effective medicinally than stored bulbs. Extended storage greatly reduces the anti-bacterial action. Leaves can be eaten raw or cooked. Chopped and used in salads, they are rather milder than the bulbs. The Chinese often cultivate garlic especially for the leaves.

Editor's note: See "Growing Windowsill Garlic", page 7.

The Best Garlic Recipes And Ideas



Utensils are simple; a good garlic press, a sharp paring knife for slicing cloves, a cutting board and a small, microwave-safe baking dish for roasting your garlic.

Use cold-pressed

extra virgin olive oil for flavour, and lower grades for cooking or frying. Fresh or dried herbs are useful as they give you more choice in creating tasty recipes.

About Olive Oil

Olive oil enhances and adds to the flavour of garlic. It is healthy, being cholesterol-free and low in saturated fats. By itself, virgin olive oil is tasty and makes fine dips and dressings.

Greece, Italy and Spain are the main olive oil producing countries. Greece claims the highest percentage of "extra virgin" from its olive groves and by inference, the best olive oil. The Italians, of course, will challenge that claim. As a gourmet, you must try for yourself and make your own taste test. All produce both excellent and poor oils and all have different grading systems. The following is a good guide to follow when deciding what to buy.

The first two pressings of the olives give you the best olive oil. These are generally sold as:

- 1) Extra Virgin, the best and most expensive grade. Cold pressed from ripe green olives, usually green to amber in colour, low acid and full of nutrition. Use this grade for dipping sauces, salad dressings, antipasti, fish, etc., but not for frying. It's too expensive!
- 2) Virgin comes from the second pressing of the olives. Slightly higher in oleic acid but still an excellent flavour for table use.

The next extractions are done using heat or are refined. Sometimes, virgin olive oil is blended to improve the taste. "Pure" comes from the third pressing under heat and the oil is good for cooking or frying.

The lowest grades are called "pomace", "olive oil cake" or similar names and are not worth trying.

Keep a small quantity of top grade "extra virgin" on hand for table use. It has a shelf life so don't buy too much at any one time. For cooking, a good quality, refined or heat extracted olive oil is suitable, as there is little point in destroying the nutritional value of extra virgin in the heat of a frying pan! Whatever you do, choose olive oil, even in preference to butter, when cooking with garlic.

Bruschetta Con Aglio

In the March 2004 issue of the Garlic Newsletter, I presented Luciano Pradal's recipe for a true Italian bruschetta. Here is another variation of this Italian staple. The secret is in using the crusty surface of the bread to grate the fresh garlic.

Ingredients:

One loaf Italian bread, 2-3 days old, sliced into one inch thick slices.

One head of fresh garlic

About ½ cup extra virgin olive oil

Sea Salt (optional)

Preparation:

Break garlic into cloves and peel them

Broil or charcoal grill both sides of the sliced bread

While slices are still hot, rub the garlic cloves over the crusty bread, getting garlic over all of it

Drizzle or spread (with a pastry brush) olive oil on slices

If desired, sprinkle with sea salt

Serves 8

Variations:

Sprinkle Parmesan or Romano cheese on slices

Sprinkle oregano, dried parsley or freshly ground black pepper on each slice before serving

Put on sliced tomatoes, peppers, cheese or a topping of your choice before serving

The Garlic Guru's Gourmet Croutons

Croutons are merely stale bread cut into cubes. Right? No, WRONG! While you may buy stale, cubed bread in the supermarket, you can make your own gourmet croutons by following this recipe. It was first unveiled at the Seaway Garlic Festival in September 2004.

Ingredients:

One loaf organic whole wheat or rye bread

One loaf Italian or French white bread

5-6 bulbs fresh garlic

1 ½ cups extra virgin olive oil

Large bunch of fresh parsley

Dried herbs and sea salt to your taste

Method:

Slice bread into ¼" slices, cut into cubes, place on a cookie sheet and slow dry in oven under low heat, <150 deg F until cubes are crisp and dry. Keep heat low. Avoid burning

Break garlic into cloves, peel and crush with a garlic press.

Chop parsley into tiny pieces

Mix olive oil, garlic, parsley, herbs and salt together

When bread cubes are dry, drizzle with olive oil mixture and shake to make sure all cubes are covered

Place back on cookie sheet and put in slow oven to dry some more, turning to make sure that oil mixture soaks in to all cubes. Dry until crisp

When thoroughly dry, serve or store in airtight packages.

Takes about 4-5 hours for preparation. Exquisite taste!

Makes about 30-40 servings.

