



Growing an Urban Food Garden

edibleflint.org

Our Mission:

Edible Flint supports Flint residents in growing and accessing healthy food in order to reconnect with the land and each other.

Edible Flint programs and materials are open to all without regard to race, color, national origin, gender, religion, age, disability political beliefs, sexual orientation, gender identification, marital status or family status.

STARTING YOUR GARDEN

Site Selection

- Your site should receive at least 6/8 hours of full sun
- Easy access for equipment and supply delivery
- The garden has a water supply or access to water

Ask Yourself:

- Are there trees, homes or structures that shade the site?
- Can I get water from a neighbor?
- Who owns the property?

Site Preparation

- Start with a soil test
- Build your soil with compost and mulch

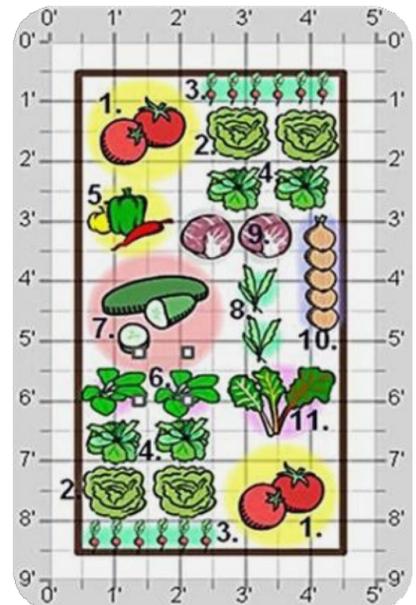
For New Lots and Community Gardens

- Find out who owns the property
(<https://flintpropertyportal.com/> for City of Flint)
- Research the History of the site

Ask Yourself:

- Could previous land use have caused soil contamination?
- Was it ever a gas station, laundromat, or dry cleaners?
- Was there a house that may have been painted with lead based paint?
- Were cars or construction equipment ever parked on the site?

SUN- Pick the sunniest spots for your garden! A south-facing wall will warm quickly in the spring and be perfect for heat-lovers like tomatoes and peppers in the summer. Spots with at least 4 hours of sun may work for leafy greens.



PLANNING YOUR GARDEN

- For beginners, start small and keep your garden simple.
- Draw a plan of your garden. Using graph paper works well.
- Know where, when and how to plant. Use resources like the local library, extension websites, seed packages and other resources to know how big each plant will be by the end of the season. This will help you plan how much space you will need between plants and rows.
- Plan how you and others will walk through your garden to water and weed without stepping on the plants.
- Taller crops such as corn should be planted in the north section of your garden so that they don't shade smaller plants.

SOIL TESTING

Test the soil for chemicals like lead. Testing the soil will also tell you what nutrients are in your soil and if any should be added.

If the test results indicate

- **Safe soil-** then begin to prepare your soil for planting.
- **Unsafe level of toxins-** consider another site or an above ground gardening option like raised beds or container.

For information on how to read your soil test results visit MSUsoiltest.com or call the MSU Lawn and Garden hotline **1-888-678-3464**

Improve your soil

- Good soil is the key to healthy plants. If you have limited money or time, put those resources into improving your soil.
- When breaking ground in the spring, delay preparing your soil when the ground is wet. If you work the soil when it is too moist it can become hard and compacted which will limit plant growth. Try this test; take a handful of soil and if you can press it into a sticky ball- it's too moist- wait until the soil is drier. If soil is too dry, a ball will not form.
- If more nutrients are needed, based on your soil test results, then natural vegetable composts and soil enhancers like lime or sulfur can be added to the soil.
- Work the compost and/or soil enhancers in to your garden by turning over your soils to a depth of 8 to 12 inches to loosen the soil and prepare for growing plants.

Taking a Soil Sample



1. Dig 6 inches down



2. Collect Sample



3. Sample Multiple Spots



4. Combine samples and mix



5. Place 1 cup of mix in plastic bag

Soil tests can be purchased from Michigan State University Extension. Go to https://www.canr.msu.edu/resources/soil_test_kit_self-mailer

SOIL FEEDS PLANTS

Plants will need nutrients from the soil as well as water and sunlight to grow and produce!

What does a soil test tell me?

