



Greenmoore Gardens CSA Handbook

Welcome!

For those of you returning this year, much thanks, and hoping for another bountiful season! For new members, we are very grateful for your support this year, and hope you enjoy the journey through the seasons!

This collection of information was made specifically for Greenmoore Gardens CSA Members. This is your go-to for answering many questions you may have when it comes to being a member of our farm.

The first few pages are full of frequently asked questions. Refer to this anytime you have a question you need to ask us. You'll probably find the answer there. If not, please don't hesitate to ask us by email or phone!

Next you'll find information on what it means to join a CSA and to eat seasonally and locally. You will find information on how we garden and what challenges we face in order to bring fresh healthful produce to your kitchen.

There is a section of the handbook devoted to information and tips on proper storage of your vegetables. This is an important section to read and refer to in order to get the most out of your vegetables. Please make sure to read this section and let us know if you have any other questions!

We've also put together a resource list to allow you to find more books and websites for loads more information on all things related to farming, food, and cooking.

AND we've put together a Veggie Index. It is an exhaustive collection of information and recipes for all the vegetables we grow. There's loads on how we grow vegetables, cooking and storage tips, and of course recipes. There's over 200 pages of information! We have posted it online, and this year we're offering free access to it for the public. We believe that having this information will be of great value in learning about seasonal produce, storing it, and cooking it. It is highly recommended that you purchase access to it. If you would like a printed version we can print copies for an extra fee to cover the cost of printing. Let us know!

About Greenmoore Gardens

Community Supported Agriculture

Community Supported Agriculture is a world-wide phenomenon which has taken hold in response to a large gap that has formed between the people who eat food, and the farms, soil, and people who grow it. The CSA model allows for the farmer to get the capital needed to pay for heavy up-front costs through membership dues. And it calls for the community to share in the bounties and the risks involved with the inherently uncertain endeavor of growing food.

This connection---formed between eaters and farmers---is what closes the dark area that has been growing between our kitchens, and the realities of: what it takes to grow, harvest, clean, and pack vegetables; seasonality; local climatic conditions; regional pest and disease issues; and the unique challenges that any farm faces in these times of rising labor, feed, and fuel costs. In running a CSA, and in joining one, an effort is made to teach and to learn about these things, thus adding meaning to the food on our plates every day.

Who are we?

Many people have contributed to making Greenmoore Gardens what it is today. The farm was started by Mark Maloney about 5 years ago and ever since it has been growing steadily from 10 members in 2007 to 126 members in 2010! In 2009 Sunil Patel started managing the CSA. He has been working on different farms for over 6 years. Many people in the office, interns, and worktraders have helped make the gardens what they are today.

Why are we doing this?

We are proud to be part of a greater world-wide movement to bring a fresh, naturally grown, and secure food source back to the people. We hope that through this connection we can spread knowledge and insight (and vegetables!) to our members about what it means to farm and eat responsibly.

Eating Local and in Season

Locality of Food

The benefits of eating local food are great. You support a local business and by extension, the greater community. Knowing where exactly your food is coming from allows for you to feel secure in the fact that it is being grown responsibly, is as fresh a product as possible, and is not trucked half way around the world to get to you. Eating local connects your diet to the soil under your feet and the people who work that soil to grow it. Just by joining a CSA and supporting local agriculture, you are making huge strides in restoring local food security in the face of a weakening global food system that is filled with food safety issues, over-processing, and an unhealthy focus on production and growth rather than quality and responsibility.

Seasonality of food

The changing of the seasons is always exciting on the farm. It usually means a whole new set of crops will be arriving in our kitchens!

Eating locally by extension means eating seasonally. This may be new to many of us. It requires a genuine willingness to learn about vegetables, and how they are grown to gain a true appreciation of the fact that for example, fresh tomatoes are something that one might just not eat in the winter time.

The following is a general description of the progression of our growing season to get you acquainted with how things generally progress. There are many details that are not covered here, but it should give you a good starting point to start to understand the flow of the season.

