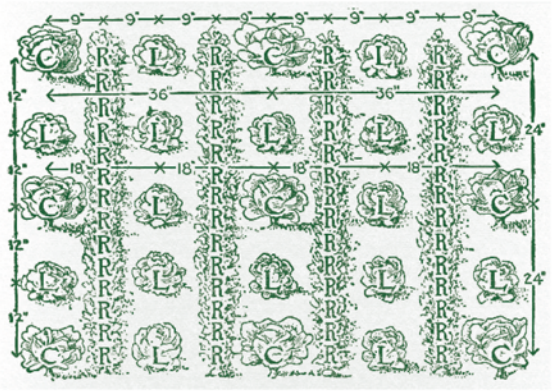
Don't judge each day by the harvest you reap but by the seeds that you plant.

Robert Louis Stevenson

PLANNING A GARDEN

How to start seeds
New Jersey planting chart
Planning a harvest



Prepared for

Seed Bank of
Burlington County

Planning a garden

The information in this guide will help you plan what and when to plant in your garden. It includes some basic tips you'll need to start growing seeds, a planting chart that will give you the months that you can plant and directly sow seeds in your garden, and information on how to plan for planning a harvest.

If your just starting out, keep it small and simple. Rest assured, as your skill level increases, so will your garden. Gardening is a real time commitment; and if you have an active lifestyle, it's important to keep this in mind and plan your garden accordingly. Let the planning begin!

Sunlight

If you're new to gardening, keep in mind you and your garden needs full sun, or at least eight hours a day for most vegetables. Leafy greens and root vegetables can withstand some shade, especially if it's late afternoon. The minimum for these varieties are five hours of direct sun. Consider the arc of the sun also. Watch how it crosses the sky. Ideally, you want the arc of the sun's path directly over your garden, or as close to it as you can. If the sun is lower on the horizon, that's fine as long as there's eight hours of it.

Soil history

Soil history is another important consideration. If you don't know what was applied to the soil before it came into your possession, you'll be growing your food in soil that might have been compromised by chemicals. Just because something is growing on the top layer of the soil, that's not a good indication of what may be 2" or 3" inches below. Your plants will grow deeper in the soil, and if the soil has been compromised, then this could end up in your vegetables. If you don't know the history of the soil you want to plant in, then using fresh soil in a raised bed, growing box or containers is the way to go.

Drainage, raised beds and containers

Good drainage is important. You don't want to put your garden in a low area on your property. While a steady supply of water is needed, puddling and stagnant water is not. Molds and blights thrive in damp conditions, and are not good for plants.

Drainage, raised beds and containers, continued

Raised beds, grow boxes and containers provide good options for any drainage concerns. Raised beds are simple structures that sit on top of the existing soil. Ideally, you want a structure that is 12" deep for maximum growing depth, and will be deep enough to keep the roots from penetrating the soil below the box. Eight inches of depth is the minimum that you should consider. Since these options sit above the ground, they will be above any puddles that form from a big rainstorm. For grow boxes and containers, make sure you have drainage holes at the bottom.

Another advantage of raised beds, boxes or containers is they allow you to decide if you want 100% organic soil. LSB recommends that you use organic materials whenever possible. This option also allows you to build the soil with your own compost or composted manure.

About seeds

At the Library Seed Bank (LSB), naturally, we encourage you to start your own seeds. Seeds are amazing, and that little tomato seed will grow into a large plant, produce an abundance of fruit for you, and provide you with enough seeds in one season to last almost a decade. That's not all. As you work with seeds, you become a seed steward, especially if you work with the seed library at your local library.

LSB only stocks open pollinated seeds, which are seeds that produce plants that are true to the seed they are grown from. Heirloom seeds fall into this category, along with new varieties that are bred to have the characteristics of heirloom plants. The open pollinated plant line is stabilized with any irregularity grown out, and the genes of these plants are diverse from collecting them over a number of years. This protects crops from failure due to gene standardization with hybrids. If only one variety of hybrid is planted, and all the genes are standardized, if disease shows up that standardized genes can't resist, you have a crop failure. Open pollinated seeds are the seeds to save.

Hybrid seeds on the other hand can not be saved. Hybrids are the result of cross breeding between two varieties of the same plant. Generally, the seeds from the the fruit of a hybrid will not produce the same fruit it came from. It's important to note that hybrids are not genetically modified. You can grow hybrids without that concern, you just can't collect the seeds.