Your soil test will tell you what the pH of your soil is – this means how acidic or basic the soil you're using is for your plants. It will also tell you about the presence of nutrients that plants take up from the soil. These nutrients help plants to create new cells which helps them to grow!

pH – this is a measure of how acidic/basic soil is on a scale between 0 and 14 with 7 being neutral. Acidic solutions have a pH below 7. A pH above 7 is basic.

Nitrogen - the most used element for plant growth because it helps to create proteins and enzymes. You'll know that plants are lacking nitrogen if the older leaves begin to yellow and wilt because it travels to new growth.

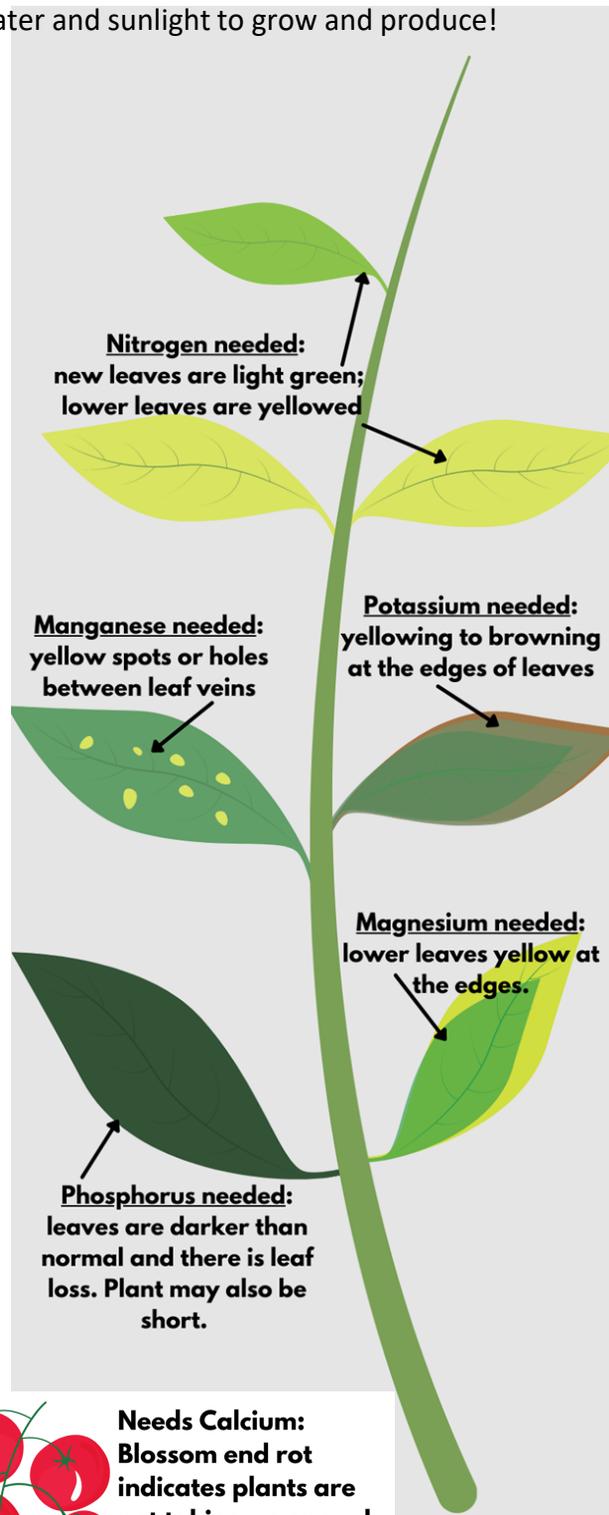
Phosphorus - helps plants to build energy and is related to the pH of the soil. Phosphorus prefers a more acid soil with a pH between 5.5 and 6.5 – this is on the acidic side of the pH spectrum. Without phosphorus, plants may be shorter and leaves will be darker or fall off.

Potassium – helps plants to take up water and produce energy. Plants that lack potassium will brown along edges.

Magnesium- leaves may get yellow at the outside, leaf veins remain green.

Manganese – yellow spots or holes may appear. Also watch for pests if you see holes appearing in leaves.

Calcium- brown or black spots on the bottom of fruits like tomatoes and peppers may indicate that plants need to take up calcium. That can be done by adding calcium or watering plants more.