A PLANNING CHART FOR CALCULATING THE NUMBER OF PLANTS IN A GIVEN PLOT

Plot in Acres	Sq Ft In Plot	Square Ft x Ft	No. of Feet of Row in Plot in Different Spacings				
			36" Row Spacing	Double Forty	Single Rows @ 18" Spacing	3 rows in 36" Bed, 2' Apart	2 rows in 18" Bed 18 Apart
1 Acre	43,560	209 x 209	14,520 ft	16,335 ft	29,040 ft	26,136 ft	29,040
	No of plants @ 6" spacing		29,040	32,670	58,080	52,272	58,080
	No of plants @ 4" spacing		43,560	49,005	87,120	78,408	87,120
½ Acre	21,780	147 x 147	7,260 ft	8,167 ft	14,520 ft	13,068 ft	14,520 ft
	No of plants @ 6" spacing		14,520	16,334	29,040	26,136	29,040
	No of plants @ 4" spacing		21,780	24,501	43,560	39,204	43,560
¼ Acre	10,890	105 x 105	3,630 ft	4,084 ft	7,260 ft	6,534 ft	7,260 ft
	No of plants @ 6" spacing		7,260	8,168	14,520	13,068	14,520
	No of plants @ 4" spacing		10,890	12,252	21,780	19,602	21,780
1/10 Acre	4,356	66 x 66	1,452 ft	1,634 ft	2,904 ft	2,614 ft	2,904 ft
	No of plants @ 6" spacing		2,904	3,267	5,808	5,227	5,808
	No of plants @ 4" spacing		4,356	4,900	8,712	7,841	8,712
1/20 Acre	2,178	46 x 46	726 ft	817 ft	1,452 ft	1,307 ft	1,452 ft
	No of plants @ 6" spacing		1,452	1,633	2,904	2,614	2,904
	No of plants @ 4" spacing		2,178	2,450	4,356	3,920	4,356

Using the Planning Chart:

1. Examine the chart carefully. You can get more or less yield per acre depending on the row spacing arrangement you adopt. You can work either from a fixed size of plot and make decisions on spacing of rows in order to get more or less plants in the plot, or, you work back from the number of plants figures in order to determine the size of plot you will need.
2. Note that rows spaced at 18" give you double the number of plants per acre compared to rows spaced at 36", thus, doubling your crop size.
3. "Double Forty" is a system that uses a raised bed that fits between tractor wheels, and is planted with 2 rows per bed. It is used by those growers who have developed tow-behind cultivating, planting and harvesting equipment.
4. Remember to multiply your plot size by 3 in order to provide for a 3-year organic rotation of your crop.
5. Porcelains are usually planted at 6" spacing, all others at 4" spacing in order to allow for good bulb development.
6. For plot sizes larger than one acre, simply multiply the one-acre figures by the number of acres you wish to plant.
7. For metric measurements, multiply acres by .40468 to get hectares, feet by 30.48 to get centimetres.

CALCULATING THE AMOUNT OF GARLIC NEEDED FOR PLANTING STOCK

The greatest variable when calculating seed garlic is the bulb size. This chart, based on an acre of garlic planted with a 4 cloves/bulb Porcelain type at a density of 29,040 plants/acre shows the seed costs of different bulb sizes.

Grade Size	Bulbs per lb	Cloves needed	Bulbs Needed	No of Lbs	Cost @ \$5.00/lb
Super Colossal	3.5	29,040	7260	2074	\$10,370
Colossal	4	29,040	7260	1815	\$9,075
Super Jumbo	4.5	29,040	7260	1613	\$8,067
Extra Jumbo	6	29,040	7260	1210	\$6,050
Jumbo	9	29,040	7260	807	\$4,033
Giant	11	29,040	7260	660	\$3,300
Large Tube	14	29,040	7260	518	\$2,593

Testing the Garlic Dibble

by: Paul Pospisil, Small-Plot Garlic Variety Trials

Sep Bonner's Sofa Leg Garlic Dibble was used in planting the garlic trials plot this year. (see the Fall 2004 Issue for article on the Dibble).

The Trials Plot is planted in raised beds 50' long, 18" wide with 18" walkways between, planting two parallel rows per bed. Two basic planting densities are used, intensive at 116,000 plants per acre (equivalent) for short strains and normal, at 87,000 plants per acre for taller strains. In-row spacing is 4 plants/foot and 3 plants/foot respectively. Cloves are staggered or offset about 1" from the centre line giving actual plant spacing of 4" and 5".

I built two dibles, one for each spacing density.

