

Dig In!

Growing a Community A Guide for Starting a Community Garden

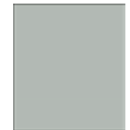


EMPOWERMENT THROUGH EDUCATION





The Urban Agriculture Program provides education and resources that help communities grow nutritious food, develop important life skills, and create a healthy environment.



Published by



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Printed in 2011

Thank you to all of the community gardeners and urban farmers in Cuyahoga County that have made a difference in their neighborhoods. These individuals are not afraid to get their hands dirty to make their communities a greener, healthier place. This publication is dedicated to them.



Frontier Community Garden, Cleveland
© Don Snyder

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Introduction

What is a Community Garden?

The American Community Gardening Association (ACGA) has a broad definition of what a community garden is. It can be urban, suburban, or rural. It can grow flowers, vegetables and community relationships. It can be one community plot, or can be many individual plots. It can be at a school, hospital, or in a neighborhood.

Regardless of where your garden will be, it will reflect those people that care for it. A community garden can be a gathering place for the people who garden there. It will reflect the culture of the people who care for it, and may even vary in appearance from one part of the garden to another.

A community garden offers many benefits to those who work in it and to the community around it. It provide lots of fresh, healthy food for the gardeners and their families. Most gardeners find they get much more food than they can use. They gladly share with neighbors and friends. Some gardens arrange for extra food to go to community food pantries or meal programs. Besides the healthy foods they pick, gardeners get lots of good exercise caring for their plots.

Gardens also bring people together from all kinds of backgrounds, working together on the same goals. They will use and improve their planning, organizing and leadership skills, which will be useful in other community projects. A beautiful garden may lead to other efforts that positively impact the neighborhood. A community garden may attract new people to the neighborhood.

Community gardens that are a part of **Ohio State University Extension's (OSUE) Urban Agriculture Program** grow fruits and vegetables in order to provide healthy food to the neighborhoods of Cuyahoga County. The Urban Agriculture Program provides education and resources that help communities grow nutritious food, develop important life skills, and create a healthy environment. Resources provided by Ohio State University Extension include workshops, training courses, newsletters, print and web-based educational materials, and technical assistance. OSUE fulfills the land-grant mission by bringing research and education to you!

This guide has been designed to provide you with a toolbox for starting a community garden. Equally as important as knowing how to grow vegetables is the ability to organize. Please use the pages in this guide as a resource as you go through the steps of building your unique community garden. In the **Appendix: Digging Deeper** section of this guide, you will find sample forms and resources. You are encouraged to use these as models as you design your project.



Look for the  shovel symbol throughout the guide to *dig deeper* into one of the appendix pages.

Part One

First Steps to Getting Organized

Defining your vision early on will help the group make decisions and keep everyone on the same page. It will also help you make your case to landowners, future gardeners or potential donors. Write ideas and meeting notes down; take photos. Documentation helps you communicate what you are doing and share successes. Defining roles and responsibilities will help to divide tasks and prevent any one person from being overwhelmed.



Lakewood Christian Service Center Garden, Lakewood

Developing a Vision for Your Garden

Defining why you want to develop a community garden will help you create a vision for your project. Similarly, it will help you (your garden group) identify what you want to accomplish and how you will prioritize your garden's goals. This will help to recruit new garden members and gain community support.

Developing A Vision for Your Garden

A community garden doesn't just happen; it takes hard work and commitment.

List three reasons why you (your group) want(s) to develop a garden.

- 1.
- 2.
- 3.

Define what you want to accomplish and prioritize your goals.

Example: 1. Our primary goal is to produce fresh nutritious food for our families and our neighbors.
2. We want to clean up our neighborhood block and create a beautiful garden where people can come together.
3. We want to educate youth about gardening and the importance of environmental stewardship.

List three goals your garden group wants to accomplish and then prioritize

- 1.
- 2.
- 3.

Use your garden goals to create a brief mission statement.

Example: "Our mission is to strengthen our neighborhood by maintaining a community garden that provides a common ground for neighborhood members to garden together and get to know each other." *Create a mission statement that unites the group and the garden to a larger purpose.*

Identify how your garden project will benefit your neighborhood and community.

Think of examples:

- 1.
- 2.
- 3.

GardenWorks CG Start-Up Guide, Sept 2007

Recruiting Members for the Community Garden

You, or you and a few people, want to start a community garden. Now you can ask, who will be the members of your garden group? How can you get to know them? Here are some ideas for recruiting members:

1. Spread the word!

- Inform the neighborhood block club.
- Make a flyer and post it at area stores, banks, community centers and churches. Have people already interested in the garden circulate the flyer door-to-door.



Sample Flyer

- Include a note about the garden in church bulletins and the community newsletter.

2. Pull out your address book

- The best resource you have is the people you already know. Talk with family, friends, coworkers, and neighbors.

3. Network

- Visit other community gardens in your area. The locations of gardens are available from the OSUE office in Cuyahoga County.
- Carry a note pad with you when you're at the gardens. Collect names and addresses of interested individuals.

4. Host an Event

- Host a party, picnic, or barbeque to let interested members see a potential site, meet the members already involved, and learn about your plans.

Getting Organized

A few basic steps to take to get your garden organized include:

- **Setting up garden rules** - Though you may not need them everyday, having set rules for the community garden will make it clear what can and cannot happen in the garden. The rules should be understood by everyone, so share them at meetings and provide a copy for each gardener to sign that they agree to the rules. Rules can change, so you may need to adapt rules as the garden changes over time.



Sample Rules

- **Garden Applications** - You will also need a signup form for your new garden participants. You can include a line on the signup sheet that gardeners will not hold anyone else liable for anything that happens in the garden.



Sample Application

- **Develop Leadership** - Successful gardens have strong leadership. Though your garden may have a person or two responsible, also consider developing a committee for specific tasks.



Example Committee Job Descriptions

- **Schedule Meetings and Workdays** – Throughout the year the garden may host a number of meetings and events. Start a garden calendar to keep track of these dates. Some events might include: annual meetings, spring registration, opening day, garden work parties, closing day, OSUE learning opportunities, social events, and community events.
- **Keep Track of Your Garden Participants** – Keep a roster with contact information and plot assignments for all the people participating in the garden.