In February and March we start seeds for things like onions, leeks, greens, and lettuces in our propagation greenhouse. In March and April, when the soil dries adequately, we have planted crops like snap peas, greens, carrots, beets, and radishes outside, and have transplanted crops like kale, chard, broccoli, cabbage and onions. All of these can tolerate light frosts and will keep growing, albeit quite slowly until the days start to get longer and warmer in May. By mid-May we are harvesting the early greens and radishes we started planting in March. Now the danger of frost is over so we can plant the summer crops like beans, tomatoes, peppers, eggplant, potatoes, cucumbers, melons, and squash. The cucumbers and squash will start to bear fruit sometime between the end of June and mid-July. The tomatoes, peppers, melons, and eggplant should start to bear in late July and early August. While planting summer crops outside, we start fall and winter crops inside to be harvested from September through November. These include broccoli, cabbage, cauliflower, brussels sprouts, and fall lettuces and greens. Outside we plant winter roots like celeriac, parsnip, rutabaga, and turnips, and we continue planting crops like carrots and beets. By mid-summer we are digging potatoes, harvesting tomatoes, beans, cucumbers, and summer squash almost every day trying to keep up with maturing and ripening (which can be very difficult when the hot weather speeds growth to the extreme!). By mid-September

everything that should be planted, has been planted, and we just keep them growing to harvest in October and November.

Most vegetables do their best in certain times of the season so we time our crops based on seasonal weather patterns and the crops' growing requirements. For example you would rarely, if ever, see spinach in the middle of summer here. It would get heat stress and prematurely "bolt." Bolting means the plant is sending up a flower stalk and getting ready to produce seeds. This means the leafy parts (the parts we eat) of the spinach would lose nutritional quality and tenderness. So we grow it in the early spring and late fall through winter. Tomatoes on the other hand, cannot stand cold temperature, so they cannot be planted until after the last frost of the spring. They grow from then until the first frost of the fall when they die. Because of this, we start tomato plants as early as March in the greenhouse to maximize the small window of warm weather we have. Of course frosts cannot be predicted with 100% accuracy so there is a good deal of improvisation in the way we time planting and sowing.

You will find that the qualities of individual vegetables will vary through the season. For example, greens, carrots, and broccoli will develop more bitter flavors in hot weather, and actually become sweeter with cold frosty weather. The first fruit and the last fruit on a tomato plant will usually be less than ideal with cracks, scars, and blemishes, the fruit in between will be of more consistent quality and taste. As insect and disease pressures build during a plant's life cycle, the harvest is diminished in quality and volume. It's very important to think about these things as you see and taste your vegetables.

Good Times, Bad Times:

With the onset of mass-production of food crops and the ability to transport them thousands of miles away, our awareness of the inherent risk in growing a crop has been diminished greatly. When you start eating local, you find that year to year and season to season, the "success" of a crop varies greatly. Certain diseases, weeds, and insect problems are amplified or suppressed by certain weather conditions and regional patterns. These factors where the control is out of our hands, can make or break a crop. The farmer could have done everything right: planted on time, weeded on time, fertilized on time, etc., but the crop could still fail or be of lesser quality than it could have been. This is something that has been lost upon us in recent years. When an apple crop fails in Washington, get apples from Chile!

The good times and the bad times hold many opportunities. In the good times, you have a bountiful, tasty product. Too much to consume quick enough! So the opportunity is there to freeze, can, or otherwise store the surplus. This allows you to extend the bounty into the winter months. In the bad times, you have a less than ideal crop in terms of appearance, flavor, and volume. This gives you the opportunity bitter flavors. So making soups, stews, and casseroles out of the less than ideal harvest may be the best way to use them. And sometimes, we just have to accept that we won't be getting this or that item this year due to crop failure.

This is all part of learning to eat locally. And understanding what the factors were that caused the blossom end rot on the peppers, or the luxurious heads of broccoli. When a late frost comes in early June, we should all be thinking, “Oh I hope the tomato plants are covered!”

Growing food the natural way

We grow with the health of the soil, the plants, the eaters, and the greater ecosystem in mind, and thus have a chemical free growing environment. Growing food naturally means many things to the farmer and to the consumer.

Soil

For the farmer, optimizing soil health and vigor is of prime importance. This means constantly replenishing the soil with compost and soil amendments. Over the last few years, we have been amending our soil with rotted cow and horse manure, but mostly leaf compost. We've been able to get the township leaf collectors to drop the leaves off at the farm instead of driving all the way to the borough composting facility, and we compost them ourselves on site. We get rotted manure from a neighboring farm who raise cattle and horses. We also use soil amendments like limestone (pH balancer and calcium source), rock phosphate (long term phosphorus source), greensand (trace mineral and potassium source), and feather meal (quick acting nitrogen source). We feed plants fish emulsion when they need a quick boost. Having and maintaining a vibrant, balanced soil is probably the number one thing that a farmer can do to ensure minimal insect and disease pressures, for it is sickly plants that attract pests and disease. Pests and disease are nature's way of cleaning up or "culling" the sick and weak in the plant world.