Nitrogen needed:
new leaves are light green;
lower leaves are yellowed

Manganese needed:
yellow spots or holes
between leaf veins

Potassium needed:
yellowing to browning
at the edges of leaves

Magnesium needed:
lower leaves yellow at
the edges.

Phosphorus needed:
leaves are darker than
normal and there is leaf
loss. Plant may also be
short.

Needs Calcium:
Blossom end rot
indicates plants are
not taking up enough
calcium from the soil.
Also ensure plants
are getting enough
water.

IMPROVING THE SOIL

Add things to the soil helps to ensure that your roots, shoots, and fruits are plentiful!

WHAT IS COMPOST?

Compost is a dark, crumbly, porous, soil-like material. In nature, compost or humus is created as plant materials break down over time. It is rich in organic material but it is not the same as soil. Mulch is used to suppress weeds and maintain moisture in garden beds.

COMPOST IS A FERTILIZER

Compost adds nutrients from organic material to gardens. Rake compost into the soil around the base of trees. Nutrients from the compost will feed the roots of the tree. Scoop compost near the base of plants, like peppers, to give them a nutrient boost!



APPLY COMPOST TO GARDEN BEDS

Sprinkle compost on to soil of garden and gently turn over the soil to mix in the compost. Compost adds organic material to the soil. With the dimensions of your space figure out how much compost you will need. A good starting point is 25% or 3 parts soil to 1 part compost.



ADD COMPOST TO CONTAINERS

Mix compost with soil and perlite in a container. Perlite is a material that keeps soil from compacting in a container and compost adds nitrogen and other nutrients that plants use to grow and produce fruit. Compost should be about 20-25% of a container.



Soil is an anchor for plants, a source of nutrients and oxygen flow, and promotes plant health and resistance to disease.

Be careful not to overwork your soil or tamp it down

Healthy soils allow air, water, and insects to move through it. It should not be pressed down or continually tilled. Over tilling can create clumps, compaction, and allow nutrients to be washed away.

Why do we talk about compost so often?

Compost is already broken-down organic material. It might be made up of leaves, grass clippings, vegetable peels and stems and other food waste. All soils are different, and compost adds nutrients and helps create space for air to circulate in the soil.

How much compost do you need? A little bit of math

Know the dimensions of your garden space, raised bed or container and think about three dimensions – length, width and depth. This will help you know the volume of the container. If you're using a container, think one scoop of compost after three scoops of soil.

Build soil over time:

Weed tea – comfrey and white clover
Mulch – maintains moisture in the soil, adds organic material as it breaks down
Grass clippings – for mulch and nitrogen

REDUCING YOUR ECO FOOTPRINT

WEED TEA: “FREE” NATURAL FERTILIZER

Next time you are weeding the garden throw all the weeds into a bucket or trash can, chopping them up as you go. When it is about half full, fill it with water. Don't use chlorinated water; rainwater is the best (also free!)

Screen the top to keep mosquitoes out. Stir daily or if using manageable sized buckets you can pour it from one bucket into another to mix things up and keep it aerated. Let it soak for 3 days to 2 weeks. Strain and use the liquid right away as a fertilizer or foliar feeding.

It can be diluted or used full strength on established plants. Since plant leaves tend to absorb more nutrients faster than roots, foliar feeding is an efficient way to fertilize. Weeds are full of nutrients they have absorbed from your soil so it is only fitting to extract the water soluble ones and return them to your garden plants.

Once you have a batch of weed tea ready, dilute to about one part of tea to ten parts water. Use this mixture as a direct fertilizer simply by adding it to the soil at the base of each plant. Any plant, including vegetables, can benefit from this.

Foliar Spray: dilute it until it is the color of weak tea and use a spray bottle to cover leaves of the plants you want to fertilize. Avoid spraying the tea on vegetable plants if they are close to being harvested.