Sample Roster and Plot Assignment Map

Adapted from the "Community Gardening Toolkit", Bill McKelvey, MU Extension Associate

Part Two

Asset Mapping and Getting Resources

Community gardens need resources. Those resources may be soil and plants or it may be publicity and help recruiting members. In this section we will look at how you can get the resources you need. Community gardens often have to be imaginative to find the things they need, and this may mean scavenging for materials, asking for donations, fundraising, and grant writing.



Paul Revere Community Garden, Cleveland
© Don Snyder

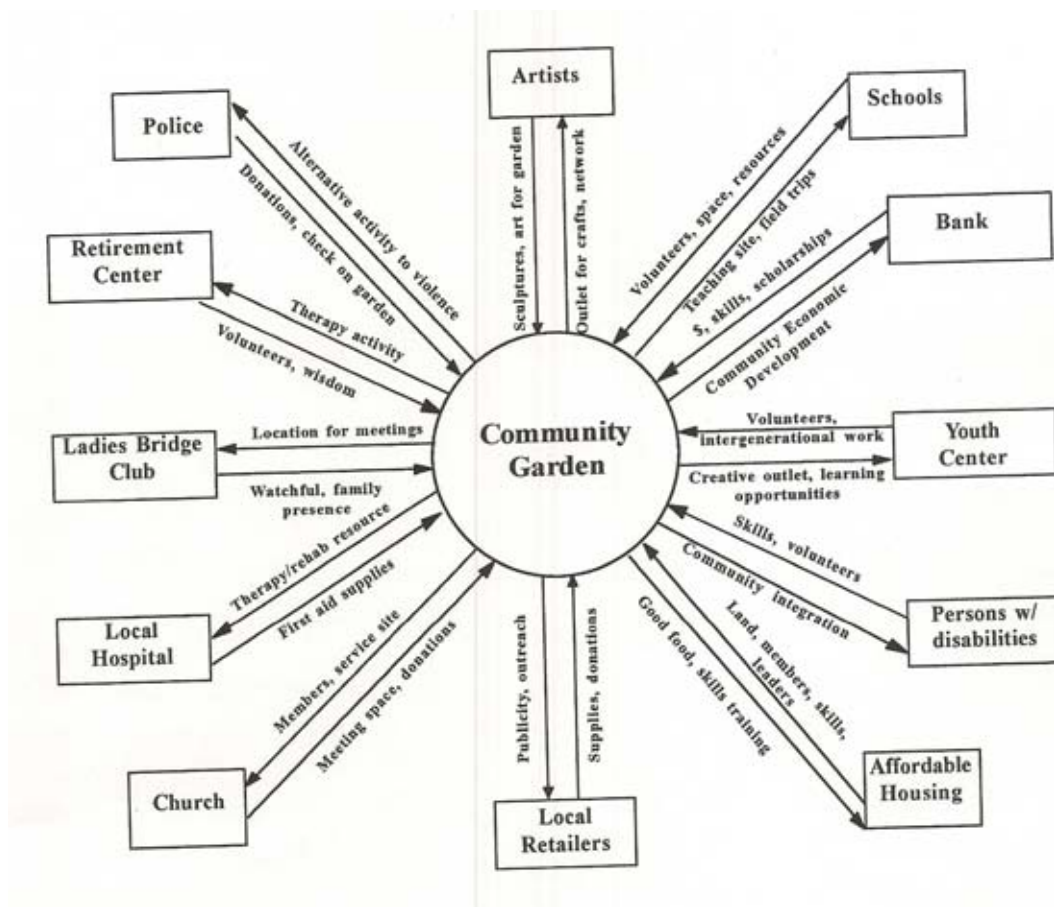
Asset Mapping

Asset mapping considers local assets as the primary building blocks of sustainable community development. It is a way to draw a line between the needs and goals of your project and resources in your community.

In your community, what are the local assets? They may include groups such as church groups, youth groups, parent teacher associations (PTAs), newspapers, local cable stations, Community Development Corporations, block clubs, or cultural groups. They also include institutions such as hospitals, colleges, parks, schools, businesses, and libraries. Take the time to map out these resources in your area. Think of ways a relationship with those assets might be mutually beneficial. Create a map like this one demonstrating how you can both benefit. These relationships may be helpful when you are looking for volunteers for a workday. They may also be useful for publicity or even funding opportunities.



Mapping Reciprocal Relationships



Adapted from American Community Gardening Association, Growing Communities Curriculum

Budgeting

Use this worksheet to list anticipated costs for items that your garden group has planned. Record actual expenditures and donations as they occur.

We've included some typical expenses for gardens here in this sample budget.

Line Items	1 st Year	2 nd Year	3 rd Year
<i>Revenue/Income</i>			
Plot Fees			
Grants			
Fundraiser			
Donations			
Balance from previous year			
<i>Total Income</i>			
<i>Expenses/Costs</i>			
Water Hydrant Permit			
Water Bill			
Hoses			
Shed			
Tools			
Compost			
Mulch			
Lease			
Liability insurance			
Tilling			
Raised beds			
Seeds			
Plants			
Printing			
Garden sign			
Fencing			
Bulletin Board			
<i>Total Expenses</i>			
Net Income (Income minus the Expenses)			

Adapted from Gardening Matters, CG Startup Guide, September 2007

Fundraising for Success

To assist your community or school garden in developing stability, consider these three questions:

- Is your garden ready to form a steering committee to provide coordination and leadership?
- Can your garden rely primarily on donated supplies, materials, and volunteer labor?
- Is your garden interested in seeking grants and/or ways to generate earned income?

The way your group answers these questions will influence the organizational development of your garden and its evolving leadership structure.