The beds had been well worked with compost tilled in a month before planting time. A final roto-tilling just before starting planting ensured the soil was easy to work.

A test run with the dibles produced clean holes with just enough compaction so they didn't fill in before the cloves were dropped in. A very light pressure with the foot pushed it into the soil and with a little practice, the holes were near exactly the required 4" deep.

A 50 foot row took just a few minutes to make the holes and less than 10 minutes to drop in the cloves and cover them with a cultivator hoe.

We started our main planting with the full moon of October 28. Planting was enjoyable and a lot easier using this device than previous years when we made trenches and carefully placed the cloves in the bottom.

Things went well, too well, in fact. On October 30 as we were just half done planting, an all day downpour turned the garden into a sea of mud.

Our soil is a clay loam and you know what wet clay is like. ~~Sticks like bubble gum to the sole of your shoe!~~

We tried lubricating the dibles with vegetable oil from the kitchen. This helped but I still had to use the hose to wash off the sticky clay after every few holes. It was looking as if we'd have to abandon this new device.

Fortunately, Mother Nature relented and we had two nights of hard frost. That was enough to firm up the soil in the raised beds. I was out there in the cold of the morning, dibbling the holes. Again, the dibble worked like a charm. We then planted in the warmer temperatures of midday.

Mary Lou and I agreed that this had been the most pleasant garlic-planting season yet. We finished the 5000 clove plot in five easy sessions of about an hour each, working at a relaxed pace. We estimate that it took less than half the time of our previous method with less bending, less trenching time and uniformly spaced cloves.

The garlic dibble proved to be a very useful tool for use in a small garlic plot like ours. It saves time and backs. Cloves dropped straight. We'll see at harvest time whether any went in upside down!

The one disadvantage is that wet soil makes it difficult to have clean planting holes.

If you don't already have a dibble, I recommend making one this winter to have it ready for fall.

Aide-memoire: Mechanized Garlic Production

Garlic, especially the hardneck variety, is a fragile crop. The bulbs and the seed cloves are both easily damaged by rough handling, resulting in decay.

Exercise caution. Don't rush out to buy farm equipment without considering the risks to quality from poor machines.

Growers looking to mechanize for increased production should follow this simple rule of thumb:

"Machines for the soil, your hands for the bulbs."

These Tasks Are Suitable for Mechanization.

Soil preparation: cultivation, tilling, fallowing, weed destruction, compost & compost application, growing green manures, adding organic soil conditioners.

Planting: making raised beds, making trenches or holes for planting, covering over planted beds.

Mulching: aerating and spreading straw.

Irrigation: laying hoses, applying water.

Harvest: undercutting of roots (proper cutter needed)

Curing: air flow and temperature control.

Tasks Best Done Manually

Planting: cracking bulbs into cloves, inspection of seed, sorting and separation, laying out of rows, transport to planting area, planting cloves (also see below).

Winter inspection: any remedial action needed.

Spring care: inspection, pulling back of mulch.

Growing period: regular inspection (ideally daily, no less than twice weekly), hand-pulling weeds that emerge through mulch, destroying insects (leek moth regions) or

~~insect control (other areas), foliar or added fertilization if needed.~~

Scaping: in order to harvest crop of scapes for market.

Harvest: inspection & determination of maturity, lifting of plants, transport, cleaning, washing and inspection, cutting of roots, grading by size, transport to curing facility.

Curing: regular inspection and control.

Market Preparation: Removal from curing facility, transport, removal of tops, grading and separation, packaging (never in onion bags, boxes preferred!), braiding or otherwise packaging for market.

Tasks Mechanizable With the Proper Equipment

Planting: The time saving of these is rather minor compared to other high labour costs, especially those at harvest time.

If you use a planter, get one that won't damage the cloves and also adjusts for different clove sizes.

Undercutting: Raised beds using the double 40 system enable undercutting with a blade attached to the tractor drawbar. It loosens the soil enabling easier lifting of plants.

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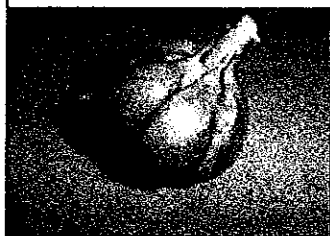
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Is it really organic? When you find a food labelled
"organic" in the supermarket and check its origin –
Mexico, Argentina, China or Chile – you wonder whether
the diesel fumes spewed into the air by the ships and trucks
travelling thousands of kilometres to bring it here caused
major environmental harm. It would seem that labelling
food brought this way is a misuse of the term "organic".
Organic is synonymous with local, not imported.