Stinging Nettle



Horsetail



Comfrey

Plants that make extra nourishing fertilizer tea such as:

- **Stinging Nettle** is high in nitrogen, calcium, iron, vitamins A,B, & C, phosphorus, potassium, boron, iron, zinc, selenium, and magnesium. A natural insect repellent, when sprayed on leaves it can help plants resist insect and fungal attack
- **Alfalfa** is high in nitrogen, vitamin A, folic acid, potassium, calcium, and trace minerals. If you don't have access to it you can use alfalfa hay, meal, or pellets.
- **Horsetail** is a deeply rooted weed that draws up minerals including potassium, silica, and iron from far below the soil.
- **Willow** is rich in growth hormones, making it especially good for getting young transplants off to a good start.
- **Comfrey** is rich in calcium, phosphorus, potassium, magnesium, vitamins A,B,& C, and trace minerals.
- **Chicory** is high in potassium, calcium, and vitamin A.
- **Dandelions** can be put to good use making a tea that is full of vitamins A & C along with calcium and potassium.
- **Grass** works well too. Fresh grass clippings are high in nitrogen and potassium. Gather up your clippings next time you mow the lawn, fill a bucket 2/3 full of them, add water and steep 3 days, stirring daily.
- **Use your weed tea fertilizer no more than once every two weeks or so.** New transplants, blooming plants, and those setting fruit will especially benefit from the nutrient boost.
- How to video:
<https://www.youtube.com/watch?v=m9lWyiKKWx4>

WHAT TO GROW

What to Grow

- Grow Vegetables that you and your family enjoy.
- Talk to neighbors and other gardeners about what grows well for them.
- Ask local nurseries for the types of vegetables that have few pest problems and grow well in your climate.
- The size of your garden tells you how many and what type of plants you can grow.
- If you have limited space grow crops that are small but very productive like snap beans, tomatoes, lettuce, greens, carrots and peppers.
- Look for dwarf, bush or compact plants.
- Plants that grow on vines, like pumpkins, winter squash and melons, require lots of room and are not the best choice for small gardens although they may be trellised vertically.
- Salad greens and herbs used for food are some of the easiest plants to grow.

12 Easy Crops

Green Beans
Peas
Radishes
Lettuce
Greens
Summer Squash
Tomatoes
Peppers
Beets
Cilantro
Basil
Chives

Cool Weather Crops

Peas, Lettuce, Spinach, Kale, Swiss Chard, Broccoli, Collards, Cauliflower

Warm Weather Crops

Tomatoes, Peppers, Melons, Cucumbers, Eggplant

Colorful Vegetables and Herbs

Lavender, Basil, Lettuces and Greens, Swiss Chard, Scarlet Runner Bean

Succession Planting

It's a lot of work when your whole garden is ready to harvest at the same time. Space out your harvest by planting vegetables that produce for a few weeks at a time. It's a good idea to save space in your garden to add seeds (lettuce, peas, radishes) every few weeks to extend the harvest time.

Rotating your Crops

Rotating your crops every year (changing the location of plants within your garden) helps to control insects and disease.

Easy Rotation Reference

LEGUME
peas, beans
etc.



ROOT
onions, carrots,
beets etc.



FRUIT
Tomatoes, peppers,
squash etc.



LEAF
lettuce, cabbage,
spinach etc.



PLANTING YOUR GARDEN

HOW TO PLANT

Direct Sowing

Planting seeds directly into the soils is called direct sowing. Planting directions are printed on most seed packages. The directions will tell you how far apart to plant seeds and how deep to plant them.

Transplanting

Transplants are plants that have begun to grow in containers. You can purchase them from a nursery or grow them yourself in a protected environment. Transplants need to be hardened off. Hardening off is exposing the plant to the outdoors little by little. For a few hours during the day, set the transplants in a shady area of your garden or yard that is protected from the wind and sun. Over the next seven days, slowly move the transplants into full sun.

- Planting seeds and transplants depends on weather.
- Cool Season vegetables prefer cool temperatures and their seeds need cool soil to sprout.
- The seeds of warm season vegetables don't grow well in cool soil. These plants need a longer warmer growing season. Cool weather will slow the growth of these tender vegetables and frost can kill them. Buying warm weather crops as small plants from a local nursery insures that you will harvest before the cooler weather stops the vegetables from ripening.
- Starting your plants from seeds will lower your costs and offer the widest variety. Although, some planning is required to have the space, tools and time to start them indoors.

Planting Tips

- Plant your transplants in the evening or on a cloudy day.
- Dig a hole for each transplant a little larger than the container.
- Carefully remove each transplant from the containers one at a time and place them into the ground at the same depth they were in the container.
- Gently push the soil around the plant with your hand. Do not tamp or stomp the soil around the plant.
- Water them thoroughly one at a time. Be careful to not wash away surrounding soil.
- To prevent weeds, place mulch around the plants, being careful to keep it away from the plant's stem.