Getting Started/Thinking Ahead Stage:

For most community or school garden projects, the general rule of thumb is to start small and operate the garden on a non-cash basis for the first year or two. Here are some basic strategies:

- 1.) Get approval and a pledge of support from the landowner before starting the garden; then renew this pledge of support each year. In the case of a school garden, school leadership support is vital.
- 2.) Scavenge materials for your garden such as stakes, compost, containers, and lumber.
- 3.) Borrow tools and equipment from friends and participants.
- 4.) Form a steering committee to plan, make decisions, and secure in-kind contributions of materials, publicity, and volunteer labor.
- 5.) Secure donations of garden supplies, seeds, plants, and tools from local businesses.
- 6.) Apply for mini-grants available for specific materials and services.
- 7.) Enlist help from Master Gardeners and community volunteers of all ages. For school gardens, be sure that fellow teachers and the custodian are involved in the planning process.
- 8.) When seeking assistance, ask people for advice and suggest ways they can participate.

For school gardens, donations of cash and/or materials can be solicited on school letterhead with approval by the school administration. The school parent teacher association (PTA) may also supply some funds. Small grants for materials may also be applied for, with bookkeeping going through the PTA or business office.

For community gardens, it can help to have a fiscal organization involved (a nonprofit, social service agency, or parks and recreation department) whose letterhead can be used to solicit materials and/or grants. The fiscal organization acts as a fiscal agent for the garden project and is ultimately responsible for ensuring that funds raised are used for the intended purposes. Garden projects must seek and receive permission from the fiscal organization when planning projects and raising funds.

Jim Flint, Executive Director, Friends of Burlington Gardens, © 2005 Friends of Burlington Gardens

Grassroots Fundraising/Budgeting Stage:

In this stage of development, a garden project is on its feet and viewed positively by participants and the community. Cash resources are needed to develop infrastructure and expand programs. The garden steering committee is ready to become more formally organized. For most projects, this is the middle stage in developing stability. Here are some strategies that can be used:

- 1.) Brainstorm ideas and goals for the garden project. Be sure to include input from stakeholders (participants, teachers, community leaders, and community members) to build a base of awareness and support for your project. Develop a project folder that includes a wish list for materials, staffing, and program supplies. Before fundraising begins, reach an agreement on how to use funds raised.
- 2.) Consider grassroots fundraising ideas to generate income and build community support:
 - a.) Have Bake sales, yard sales, coin drops, or car washes.
 - b.) Fundraising programs, such as selling flower bulbs or T-shirts, require some cash upfront, but may generate higher returns and help build community support.
 - c.) Silent auctions and raffles highlight community partnerships by securing promotional donations from local businesses. Sometimes auctions and raffles are combined with a dinner or special event.
 - d.) Concessions sales of food and beverages provide exposure for your project at community sporting events and festivals. Food and paper products can often be secured through grocery store donations.
- 3.) Prepare a realistic budget for the calendar year listing projected revenues and expenses. Plan ahead so that revenues are generated before expenses are incurred.
- 4.) Open a cash account for your project with the fiscal organization, PTA, or school business office, or appoint a treasurer and open a checking account (preferably with no minimum balance requirement or monthly fees). Create an accounting system for revenues and expenses, decide on the office location and mailing address for the garden project, and establish who has the authority to spend money from the checking account.
- 5.) Try to start building a “nest egg” for unexpected expenses and to carry over from year to year. Keep this amount in reserve and add to it where possible.
- 6.) Cultivate a team spirit around fundraising, set goals, and celebrate the results. Recognize and thank volunteers, donors, and sponsors whenever possible.

Ongoing Fundraising

In this stage of development, the garden steering committee seeks funding and institutional support to become a permanent part of the community. Perhaps the major infrastructure of the garden has been installed, and now it's time to enhance education and outreach programs, as well as maintaining fences, raised beds, tools, equipment, and water lines. A deeper level of organizational support and commitment is needed beyond grassroots fundraising and small grants. Some groups evolve into nonprofit organizations, although this step is more complex from a legal and accounting standpoint. Groups interested in gaining nonprofit status will need to develop a clear mission and a detailed long-term plan for sustainability. Read on for recommended strategies:

- 1.) Together with your annual budget, develop a timeline and calendar of activities, steering committee meetings, fundraising efforts, work projects, and special events for the entire year. Try to involve participants in this process as much as possible.
- 2.) Develop a plan for publicizing your garden to a wider audience. Work up a media list with the names and contact information for local newspapers, radio, and TV stations. Develop a relationship with local reporters and editors, send press releases, and invite the media to special events.
- 3.) Create a brochure or project folder that describes your community or school garden program and provides interested supporters with information on how they can contribute.
- 4.) Create a scrapbook that includes news articles, color photos of gardeners, letters of support, and dreams for the future. Make this scrapbook available for viewing at public gatherings, school open houses, library exhibits, and county fairs.
- 5.) Start building a mailing list and email list of business people, parents, teachers, administrators, garden volunteers, community leaders, local nonprofit organizations, city and town officials, and legislators who support arts, education, and environmental programs.
- 6.) Publish a newsletter, and/or write local news articles about your garden. Thank sponsors and contributors where appropriate. Make your goals, mission, and vision well known to readers.
- 7.) Cultivate community partnerships with local social service agencies, nonprofits, garden clubs, 4-H clubs, Master Gardeners, scouting groups, service organizations, businesses, and conservation groups.
- 8.) Research grants available from foundations and organizations that support community-based gardens, community development, and environmental education initiatives. Get advice from a professional fundraiser about grant sources and proposal writing strategies. For school gardens, obtain teacher and administration support for your plans before writing and submitting a grant proposal.

Institutional Fundraising /Permanence Stage Continued

9.) Redefine roles for steering committee members so that the areas of fundraising, publicity, program development, and garden maintenance each have leadership. Circulate meeting agendas in advance, record meeting minutes, and develop an effective communications system among committee members.

10.) As your garden project grows, continue to seek input from participants and community members. Think about ways your program can publicly give back to the community, perhaps by sharing produce with a food bank or by having a community harvest festival.

11.) To maintain community support, consider changing some strategies from season to season, and from year to year. When you receive contributions of any kind, acknowledge your donors in word and print. Recognize and thank volunteers. Above all, keep the “fun” in fundraising, and your garden program will likely continue to attract new participants, volunteers, and contributors.

Part Three

Selecting a Site

Vacant land is abundant, but not all of it is created equal! In this section we will discuss criteria for selecting a site that suits both plants and people. Learn how to identify and assess a potential site.