About seeds, continued

Seeds that you save from your garden adapt to your local growing conditions, which make for stronger seeds. When you save seeds, you're in control of what you grow. You know the history of how they were grown, and they have the potential to become family heirlooms by passing the seeds and the knowledge about them down to future generations. Let the seeds you save tell a story about you, and share a taste across your future generations.

Starting seeds

To start, seeds need humidity and a warm temperature to germinate. Some seeds need direct light, and they are placed on top of the soil. Once the seeds sprout they need strong light. You can use sunlight or artificial light. If you use sunlight, they will need eight hours of direct sunlight. If you have a sunny room that you know gets this amount of light, then use it. If not, artificial light is needed. There are grow lights, or fluorescent lighting fixtures such as shop lights, which work well. Once you decide where you want to grow your seeds, you can find a light fixture that works.

LSB uses 4 ft. long shop lights on 4 ft. shelves with sunlight balanced fluorescent bulbs, and a timer that gives the seedlings sixteen hours of light. Keep the lights 2" to 4" above the plants as they grow. Use a chain yo raise the lights as the seedlings grow as needed.

Since soil temperature is also critical, there are warming mats that slightly warm the seed trays placed on top of them. This gives a big boost to germination. If a mat is not possible, find a place that has a warm surface that the seedlings can be placed on. For example, an area by a radiator or heating vent. Keep in mind the combination of the light needed also. A small up-front investment will take care of your seed starting needs for as long as you garden.

Use the chart on page 7 to figure out when to start your seeds. Do not start your seeds too early. This increases the stress on the plants. Generally, six-to-eight weeks before you plant is when to start your seeds. Peppers however can take eight to ten weeks to germinate.

Seed diameter

It's also important to keep in mind the diameter of the seeds. For example, melons, squash, cucumbers, and pumpkins have larger seeds so it's best to plant these in individual pots that you can plant into the ground. A rule of thumb is, the container should be twice the size of the seed. Smaller seeds can be planted in a tray, and thinned out once the seeds sprout.

Starting seeds, continued

Seed starting mediums

Seeds need loose and porous soil to germinate. Seed starting mixes are available at most gardening centers, and LSB suggests that you use organic materials whenever possible. Stay away from any bargain brands if your budget allows. You want to give your seeds the best start you can. You can even create you own mix, if you like.

- Potting soil and pots. There are seed starting pots made out of a variety of natural materials that you plant directly into the ground. These materials include peat moss, coco fiber and composted cow manure. You can also use plastic plug trays. Seed starting mixture is what you want to use, not potting soil. The seed soil mixtures are created to be lighter and more porous than potting soil. You can create your own if you like, but to start LSB suggests using a mix.

  Once you decide what pots you will use, fill your container with the potting mix, leaving some room at the top for watering. A filled container will force the water to runoff.

- Peat pods. Peat pods are compressed discs of peat moss and fit into a tray designed specifically for their use. They are pre-measured and when water is added, they inflate to full size. No measuring and no mixing needed for this option. They are readily available.

- Spun rock. This is a soil-less option. It's a material used in hydroponics. It comes in a sheet with a tray and dome lid. LSB has used this and it works fine. The rock material does not compost into the ground when planted.

Do some research about what is available to you and find what works for you.

Here are a few more tips for you.

- You want the material to be wet but not soaked. After adding water, press down to remove air.

- Place a couple of seeds in the middle, then, cover with a small layer of soil. (For the seeds that need light to germinate, you don't have to do this.)

- If using the peat pods, press the seed down with a slight amount of pressure, and cover with some of the soil from the pod.

Seed starting mediums, continued

- Once you cover the seeds, gently moisten the soil.
- If you're using the spun rock without soil, there will be a hole to place the seed into. The hole is deep enough to keep the seed in darkness. There is nothing else you need to do.

Cover the plants with plastic to encourage humidity, and place them in your chosen germination area. Once the seeds begin to sprout, remove the plastic. Again, keep the soil damp but not soaked. If you are using individual containers, allow enough room between them for air circulation. If the area is in an enclosed space like a closet, a fan might be needed for circulation. This will help deter any mold from forming.