Thinning

Pulling out extra seedlings to make space for full grown plants.

Thinning is best done when the seedling has two sets of 'true' leaves. True leaves look like the leaves on the mature plant.

Pinch or cut off the unwanted seedlings at soil level instead of pulling them out. Doing this insures that you won't disturb the roots of surrounding plant.

TENDING TO YOUR GARDEN

WATERING YOUR GARDEN



- Usually plants need an inch or more of water weekly. In hot weather, check your plants daily. If the soil is dry a few inches down or if your plants are wilting then use more water. Young plants are likely to need more water, especially on sunny days.
- Water gently and directly at the bottom of the plant. Begin with 20 minutes or until soil is damp 3-4 inches below the surface. A watering can, wand on the end of a house, or a soaker hose will help protect plants from strong blasts of water. Plants in containers dry out more quickly than in garden soil.
- Water in the morning to prevent disease or plant stress.

PEST AND DISEASE MANAGEMENT

When you have any growing success in the garden, you will have to address pests - insects and animals that will also want to share in this food source - or diseases that may appear. There are many ways to deal with garden pests and disease and there are simple steps to deal with pests.

- **Scout:** To best address pests you need to keep an eye out for pests. Look for signs that pests are in your garden. This could be holes chewed in leaves or plants disappearing depending on the size of the pest.
- **Identify:** Figure out what the pest is to best stop them. To identify pests, you can watch for them and snap a picture or use an online tool like MSU Extension Ask An Expert which is a free resource. Find at <https://www.canr.msu.edu/outreach/ask-an-expert>
- **Treat:** Make sure you know what you dealing with before applying any pesticide. Treatment could mean trapping, removing by hand, fencing, using an insecticide, and more.

MULCHING AND WEEDING

Weeds compete with your food plants for water, nutrients, space and light. Stopping them from growing is the best strategy to ensure healthy plants.

- Two inches of mulch is ideal.
- Weeding will be easier if you mark your plants. This way you won't confuse your plants with weeds and remove them accidentally.
- Pulling weeds is easier after rainfall or watering.
- One trick to keep weeds in check is to set aside 10-15 minutes of every day for weed pulling. It's also great exercise!
- Pull weeds before they produce seed.

Mulch can be any material that you spread on the soil surface to help control weeds, save water and feed the soil. Possible mulches include: grass clippings (as long as you don't use chemicals), leaves, newspaper, straw and compost.

HARVESTING

HARVESTING

- Check your garden often for ripe produce; you'll enjoy it more!
- Pick in the morning. Vegetables picked during the hottest part of the day may not last as long.
- Pick during dry weather & allow the surface of the vegetable to dry, as wet produce is more prone to rot in storage.
- Pick vegetables at their peak flavor and nutrition level.
- Learn when to harvest different vegetables. Think about what you plant and when it will be ready so you aren't too busy at harvest time.
- Try freezing, canning or storing some vegetables in your basement or cellar. If you have extras, share with your friends, neighbors, local shelters or food bank.

PRESERVING THE HARVEST

When you have lots of vegetables coming out of your garden, you may be overwhelmed with tomatoes or peppers. Canning, freezing and other methods will help you enjoy your garden after you're all done gathering from the garden. Check your canning equipment and supplies. Current and safe equipment is critical for the success and safety of your preserved foods. Also, equally important for preserving food at home is reliable and safe preservation information.

Use recipes from reliable sources featuring recipes that are tested for safety. Information on canning is available from MSU Extension or by visiting the National Center for Home Food Preservation. <https://www.canr.msu.edu/outreach/>

Vegetables can be blanched before being frozen in airtight containers or plastic storage bags. After rinsing vegetables, place vegetables into boiling water and allow the water to return to a boil. Remove the vegetables after 1-2 minutes at a boil and place into ice water. When the vegetables are cooled, place them on cloth or paper towels to dry. Package blanched vegetables into airtight bags and place in the freezer. Some vegetables, like tomatoes, onions, peppers, and fresh herbs, do not need to be blanched before freezing.