Eliza Bryant Garden, Cleveland

Site Assessment: Get to Know Your Site

Inventory these features for each potential site

You have a few people who have come together to start a community garden. Where will you put it? Look for empty lots or unused land in your neighborhood. Don't rule out small or odd shaped spaces. They could work out. Make a list of possible sites. Try to find several to be sure one will work out. Consider these things when putting sites on your list.

Community Mapping

1) What community and business groups and facilities are nearby?

- ☐ Church, mosque, etc.
- ☐ Schools
- ☐ Childcare centers
- ☐ Community & neighborhood centers
- ☐ Aged care facilities
- ☐ Neighborhood watch groups
- ☐ Local environment groups
- ☐ Restaurants
- ☐ Business councils
- ☐ Garden stores
- ☐ Other businesses

2) Who lives nearby?

- ☐ What are the age groups of people?
- ☐ What are employment and unemployment levels?
- ☐ Is housing public, community, private rental, owned?
- ☐ What are people's cultural and language backgrounds?
- ☐ What is the crime rate in the area?
- ☐ What are other special characteristics of the people in the area?

3) Safety and Security

- ☐ Is the site near community facilities (school, community center, etc?)
- ☐ Is the site in view of houses, roads, shopping areas, etc?
- ☐ Is there graffiti or vandalism visible?
- ☐ Is there any lighting?
- ☐ Is there a neighborhood watch group?
- ☐ Is the site fenced?

Land Use

1) What are the main land uses surrounding the garden site?

- ☐ Businesses (what kinds?)
- ☐ Industry
- ☐ Parkland
- ☐ Major roads
- ☐ High density housing
- ☐ Medium density housing
- ☐ Low density housing

2) What is the history of the land?

- ☐ Residential
- ☐ Industrial
- ☐ Parking Lot
- ☐ Gas Station
- ☐ Business
- ☐ Other

3) Current land use

- ☐ Who currently uses the land?
- ☐ Do people walk through or use it as a shortcut?
- ☐ Rubbish dumped
- ☐ Illegal activities
- ☐ Children's play
- ☐ Other uses

4) Plants

- ☐ What plants grow well in the area?
- ☐ Who are the experienced gardeners in the neighborhood?

Tip: Use City Council, Community Development Corporations, and Census Data to answer these questions

Site Assessment: Physical Features

1) Size

- ☐ How big is the land?
- ☐ How much of the land is suitable for gardens?

2) Land tenure

- ☐ Who owns the land? Is the owner active on the land?
- ☐ Are there zoning regulations in place? What do they allow and restrict?
- ☐ What are/would be the leasing agreements, how long, cost, etc?

3) Sun, wind and soil

- ☐ What's the current ground cover? (grass, gravel, etc...)
- ☐ What is the slope of the land?
- ☐ What plants (including weeds and trees) are already on site?
- ☐ What is the soil like?
- ☐ How many hours a day sun does the garden get? (Should get at least 6 hours of direct sunlight)
- ☐ Are there any large trees or buildings blocking shading the site?
- ☐ Is there a water source on site?
- ☐ How does water move through the site?
- ☐ What direction does wind come from?
- ☐ What do you notice about the wind?

4) Structures

Are there any...

- ☐ Buildings on site?
- ☐ Seating?
- ☐ Shedding?
- ☐ Walls?
- ☐ Fences?
- ☐ Paved areas?
- ☐ Other structures?

5) Services

- ☐ Is there electricity on site or easy to access?
- ☐ Is there access for a vehicle for materials deliveries?
- ☐ Are there sewers or storm water drains?
- ☐ Is there public transport nearby?
- ☐ Are there major roads nearby?
- ☐ Are there barriers to pollution from traffic?
- ☐ Is there parking?

What other features does the site have? On another piece of paper, draw a quick sketch of the property.

Identifying Land Ownership in Cuyahoga County

It is important to get permission to use a site for a community garden. The following steps will help you find the owner.

- ☐ Find a site that meets the site selection standards.
- ☐ Talk to the neighbors surrounding the site and let them know what you are interested in doing. Ask them if they know who owns the lot and if they have any information about lot history. If they do know the owner, verify the information with official sources. You should also find out the past history of the lot (what it has been used for) that could determine whether or not you want to garden there. Certain uses may negatively contaminate the soil.
- ☐ If you and the site's neighbors do not know the owner, write down as much information about the location of the lot as possible: The building/house addresses on either side of it and across the street from it, the street name. If the site is in an unusual place it might help to draw a simple map of the area.
- ☐ You can find a lot of information about land ownership online (see next page for web based resources).
- ☐ Work with your councilperson or local government official. They will help you find out if there are any future plans for it before you invest your time and elbow grease in developing the vacant land as a community garden.
- ☐ If the lot is privately owned you need to contact the landowner to find out if they will let you use the land for your project.



Sample Lease Agreement

Online Resources for Identifying Land Ownership in Cuyahoga County

You can find a lot of information about land ownership online. In Cleveland you can find lots available in the land bank at:

<http://cd.city.cleveland.oh.us/scripts/cityport.php>

Steps for Using the Plat Map

- Click on instructions.
- Click on City Wide to get list of neighborhoods.
- Click on the neighborhood you want.
- A map comes up.
- Click on zoom the **blue bar** at the top of the map. Keep zooming until you have the street you want. Count from the corner to see the parcel you want.
- Go back to the bar at the top of the map. Click on **identify**.
- A box will come up. The parcel number and address will be at the top.
- Scroll down the information and find the link to the **County Auditor's Office**.
- Click on that link and the name of the parcel owner comes up.

If the lot is owned by the City of Cleveland, talk to your councilperson and local community development corporation (CDC) about your project. If the parcel is owned by the city, you will need the councilperson's permission to use the land before you move forward with your garden project.

