



Sustainable Growing Guidelines

Introduction: Sustainable gardening is a process that promotes biodiversity and locally adapted biological cycles that in turn restores, sustains, and enhances overall ecological and human health. Sustainable growers are committed to creating a healthy environment and viable food system over the long term and feeding people in the near term. They rely on ecological processes, biodiversity, and soil health rather than depending on the use of inputs. This type of agriculture is commonly called “organic” by the US Department of Agriculture. While our programs are not certified organic, we do not permit anything that does not meet organic standards in our gardens (with the exception of non-organic seeds and starts). The use of non-organic products at any community garden may result in loss of gardening privileges, so please ask Garden City Harvest staff if you have any questions.

Soil Health and Amendments

If sustainable gardening had a motto, it would be: *feed the soil, not the plant!* Gardeners are encouraged to build their garden’s soil with the recommended practices below. Gardeners are welcome to bring in additional soil building materials (i.e. leaves, manure, compost, or straw) although *all additional material must be free of synthetic fertilizers, chemicals, and biosolids (treated sewage)*.

Crop Rotation

Crop rotation is the practice of rotating crop *locations* on the same plot of land to improve soil health, reduce disease and pest issues, and optimize nutrients in the soil. While challenging in a small garden setting, it is still strongly recommended. Many garden diseases are soil borne and many insect pests overwinter in the soil. Additionally some plants are considered “heavy feeders” because they take up a lot of nutrients in the soil. Crop rotation can reduce the stress on the soil by moving heavy feeders around year after year. Aim for a 3 year rotation if possible.

Crop Diversity

Plant a diverse garden! A variety of plant types can help attract beneficial insects, confuse pests, and increase your chances of a good harvest in case one crop has a bad year. Companion planting is one technique to increase crop diversity. Generally, we recommend planting a variety of herbs, flowers, and different vegetable families in your garden plot.

Compost

Compost is decomposed organic materials and is a rich soil amendment. Mix compost into your plot to boost soil fertility, add good micro- and macro-organisms, and improve soil water

retention. Near the end of the season, you can also chop up and incorporate leaves, cover crop, and unproducing vegetable crops straight into the soil. Given a few months, this plant material will break down and integrate into the soil - essentially composting in place. (Important: do not “compost in place” with weeds, diseased or pest-infested plants).

All community garden sites have a compost system and the finished compost is for all gardeners' use. Likewise, it is also every gardener's responsibility to maintain them. Please talk with GCH staff or a Leadership Committee Member if you have any questions about how to use and maintain them properly.

Herbivore Manure

Garden City Harvest brings in manure for each plot every spring. Gardeners are expected to incorporate allotted amounts into soil before planting. Manure increases available nitrogen and improves soil structure.

Worm castings are the product of a worms' digestive system with the help of microorganisms and invertebrates. They contain increased levels of humus and micronutrients. Castings can be used to side-dress garden and house plants, as a supplement in potting soils, or made into tea and sprayed on plants.

Mulch

Non-synthetic materials such as straw and leaves can be used as mulch to suppress weeds, moderate soil temperature, and conserve soil moisture. It can also help improve soil structure as the mulch decomposes.

Wood chips or sawdust are used as pathway mulch at some gardens, and should not be used within garden plots due to the high carbon content, which can lock up available nitrogen for annual vegetables.

Fertilizers

Fertilizers are substances that contain one or more recognized plant nutrients used in promoting plant growth. Most common nutrients include Nitrogen (N), Phosphorus (P), and Potassium (K). This is commonly seen as three numbers on all fertilizer labels (N - P - K). Gardeners are encouraged to add organic material rather than fertilizers for long term soil benefits. However, when used appropriately and strategically, fertilizers can give plants a boost to defend against a pest or ease transplant shock.