Also of importance is crop rotation and cover cropping. We grow over 50 different types of vegetables. Rotating them around the farm is the best way to minimize buildup of fungal, bacterial and viral diseases, and insect pressure. We are still young, but hope to develop a fine tuned rotation that would span 5 years. For example, the ground that grows potatoes this year would not see potatoes again for another 5 years. This makes for a very complex planning process. Cover cropping is the act of growing a crop not for human consumption, but for "soil consumption." We grow grasses and legumes which create a lot of biomass. It is allowed to grow and is turned under to act as a "green manure" giving the life in the soil food to digest. This digestion creates humus, the substance that all farmers hold in great, great esteem.

Eating food grown on a healthy soil is vastly different from eating food from a degraded soil. Biological activity is high, thus allowing for minerals and nutrients to be changed into forms that are easily taken up by plants. This makes the food more nutritionally valuable pound for pound than that of a degraded soil.

Insects, Mammals and Disease

Aside from all long term cultural practices that enliven and maintain soil structure and health for sustainability, we do need short term defenses against immediate threats to the well-being of the plants.

For the voracious flea beetles that eat cabbage family plants (look for tiny holes in your greens) to death or near death, we use physical barriers first and foremost. This barrier is in the form of a fabric cloth (so to speak) that lets light, air, and water through, but blocks the bugs. It isn't 100% protection, but without it, we would lose the majority of our cabbage family crops. We also spray with pyrethrins. This is a botanical insecticide derived from the chrysanthemum plant. It doesn't persist in nature as do many chemicals, so in high flea beetle season, we have to spray quite often. For the cabbage looper (look for large roundish holes in cabbage) we spray Bt. This is actually a bacterium which infects them and kills them. It is impossible to eradicate them though, so you will find little green worms on your cabbages, broccoli, and cauliflower (see veggie index for more on this). Cucumber beetles and Squash bugs became a big problem in 2010. They transmit a couple different diseases to cucurbits (cucumbers, squash, zucchini, melon). These diseases will kill a plant within a couple weeks. Other farmers around here also said it was an especially bad year for cucumber beetles and squash bugs (relatives of the stink bug whose population grew to epidemic proportions last year). There just seems to be no practical defense against them. This year, we'll try growing them in our new high tunnel and putting insect netting on all the openings of it.

With the early onset of late blight in 2009, we have been spraying copper sulfate on the plants when they are going through prolonged moist conditions. This is used as a fungus preventer. Once these fungi establish themselves, they are very difficult to eradicate using natural substances. Powdery mildew is a fungus which affects squash and cucumbers sometimes to the point of death. We get around this by making multiple plantings through the season to try to keep ahead of the disease.

We keep deer out of the garden with a simple electric fence. It has served us well over the last two years. Groundhogs are not deterred by the fence, and so we have to trap them. For the rabbits, voles, and mice, we must learn to accept the fact that we have to share some of our crop with them.

Eating food grown without chemicals means food with greater evidence of insects and insect damage. You will probably find bugs in your share more than once. For info on how to make sure you're not eating them, (although they're healthier to eat than insecticide is!) see individual veggie descriptions.

The Basics of Storing Vegetables

When you receive your vegetables, you'll find that they will have been picked the day or the day before you get them. We pick them early in the morning and wash, clean, and pack them for you. We pack most of the vegetables loose in your box. **You will have to use a few storage techniques to ensure your veggies stay fresh.** First let's go over the basic physics of what happens when vegetables are picked. The two main factors involved are moisture and temperature.

Moisture

Plants can be thought of as fountains. They take water from the ground through their roots and actually shoot it out in the form of vapor from tiny pores in their leaves. This process continues even after they are picked. In the case of leafy greens you can see this process happening right before your eyes in the form of wilting. In root crops, you will see them start to shrivel and dry up. Many fruit like tomatoes, peppers, and eggplant have more water-tight skins, so they do not succumb to moisture loss as quickly after being picked.

Moisture is one of the main things we have to control in order to keep vegetables fresh for longer. If you were to keep your lettuce in an open bowl in the refrigerator (a very dry environment), the leaves would wilt to an unappetizing level in a matter of minutes. If you keep the lettuce in a bag in the refrigerator, you are controlling moisture loss and prolonging freshness.