The County Auditor's office can identify ownership, parcel numbers, and lot size:

<http://auditor.cuyahogacounty.us/rep/>

NEO CANDO, Northeast Ohio Community and Neighborhood Data for Organizing, is a free and publicly accessible social and economic data system of the Center on Urban Poverty and Community Development, a research institute housed at Case Western Reserve University's Mandel School of Applied Social Sciences:

<http://neocando.case.edu/cando/index.jsp>

The Ohio Greenprint Gateway is an Internet Mapping Site (IMS) that contains the best available data for the many counties in Ohio, including Cuyahoga:

<http://www.ohiogreenprint.org/>

If the lot is privately owned you need to contact the landowner to find out if they will let you use the land for your project. Get something in writing from the landowner that gives you permission to use the land for a garden.

Soil Testing

Soil testing is an excellent measure of soil fertility. It is a very inexpensive way of maintaining good plant health and maximum crop productivity. With a soil sample and an accurate test, sound fertilizer recommendations can help gardeners and growers improve plant quality and productivity, and save money, too!

In urban soils a concern is lead contamination. Lead from different sources such as from lead-based paint and gasoline, may enter the body through air, food, water, dust, and soil. Lead poisoning is a threat, especially to young children. It is important that your test looks at soil contamination.



Lead Safe Gardening

The Research and Extension Analytical Laboratory (REAL-LAB) run by The Ohio State University was closed in December 1998. However, there are several commercial labs that offer the same or similar tests as were used by the REAL-LAB.

Soil samples can be taken in the spring or fall for established sites. For new sites, soil samples can be taken anytime when the soil is workable. Most people conduct their soil tests in the spring. However, autumn can also be a great time to take soil tests if one wants to avoid the spring rush and suspects a soil pH problem. Fall soil testing will allow you ample time to apply lime to raise the soil pH.

The standard soil test provides the status of the macronutrients and micronutrients in the soil, the soil's pH, and heavy metal contamination. In Section 5, ***Building Healthy Soil***, we will go into the importance of these indicators in more detail.

Garden Preservation

Many community gardens are located on borrowed land. This limits the amount of permanent structures that can be added to a particular site. It may also create an atmosphere of instability among gardeners since the garden could be lost at any moment. A few important steps can be taken to secure the garden's future.

- ☐ **Draft a lease agreement.** It is in everyone's best interest to have a written agreement that outlines your group's and the landlord's obligations and responsibilities and includes a "hold harmless" clause that states that the landlord is not responsible if a gardener is injured on the property. Try to negotiate a lease that enables your group to use the land for at least three years.



Sample Lease Agreement

- ☐ **Investigate local zoning and land use restrictions.** Check out the Cleveland-Cuyahoga County Food Policy Coalition's website (www.CCCFoodPolicy.org) to keep up to date on changes to zoning codes in Cuyahoga County that may benefit urban agriculture.
- ☐ **Liability insurance for community gardens.** In recent years, community gardens have come under increasing pressure to carry liability insurance. Although liability insurance can be quite expensive for individual gardens, larger organizations can often obtain policies for community gardens at a reasonable price or add them to an existing policy. For a more detailed discussion of this issue by Jack Hale, Executive Director of the Knox Parks Foundation, click on the "Insurance for Community Gardens" tab at: communitygarden.org/learn/resources/articles.php.

Part Four

Developing a Site Plan

Just like communities themselves, community gardens can look and feel vastly different from one to another. There can be freedom of expression in a garden design. In this section we will provide best practices for developing a site plan. Be sure to measure the entire planting area to know how much space is available for planting crops.



Southeast Community Garden, Cleveland

How to Approach Developing a Site Plan

Developing a design for your community garden means taking stock of what you already have, brainstorming what you would like to have, and combining the two. Include the entire group in the brainstorming exercise. Some types of features you may want to include are:

- Individual plots
 - A “typical” garden plot for a family or individual may be divided into 10’ by 10’ or 20’ by 20’ squares.
- Communal plots (for fruit, flowers, herbs, tall, or space-greedy crops such as corn and squash)
- Raised accessible beds
- Children’s plots & play areas
- Sitting area
- Picnic/barbeque area
- Compost bins & garbage area
 - Only include common compost areas in your garden design if you plan to designate members to maintain and distribute the compost. Otherwise, encourage gardeners to begin their own pile for their plot.
- Pathways
 - Allow at least 3 feet for walkways around each garden so a wheelbarrow can get through.
 - Mulch walkways with woodchips from local landscapers or check with your local municipality. Gardeners should be responsible for this job. Remember to maintain the borders of the garden too.
- Water systems/strategies
- Natural areas (i.e. butterfly garden, bird habitat)
- Fencing
 - If you cannot afford fencing, ask a fencing contractor to donate used fencing that still might be usable. Or, instead of fencing, plant shrub roses or raspberries as a living border. Fencing is rarely effective in protecting the garden from unwanted visitors.
- Lighting
- Screening of unpleasant views
- Border planting for pollution filtering
- Signage
- Storage shed
 - A tool shed is useful for the garden, but not always necessary. Gardeners can bring their own tools. A large wooden box can be constructed to hold the hoses and hydrant equipment so everyone can have access.
- Bulletin board

Once you have gone through the process of listing what you have and what you need, put it to paper by drawing out a site map. Try a few variations. Also, it is encouraged you walk the site with your plan in mind to see if there are needed alterations.



Sample Garden Designs

How Does Your Garden Grow, Laura Berman, Foodshare Metro Toronto, 1997

Troubleshooting Your Site

The **Site Assessment Checklist** from Page 18 of this guide is a snap shot of what you have to work with on your garden site. Much of your design decisions will be based on what you have. From your assessment, you can start putting the puzzle pieces together. It is important to make a plan for the areas that might not be used for growing space as well. For example:

Site Condition	Possible Use 1	Possible Use 2	Possible Use 3
Full Shade; next to a house or large tree	Gathering area: Picnic tables, seating, etc.	Compost Bins (Out of direct sun will mean less need for watering).	Tool Shed.
Isolated Lead contamination	Flower bed in the ground.	Raised garden beds with a barrier between new and existing soil.	Garbage Area.
Dips in the Soil	Compost Bins (rather than having to fill in).	Wood chip, make a children's play area.	Grade the area for growing (costly).
Patches of concrete, rock, & foundation	Loading area for deliveries.	Build raised beds.	Structures (tool shed, etc.).