Look for the “USDA Organic” label when choosing a fertilizer. Fertilizers that meet organic standards include fish emulsion, blood meal, fish meal, feather meal, kelp meal, or bone meal. It is easy to over-apply and burn plants with fertilizers, and some organic options may still be hazardous to humans. Make sure to follow all instructions and precautions provided. ***Synthetic fertilizers are prohibited (no ammonia, urea, Miracle Gro, GMO, treated sewage, superphosphates etc).***

Cover Crops

A cover crop or “green manure” is a crop that is planted to improve soil health and productivity and not necessarily a food crop. They can be grown alongside vegetables, but most commonly are grown in areas not currently in-use by food crops, allowing the soil “to rest.” Cover crop benefits include: suppressing weeds, fixing nitrogen, improving soil structure, preventing erosion, conserving moisture, increasing biodiversity, and attracting beneficial insects. Additionally, cover crops can be chopped down and left on the surface and/or turned into the soil to add even more nutrients.

Some of our favorite cover crops are clover, hairy vetch, peas, oats, phacelia, and buckwheat. Because there are many different cover crops out there, do some research to understand their growth cycle, benefits, and which is best suited for your growing conditions. Also, keep in mind that sometimes, a mix like peas and oats might be best.

Pest and Disease Management

The best defense from pests and disease is a healthy offense because stressed plants actually *attract* pests. Healthy plants are also the most resilient and can overcome most seasonal pest infestations.

Healthy Plants

Start by choosing healthy transplants and keep a close eye on your plants throughout the growing season. Not only will you be able to identify disease or a pest infestation early, you can regularly work to reduce potential stressors or competition. Keep your plants well-watered (avoid overwatering) and regularly remove weeds which compete for resources. If your plants are showing signs of stress, fertilize with an organic fertilizer like diluted fish emulsion to give them a boost.

Healthy Soil

Again, it all goes back to building good soil. In order to have healthy plants, you need healthy soil. Additionally, many garden diseases are soil borne and many insect pests overwinter in the soil, so rotating your crops is an important practice to minimize pests and disease.

Insect & Disease Control

Organic pest and disease management is all about early identification, and then frequent and persistent treatment. While it’s nearly impossible to eradicate the pest entirely, you should be able to manage it effectively, which means maintaining healthy plants and a good harvest.

Each pest is different but common organic control methods include hand picking, spraying a biodegradable soap mixture, or removing the affected plant from the garden entirely*. If resorting to a plant-based or “USDA Organic” insecticide (i.e. pyrethrum), make sure to follow directions carefully and take precautions. Many organic products can still be highly toxic to humans, beneficial insects, or some plants. Check with Garden City Harvest staff before applying insecticides or fungicides. ***Use of synthetic insecticides and fungicides is prohibited.***

**To prevent the spread of disease and pests, do not put diseased or infested plants in the compost bin. These plants must be removed from the garden and thrown in the trash off site.*

Seed and Start Selection

Second to soil, a successful garden begins with carefully selected seeds and plant starts that are adapted to local growing conditions. Non-organic seeds and starts are permitted in the gardens but not preferred. Locally grown and adapted seeds, heirloom, or openly pollinated seeds are highly recommended. Following, certified organic heirloom or hybrid seeds are a good option. Garden City Harvest buys most seeds for our farms and gardens from High Mowing Organic Seeds (Vermont), Fedco Seeds (Maine), and Johnny's Selected Seeds (Maine). Triple Divide Seed Co-op (Montana) and Botanical Interests (Colorado) are also good options.

We highly recommend finding starts from local farmers and growers (check out the Farmers' Market in May!). Often they sell the same varieties that they plant in their own fields or gardens, so you know it will do well in our climate and growing conditions. The grower is also a great educational resource if you have questions about the varieties they sell.

Additional Sustainable Gardening Resources

We hope you'll continue exploring and learning about the world of sustainable agriculture by attending Garden City Harvest's workshops, subscribing to Garden City Harvest's Blog - The Real Dirt or these recommended readings:

- [Rodale's All-New Encyclopedia for Organic Gardening](#)
- [Organic Gardening in Cold Climates](#) by Sandra Perrin
- [The New Organic Grower](#) by Eliot Coleman
- [The Montana Gardener's Companion](#) by Cheryl Moore-Gough and Robert Gough
- [Gardening: An Ecological Approach](#) by Fred Montague
- [The Organic Gardeners Handbook of Natural Pest and Disease Control](#) by Fern Marshall Bradley, Barabara Ellis, and Deborah Martin