Maintaining moisture is very important, but having too much moisture can accelerate rot. If your vegetables are wet and in a puddle at the bottom of a plastic bag, they would turn to black mush very quickly. We spin your greens after washing them, but water will still be clinging to them. For longest storage time, of any vegetable, excess moisture needs to be controlled.

Temperature

Plant cells break down at higher rates as temperature rises. Lowering the temperature of the plant cells, will slow this process down considerably. When we pick vegetables, we dunk them in cold water. This is called hydro-cooling and allows us to bring the temperature of them down to around 50 degrees instantly. This way, your greens are usually not wilting when you get them 6-8 hours after picking (some greens wilt faster than others. If you have wilted greens in your box, best to soak them in cold water to perk them up before using). Temperature as we all know is key in keeping vegetables fresh.

Now that you have the basic mechanisms of vegetable deterioration under your belt, we can talk about storage needs of different vegetable types.

Short Term Storage Guidelines

The following information is important in learning how to store your vegetables from 2 to 7 days at a time.

Greens

Most of your greens will be packed loose in your box. They will need to go in plastic if you want to keep them from wilting for a period of time. Feel free to chop bunches of kale and chard in half to help them fit in a bag so you can close it. Your greens may still be moist from being washed. Patting them dry may be a good idea if you want them to last more than a couple days. We run salad mixes and other small leafy greens through a salad spinner to get most of the moisture off, but you may find they still need a pat dry. You can also stuff greens bags with paper towels to absorb any excess moisture. If you do keep a little excess water in your bag, they will last for at least a couple days in a cold refrigerator without much sign of rot.



Roots

Many times we bunch roots with their tops (green leafy parts) on. The greens will pull moisture from the roots slowly, so you will want to chop any greens off of roots when you get them, and bag them separately. Roots will dry very quickly in the refrigerator, so they should be bagged if you are putting them in there for more than a couple days. You can also just leave roots like beets, turnips, carrots, and rutabaga out in a moist cool place to store long term.

Fruit

Tomatoes, peppers, eggplant, and the like all have relatively water-tight skins. They can sit out in the open for quite a long time before showing signs of shriveling. Being warm weather crops, their flavor is actually diminished by refrigerator temperatures. The best thing to do is to keep the ones you'll eat in the next day or two out on your counter, and the rest in the fridge. If your tomatoes are ripening too fast on you, the best thing to do is freeze them whole or make sauce with them. Over-ripe tomatoes are cooking tomatoes. Over-ripening happens locally on the fruit and spreads. Often times, you will find that cutting over-ripe parts will leave you with a fruit that is still of good eating quality.



Beans, peas, cucumbers, zucchini, and the like have more water-permeable skin, and thus should be put in plastic or saran wrap if you want to store them for more than a few days in your fridge. Make sure they are completely dry before storing them in plastic as they succumb to rot very quickly this way.

Long term Storage Guidelines

If you are overwhelmed with produce and cannot cook and eat it before it goes bad, the best thing to do is store it long term. There are few different methods that you can use. Look at our book list for great books about preserving food. There's nothing like having home-grown tomato sauce in the middle of winter from your pantry!

These days, freezing seems to be the simplest way to store vegetables long-term. Here's a couple freezing techniques for you.

The Freeze

Some vegetables take well to freezing whole or processed in some way. The following are good candidates for this (not an exhaustive list): tomatoes and peppers. Tomatoes and peppers can be frozen whole by chopping, pureeing, or just keeping them whole in a freezer bag or container. Keep in mind that once you do this, the only way to use them is to cook with them. They will no longer be like the raw version.

When you put whole frozen tomatoes in a hot pan or soup, it will break down without the need for chopping. The skin can be tough, and so it's best to dunk frozen tomatoes in boiling water for a few seconds until the skin peels back. Slip the skin off and use that way. Peppers are probably best chopped coarsely or run through a food processor and frozen in freezer bags. It's as easy as putting them in the freezer and can be a godsend in times of high CSA anxiety.



The Blanch and Freeze

This method works for the following (not an exhaustive list): greens, beans, peas, cauliflower, and broccoli.