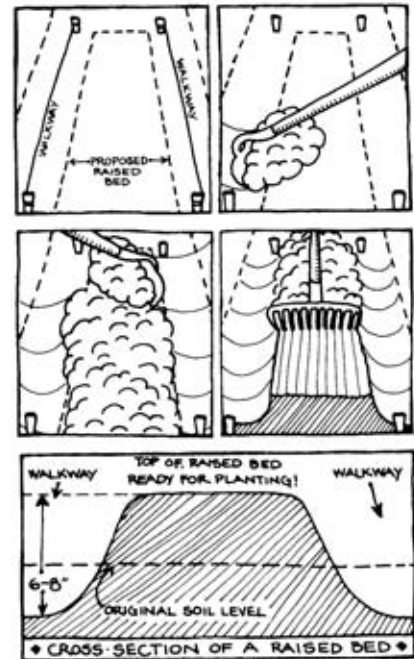
Using Raised Beds in Your Site Plan

You may want to plan on using raised beds in your community garden. Raised beds are simply garden plots built above the existing soil level. They have deeper topsoil for crops to grow in. They warm up faster, drain quickly, and are easier to tend for most people. Raised beds can be mounds or framed, depending on the needs of your garden. Framed beds are convenient for sites with contamination problems or poor soil quality where the existing soil is not usable. For these conditions, use a barrier such as woodchips or cardboard between the existing soil and the new soil.

Building Mound Style Raised Beds

(These work best where a garden is already in place.)

- 1.) Stake off areas where you want the beds to be. Beds should be about 3 feet wide, so you can reach the center.
- 2.) Leave about 2 feet between the beds as walkways.
- 3.) Dig the topsoil from the walkways and throw it on the beds.
- 4.) Rake the soil on the beds so it is level.
- 5.) Work in any compost and fertilizer and the mound is ready to plant.



Building Framed-Style Raised Beds

- 1.) Select lumber that does not rot easily. Cedar, redwood, and cypress are good choices. Treated lumber should not be used because it can have harmful chemicals like arsenic, creosote, or CCA (chrome copper arsenate) that can get into the soil.
- 2.) You will need at least 3 pieces of lumber to allow for two equal sides and one that can be cut in half for the ends. For example, for a 4 by 8 foot bed you need 3 pieces of 8-foot lumber. For a 4 by 10 foot bed you need 2 pieces of 10-foot lumber and one piece of 8-foot lumber.
- 3.) The lumber should be 1 to 2 feet tall, or taller. For taller beds, you will have to use brackets to hold the lumber together.
- 4.) You will need wood screws for exterior use to connect the lumber. They won't rust out.
- 5.) Lay the lumber out where you plan to put the bed. The longer boards go on the sides, the shorter pieces on the ends.
- 6.) Use the screws to connect the corners of the beds so that the frame is free standing. Butt joints can go on the corners for extra support.
- 7.) You now have a freestanding frame. Fill with clean soil and plant!

Garden Beautification

Community gardens are about just that, *community*. In designing and maintaining your site, remember that a community garden should be an asset to a neighborhood and taking steps to improve the look of your site will make relations with others in the area easier.

Early on in your design plan, you must ask yourself (or the group), “What do you want your garden to look like?” Do you want the garden to look neat and orderly? Do you want it to be more free form? Will pathways be grid-like or wavy? Will plots be square or rounded? Once you identify the overall design of your garden, it will be easier to develop a cohesive look.

Once the basic elements of your site are in place, you can start to look at ways to create contrast in your garden. Contrasts in color, height, shape, and texture will make your garden interesting and unique. Varying colors of flowers, fruits, vegetables, and materials will make the site pop out. In addition, the different textures, heights, and shapes of plants, trellises, benches, and other elements will help the garden achieve the beauty in your vision.

Plants play a big role in the look of your garden. A common element of garden design is the use of perennial flowers, vegetables, grasses, and trees. Perennials are plants that will come back year-to-year in contrast to those annual plants that are often in vegetable gardens. Though perennials can be low-maintenance, they also pose some important questions:

- Perennials need a permanent space in the garden.
 - Will you allow them in individual plots? Often they are used in borders or common spaces.
- Perennials are always growing and require dividing and pruning.
 - Who will be responsible for their upkeep?

Using edibles throughout the site in unique ways is often a great way to make the garden vibrant and interactive. Use fruit trees such as apples, pears, plums, and peaches to create borders and height contrast. Another fun way to include edibles in the garden is to create a ‘living fence’ using berry brambles in place of fencing.

Throughout the planning process of how your garden will look, take the changing seasons into consideration. Your fall garden will look vastly different from your summer garden. Research plants that produce and bloom at different times of the year to diversify the look of the garden throughout the seasons.

Part Five

Building Healthy Soil

As a gardener, you will constantly be working your soil to make it more productive. Soil is made up of many things including bits of rock, organic material, fungus, bacteria, insects, and much more. Each year you will be taking a great deal from the soil to grow your plants, so in turn, make sure you take steps to build the soil's health.



Union Avenue Garden, Cleveland
© Don Snyder

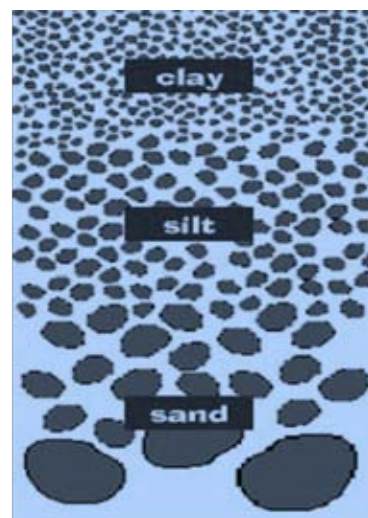
What is soil?

Soil is a living body that consists of minerals, decaying and stabilized organic matter, and living organisms. Soil supports plant life physically and biologically. Physically in that plant roots anchor in soil allowing the plants to stand upright. Biologically in that soil is a home for microbes (bacteria, fungi, algae), worms, insects, animals and nutrients that aid in plant health and development.