Thinning out

Once the second set of leaves on the seedlings form, it's time to thin them out. Use a pair of small scissors and cut the smaller plants. Do not pull them out. Pulling has the potential to pull out all the seedlings, or disturb the young roots. At this stage you now can start fertilizing. Do so once a week with a weak solution of liquid fish or seaweed fertilizer which are readily available at garden centers. Dilute the fertilizer portion in the instructions by half.

Hardening off

Hardening off the plants is how you get the the plants used to growing outside by gradually exposing them to the elements. This is essential. Please don't skip this, or rush it. At LSB, we do a nine day process by placing the seedlings outside in three day increments. The time spent outside increases with each increment. The first increment is three days for four hours, the second increment is three days for eight hours, and with the final increment, the seedlings stay out overnight. Choose a place that gets sun, and if possible, is sheltered. Some leaves might turn brown from the transition from fluorescent light to sunlight. That's fine. Also, cut back on any watering and fertilizing when doing this.

After the seedlings have been hardened off, they are ready to transfer to the ground, raised box or whatever garden option you chose. With that, you now have what you want in your garden, you have trusted sources for the seeds and potting material, and you've helped keep secure biodiversity by your noble effort.

Sources for seeds, plants, trees, advocacy

Here are resources for heirloom varieties of seeds, plants, trees, and advocacy. The list is in no particular order, is not comprehensive and is not an endorsement of one over any other.

Please take a look around and see which of these links feel right for you.

Seed Savers Exchange — extensive seed selection, potatoes and garlic

Hudson Seed Company — formally the Hudson Valley Seed Library. Great people, their own seed farm and fine art

Organic Seed Alliance — organic seed development and education

Baker Creek Heirloom Seeds — comprehensive resource for heirloom gardening

Tomatofest — strictly heirloom tomatoes

D. Landreth Seed Company — oldest seed house in America

Fedco Co-op Garden Supplies — co-op seed house, potatoes here

Victory Seeds — tobacco included here

Heritage Harvest Seed — specializes in very old heirlooms

Terrior Seeds — seeds, gardener referral program, seed collections with related books

Sand Hill Preservation Center — they have rare poultry also

Trees of Antiquity — specializing in heirloom fruit and nut trees

Seeds of Italy — specializing in Italian heirlooms

Cross Country Nurseries — they have a wide selection of plants not seeds

High Mowing Organic Seeds — flowers, vegetables, herbs, cover crops

Pinetree Garden Seeds — flowers, herbs, fungi and mushroom kits and plugs

Maine Potato Lady — organic potatoes and garlic

Kitazawa Seed Company — specializing in Asian varieties since 1917

Bountiful Gardens — a resource for seeds, trees, books, mushrooms, tools, etc.

New Jersey planting chart*

This chart informs you about what's typically is planted in New Jersey, and the best months to plant it. This will help you plan your garden. Some varieties are planted in the spring only, some in the spring and summer for a fall harvest, and a couple that are perennials, which get planted once. With a little planning, you can extend your harvest . How to do this is covered on page 9.

Vegetable	Type	Planting Month
Asparagus	crowns	Perennial
Beans, Lima, bush	seeds	May, June, July
Beans, Lima, pole	seeds	May, June, July
Beans, Snap, bush	seeds	May, June, July
Beans, snap, pole	seeds	May, June, July
Beets	seeds	April, May, June, July
Broccoli	transplant	April, May, June, July
Brussels Sprouts	transplant	July
Cabbage	transplant	April, July
Cabbage, Chinese	seeds or transplant	April, July
Carrots	seeds	April, May, June, July
Cauliflower	transplant	July
Celery	transplant	May, June
Chard, Swiss	seeds	April, May, June, July, August
Collards	seeds	April, May, June, July
Corn, Sweet	seeds	May, June,
Cucumbers	seeds or transplant	June, July
Eggplant	transplant	May, June
Endive	seeds or transplant	April, May, June, July, August
Kale	seeds	July, August

*Source: Rutgers Cooperative Research & Extension, FS 129, *Planning a Vegetable Garden*