Blanching is the process of flash heating vegetables and then cooling them down very quickly. To blanch and freeze just take these simple steps:

1. Get a large pot of salted water to a boil, and fill a bowl with ice water.
 2. Chop greens coarsely, chop broccoli, cauliflower into floret sizes.
 3. Put vegetables in boiling water. Wait until they develop a bright green color or let them boil for up to 2 minutes. Greens will come out very quickly, and beans will take a little longer.
 4. Take the vegetables out and dunk them in the ice water until cold.
 5. Drain them, put them in freezer bags or containers and freeze.
- To use, thaw at room temperature, or on low heat on the stove.

The Roast and Freeze

This method works best for the following (not an exhaustive list): eggplant, root vegetables, peppers, and tomatoes.



Roasting vegetables before freezing will add a nice depth of flavor, and lends itself to a few different dishes that call for roasting. To roast and freeze follow these steps (more info in individual veggie descriptions):

1. Roast vegetables and let cool
2. Process by chopping, pureeing, or slicing
3. Place in freezer bags or containers and freeze.

The Can

Canning is the traditional method of processing vegetables and fruit, and sealing them in glass jars by immersing them in a hot water bath. There is a science to this process which is too involved to be explained here. A strict attention to certain variables needs to be in place in order for it to be safe for consumption. Please look at our book list for titles on the subject.

The Pickle

Pickling is a very old method of preserving food and goes back to the time when the coldest you could get anything for long term storage is around 50 degrees (underground cellars). At this temperature, lacto-bacilic bacteria thrive creating an acidic environment where pathogens cannot survive. Usually salt is used as a primary measure of controlling pathogens. Fermented products are "live" foods and thus have many probiotic benefits. Check out our book list for more info on the subject.

Cookbooks and other books...

Asparagus to Zucchini: A Guide to Farm-Fresh Seasonal Produce, Madison Area CSA Coalition

Farmer John's Cookbook – The Real Dirt On Vegetables, Farmer John & Angelic Organics

The Earthbound Cook: 250 Recipes for Delicious Food and a Healthy Planet, Myra Goodman

Food To Live By, Myra Goodman

Earth to Table : Seasonal Recipes from an Organic Farm, Jeff Crump, Bettina Schormann, Edward Pond Photographer

The Organic Cook's Bible, Jeff Cox

Melissa's Everyday Cooking with Organic Produce: A Guide to Easy-to-Make Dishes with Fresh Organic Fruits and Vegetables, Cathy Thomas

Simply Organic: A Cookbook for Sustainable, Seasonal, and Local Ingredients, Jesse Ziff Cool



Wild Fermentation: The Flavor, Nutrition, and Craft of Live-Culture Foods, Sandor Katz

On Food and Cooking, Harold MacGee

Outstanding in the Field, a farm to table cookbook, Jim Denevan

Nourishing Traditions, Sally Fallon

Nutrition and Physical Degeneration, Weston A Price

Holy Cows and Hog Heaven: The Food Buyer's Guide To Farm Friendly Food, Joel Salatin

Omnivore's Dilemma, Michael Pollan

The Botany of Desire, Michael Pollan

Canning & Preserving...

The Natural Canning Resource Book: A guide to home canning with locally grown, sustainably-produced and fair trade foods, Lisa Rayner

Preserving Food without Freezing or Canning: Traditional Techniques Using Salt, Oil, Sugar, Alcohol, Vinegar, Drying, Cold Storage, and Lactic Fermentation, The Gardeners and Farmers of Centre, Terre Vivante and Deborah Madison

Ball Complete Book of Home Preserving, Judy Kingry

Preserving Summer's Bounty: A Quick And Easy Guide To Freezing, Canning, and Preserving, and Drying What You Grow, Rodale Food Center

The Farmer's Wife Canning and Preserving Cookbook: Over 250 Blue-Ribbon recipe!, Lela Nargi

The Complete Book of Small-Batch Preserving: Over 300 Recipes to Use Year-Round, Ellie Topp

Helpful Websites...

National Sustainable Agriculture Information Services - ATTRA, <http://attra.ncat.org/>

Cornucopia Institute, <http://www.cornucopia.org/>

Rodale Institute, <http://www.rodaleinstitute.org/>

PASA, Pennsylvania Association for Sustainable Agriculture, <http://www.pasafarming.org/>

Buy Fresh, Buy Local, <http://www.buylocalpa.org/>

Weston A Price Foundation, <http://www.westonaprice.org/>

Flea Beetle



Drawing by Andrew Schabie
Corky's Pest Control