According to the National Sustainable Agriculture Information Service, an acre of living topsoil contains approximately 900 pounds of earthworms, 2,400 pounds of fungi, 1,500 pounds of bacteria, 133 pounds of protozoa, 890 pounds of arthropods and algae, and even small mammals in some cases. Therefore, the soil can be viewed as a living community rather than an inert body. This living community in your soil makes nutrients available to plants, improves air flow and water infiltration, and breaks down organic matter.

The three mineral components of soil are different sized pieces of rock. These bits of rock and the spaces between them make up the soil's structure that let air or water through and provides channels for roots to grow. The mineral pieces of soil are **sand** (biggest), **silt** (medium sized), and **clay** (smallest).

Soil pH is the measure of a soil's alkalinity (base) or acidity (acid) on a scale of 0-14. 0-7 are acidic levels, like lemon juice. The pH of 8-14 is alkaline, such as milk or bleach. Most turfgrasses, flowers, ornamental shrubs, vegetables, and fruits grow best in slightly acid soils that represent a pH of 6.1 to 6.9. Soil pH effects plant growth, nutrient availability, organism and microorganism health. Soil tests will tell you the pH of your soil, but you can also test it with a pH soil test kit found at many nurseries.



Most soil nutrients are readily available when soil pH is at 6.5. If the pH is too high or too low the nutrients will not be able to be taken up by the plants so it can't feed itself. The soil test takes the guesswork out of fertilization and is extremely cost effective.

Soil Nutrients

Sixteen chemical elements are known to be important to a plant's growth and survival. The sixteen chemical elements are divided into two main groups: non-mineral and mineral.

Non-Mineral Nutrients

The Non-Mineral Nutrients are hydrogen (H), oxygen (O), and carbon (C). These nutrients are found in the air and water.

In a process called photosynthesis, plants use energy from the sun to change carbon dioxide (CO₂ - carbon and oxygen) and water (H₂O- hydrogen and oxygen) into starches and sugars. These starches and sugars are the plant's food. Photosynthesis means "making things with light."

Since plants get carbon, hydrogen, and oxygen from the air and water, there is little farmers and gardeners can do to control how much of these nutrients a plant can use.

Mineral Nutrients

The 13 mineral nutrients, which come from the soil, are dissolved in water and absorbed through a plant's roots. There are not always enough of these nutrients in the soil to grow a healthy plant. This is why many farmers and gardeners use fertilizers to add the nutrients to the soil.

The mineral nutrients are divided into two groups: **macronutrients** and **micronutrients**.

Macronutrients

Macronutrients can be broken into two more groups: primary and secondary nutrients. The primary nutrients are nitrogen (N), phosphorus (P), and potassium (K). These major nutrients usually are lacking from the soil first because plants use large amounts for their growth and survival.



Soil Macronutrients Guide

The secondary nutrients are calcium (Ca), magnesium (Mg), and sulfur (S). There are usually enough of these nutrients in the soil so fertilization is not always needed. Also, large amounts of Calcium and Magnesium are added when lime is applied to acidic soils. Sulfur is usually found in sufficient amounts from the slow decomposition of soil organic matter, an important reason for not throwing out grass clippings and leaves.

Micronutrients

Micronutrients are those elements essential for plant growth which are needed in only very small (micro) quantities. These elements are sometimes called minor elements or trace elements. The micronutrients are boron (B), copper (Cu), iron (Fe), chloride (Cl), manganese (Mn), molybdenum (Mo) and zinc (Zn). Recycling organic matter, such as grass clippings and tree leaves, is an excellent way of providing micronutrients (as well as macronutrients) to growing plants.

Don't Treat Your Soil Like Dirt!

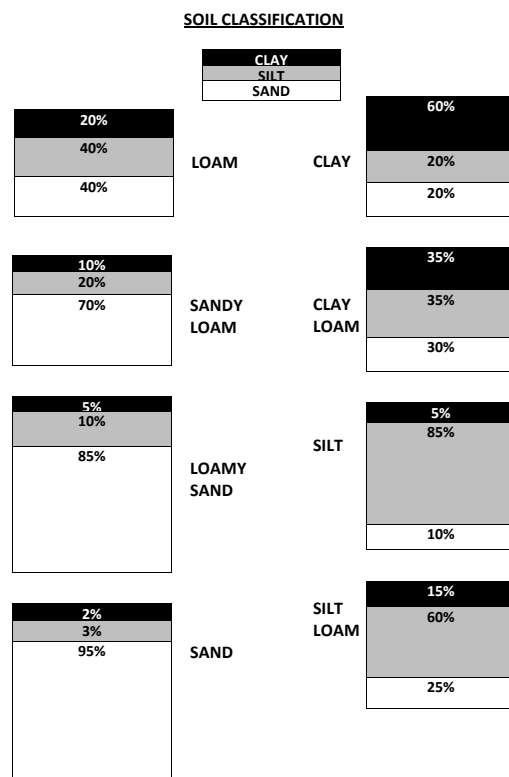
The first step in growing healthy crops is building healthy soil. Soil provides nutrients, moisture, and stability to the plants, so it is very important that community gardeners are stewards of the soil.

What has happened on your site in the past will have tremendous impact on the quality of the soil. Was a house demolished on site? Was it farmed in the past? Had it been an area people dumped garbage? The structure, fertility, drainage, and overall health of the soil rely on some of these answers and so does the way to develop your garden.

Take the time to assess your soil:

- ☐ Check your soil: Dig a small hole at least 8 inches deep. Your plants need at least 6-8 inches of loose topsoil for root growth. If you hit concrete, rocks, or heavily compacted soil, you may have to add organic material, till, or excavate.
- ☐ Perform a soil test to get a snap shot of the site. It is recommended that for the first year of the gardens life that a professional lab analyzes your soil. The reading you receive will be more accurate and give you more information. Also, ensure that the lab you use provides you with levels of contamination, including lead. Lead is a heavy metal present in soils because of past pollution and does pose a threat to human health.
- ☐ There are also low tech, effective methods to assess your soil's structure and drainage capacity. Fill a mason jar with 2 cups of soil from your garden and then fill it 2/3 full with water. Shake the jar vigorously until it is mixed and then let it settle, untouched for at least 24 hours. When you come back you will see particles of sand, silt, and clay have separated into layers from biggest particles (sand) to smallest (clay).