New Jersey planting chart*, continued

Vegetable	Type	Planting Month
Kohlrabi	seeds or transplant	April, May, June, July, August
Leeks	transplants	April, May, August
Lettuce, Leaf, Romaine	seeds or transplant	April, May, August, September
Lettuce, Bibb	seeds or transplant	April, May, August, September
Muskmelons	seeds or transplant	June
Mustard Greens	seeds	August
Okra	seeds	May, June
Onions, dry	seeds or transplant, sets	April
Parsley	seeds	April, May, June
Parsnips	seeds	April
Peas	seeds	March, April
Peppers	transplant	June
Pumpkins	seeds	June
Radishes	seeds	April, May, June, July, August, September
Rhubarb	crowns	Perennial
Rutabagas	seeds	April, July
Spinach	seeds	April, September
Squash, bush	seeds or transplant	June, July
Squash, vine	seeds or transplant	June
Sweet Potatoes	transplants	June
Tomatoes	transplants	May, June
Turnips	seeds	April, July
Watermelons	seeds	June
White Potatoes	tubers	April

*Source: Rutgers Cooperative Research & Extension, FS 129, *Planning a Vegetable Garden*

Planning a harvest

A two season harvest

When you plan your garden, keep this planting chart in this document and the option of a two season harvest in mind. If you plant some early varieties of tomatoes, they should be finished in time for another planting in August. If you do a spring section of your garden, you will have the section available for the fall also.

A three season harvest

Another benefit of saving your own seeds, or acquiring organic, open-pollinated ones, is you can ensure a three season harvest. If you study the charts on pages _ and _, you'll see some varieties of vegetables can be planted in the spring and late summer. Spring planting will give you a spring harvest while late summer planting will give you a fall harvest. Fruiting vegetables such as tomatoes, peppers, eggplants and squashes, for example, are planted in spring and give you a summer harvest. This is a three season harvest. In addition, if you plant pumpkins and sweet potatoes in June, they will be ready in the fall also.

Expanding your harvest

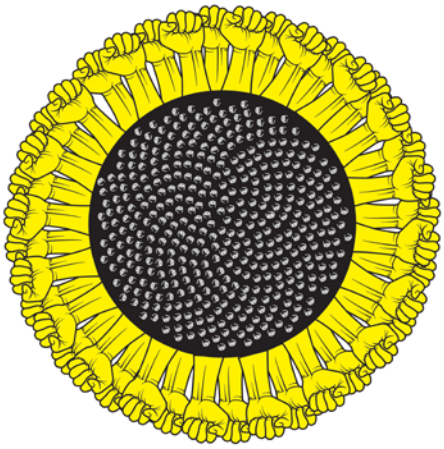
Another method of expanding your harvest, and maximizing the harvest per square foot is succession planting. With this method, you plant seeds in weekly succession. For example, if you're planting peas, plant one row the first week, a second row the second week, and a third row the third week, When harvest time comes, you will be harvesting peas for three weeks or more instead of what you would harvest had you planted the peas all at once. This works for radishes, beets, corn and beans.

There's also the method of finding early, mid-season and late varieties of plants. For example, you can find certain varieties peppers and tomatoes that are early season, mid season, and late season. When you plan your garden, think about how you could extend the summer growing season by planting a few of each kind of plant to have a consistent harvest during the summer and into the early fall.

A two season harvest may not be as ambitious as a three season one, buy it's a good way to start. Start small and achieve success with the best vegetables you ever had., while supporting biodiversity, which is an essential part of nature.

Conclusion

So there you have it. We at LSB hope this guide will inspire you to plant a garden, save seeds and pass those seeds and your gardening traditions along in your family and community. We encourage you to explore the options presented . Find what intrigues you, then follow it and make it your own. The plants you choose to grow reflect who your are as an individual. The colors, the textures, the aromas, and the vocal expression of "yum" when you taste your freshly picked vegetables will delight your senses, which are uniquely yours. Gardening and saving seeds offer you this chance of exploration and discovery, and LSB hopes you enjoy your experience.



About Library Seed Bank

Library Seed Bank (LSB) is project started by Jeff Quattrone, an artist and heirloom seed advocate. LSB works with public organizations to establish seed banks or seed libraries.

LSB believes in preserving food biodiversity through seed saving, believes in telling the story of agricultural history through seeds, and is a proponent of food sovereignty.

For more information, please visit **www.libraryseedbank.info**.

© 2018-2015Library Seed Seed Bank. Written by Jeff Quattrone.