USDA Complete Guide to Home Canning-
nchfp.uga.edu/publications/publications_usda.html

National Center for Home Food Preservation-
nchfp.uga.edu

MSU Extension Genesee County-
Msue.msu.edu/genesee

RESOURCES FOR FOOD GARDENERS

Edible Flint- contact us via info@edibleflint.org; visit our website www.edibleflint.org or visit our Facebook page for Edible Flint

MSU Soil Tests- Go to https://www.canr.msu.edu/resources/soil_test_kit_self-mailer

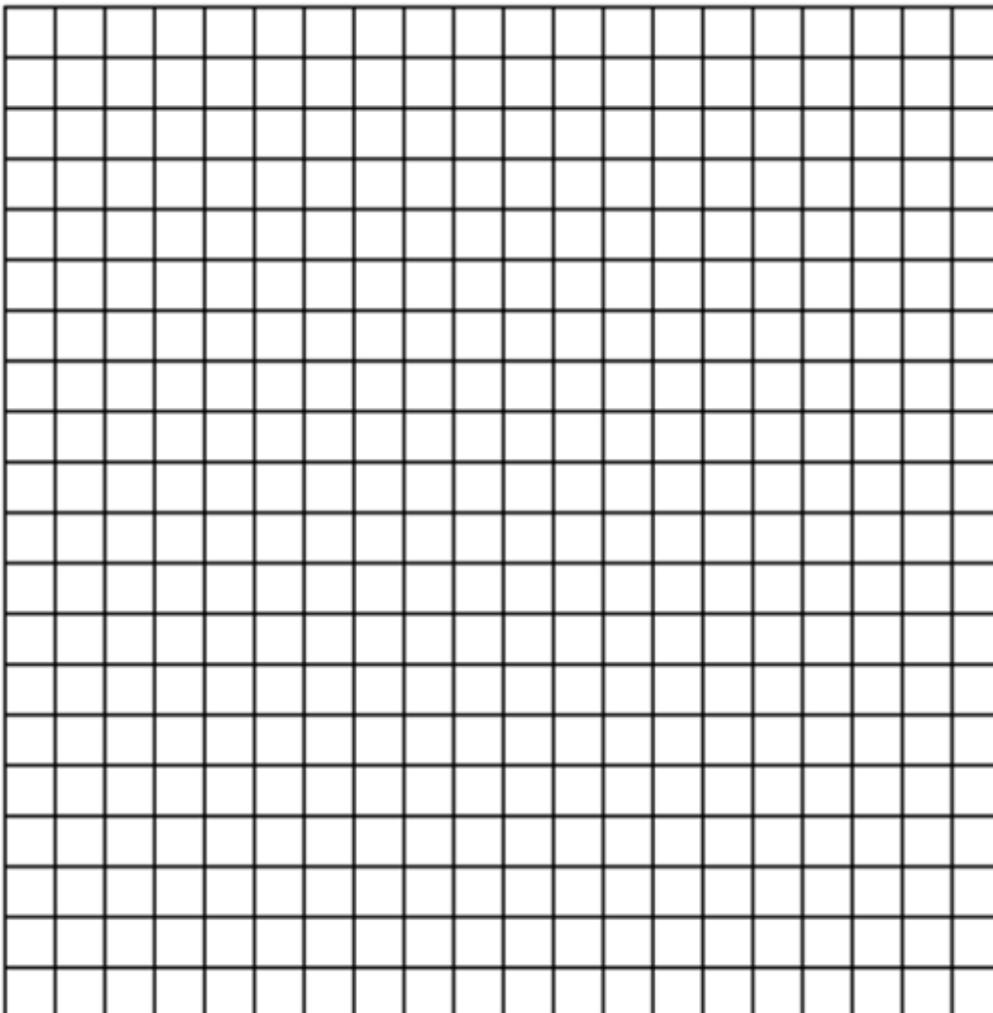
MSU Gardening in Michigan- https://www.canr.msu.edu/home_gardening/

MSU Extension- Soil Testing, Plant & Pest Hotline- 810-244-8500; msue.msu.edu/genesee

The Neighborhood Engagement Hub- tool shed, including tillers, mowers & garden tools 810-789-6787; neighborhoodengagementhub.org

Genesee Conservation District- small and large-scale agriculture resources, high tunnel and conservation practice technical assistance and cost-share; produce safety and MAEAP guidance; conservation and reforestation products. 810-230-8766; genesecd.org

PLAN YOUR GARDEN HERE



Use this grid to layout and record how you plant your garden.

This will help with rotation for future gardens.