Now look at this soil classification chart to figure out what kind of soil you have. You will probably have to approximate the type of soil. Soils with a lot of clay do not drain well because the particles are small and compact easily. Soils with a lot of sand cannot hold onto water because it flows through them easily (think of the desert). If you have an even concentration of all three (all three are between 20% - 40%), then you have ideal soil for growing vegetables.



Smith, Cat Bowman. Project Seasons, Shelburne Farms. Shelburne: 1995

Making and Using Compost

Composting is a way of recycling organic matter (the decayed remains of plants and other living things). Organic matter is important to the soil structure and it feeds the plants and living organisms in soil. The compost bin should be built and maintained in a way that supports the microbes so they can do their job: decompose. The way we support those microbes is by monitoring these things:

Materials: The microbes live on the carbon (brown materials, such as dried leaves) and nitrogen (green materials, such as grass clippings). There is about 30 times more carbon than nitrogen in plant material. This is the balance that the microbes in a compost pile need to live and do their job.



What Goes Into the Compost Bin?

Surface Area: The more surface area the microbes have to work on the faster the plant material becomes compost. To provide surface area everything that goes into the pile must be cut up, chopped up with a shovel, run over with a lawnmower or shredded by a machine so they are in 6 inch (or smaller) pieces.

Heat and Air Flow: An ideal compost pile is about 3 feet on each side and 3 feet deep. A pile this size will hold the heat in through the winter, keeping the microbes alive. Its center will be warmer than its edges. Larger piles do not let enough air reach the microbes in the center. And they need air. The 3-foot size provides fast, hot composting.

How to build a pile

First, remove the grass from the area you plan to use. This will let the microbes in the soil get to your pile. Your pile will be in three layers.

First layer: 2-4 inches of straw, chopped brush or other coarse material. This will allow air into the pile at the base.

Second Layer: 6-8 inches of food scraps, leaves, grass clippings, other plant material. These materials should be damp. If you squeeze them in your hand it should feel damp like a wrung out sponge.

Third layer: 1 inch of soil. This allows plant space to expand and adds more microbes to the mix.

Keep adding these layers until the pile is about 3 feet deep. Each layer is needed over and over to keep the pile active.

When planning your garden, consider if your site should have a shared compost bin. If so, proper education and signage is key. Consider having a central manager or committee to maintain it.

You may also consider having each gardener compost in their own plot by layering materials individually.

Composting at Home, HYG-1189-99

Using Soil Amendments

Wasting soil amendments and fertilizer could cost you money, hurt the environment, and be harmful to your plants. When using them make sure to *use the right kind, in the right amounts, in the right place, at the right time.*

1. “Right kind” – Choosing amendments accurately

- Match the fertilizer carefully to the specific crops. Use test results for your soil. Usually they will provide recommendations on how to amend your soil.
- Know the nutrition needs of the plants (example: less Nitrogen needs to be applied to beans because they produce their own).
- Look for products that will not harm the environment.

2. “Right amount”- Applying amendments in the right amounts

- Use your soil test to identify what is already in the soil.
- Follow recommendations exactly – over fertilizing can burn the plants.
- Scale down accurately (acres to beds is a big jump!).

3. “Right place” – Making amendments available to the plants

- If the plant can’t get to the fertilizer, it won’t do any good.
- Beds keeps the fertilizer close the where the plants are.
- Phosphorus especially does not move in the soil, so you want it to be incorporated lower in root zone (top 15 cm).

4. “Right time” – Apply amendments when the plants can get them

- Compost, composted manure, and other ‘bulk’ organics are best incorporated as you dig into the soil.
- Synthetics and concentrated organics can be incorporated just before planting and used during the growth of the plants.

When using natural fertilizers, such as compost, many organic gardeners will incorporate additional amendments. Natural amendments can provide a specific nutrient at higher levels that may be lacking in your compost, such as:

Bone meal (4-10-0) for Phosphorus & Nitrogen

Feathermeal (12-0-0) for Nitrogen

Rock phosphate (0-4-0) for Phosphorus

Wood ashes (varies, 0-0-2) for Potassium

Part Six

Get Growing: Crop Selection and Maximizing Harvests

The vegetables you grow in your garden will depend on your personal decisions. Ask yourself, “What do I like to eat?” Vegetables range in taste, appearance, color, pest and disease vulnerability, and much more, so take the time to plan out your garden before you get in the ground.

Plant families share similar characteristics, growing requirements, and pests and diseases. Familiarize yourself with the needs of the crops you grow in order to increase your harvests.



EC Grows, East Cleveland
© Don Snyder

Crop Families and Rotating Crops

It is not a good idea to plant the same crops in the same place every year. Keeping plants on the move from place to place will help the garden in many ways. Some plants use up a lot of the nutrients in soil. Putting them in the same place over and over means they will get less and less of the nutrients they need to grow. Other plants are likely to get diseases that come from the soil. Rotating them around makes diseases less likely.

All plants are part of different families. Keep these families in mind when rotating them around. New plants should go in where plants of a different 'family' were planted the last year.

Here are plants in the same family:

- Onions, leeks, garlic, chives
- Lettuce, endive, salsify, chicory, Jerusalem Artichoke
- Beets, Swiss chard, spinach, lamb's quarters, okra, quinoa
- Pumpkins, squash, zucchini, cucumber, melons, gourds
- All cabbages, cauliflower, Brussels sprouts, kale, collards, kohlrabi, bok choy, turnips, broccoli, mustard greens, rutabaga, radish, horseradish, raab
- Tomato, potato, eggplant, peppers, tomatillo
- Carrots, celery, parsnips, fennel, celeriac, coriander, dill
- Peas, beans, peanuts
- Corn, a family all by itself

Plants should also be rotated by the kind of roots they have. This will help keep soil soft so air and water can get to the roots. Some plants can have shallow roots that don't go very deep. Others have roots moderately deep or deep roots. These plants are grouped by the depth of the roots they have, such as:

Shallow roots: broccoli, Brussels sprouts, cabbages, cauliflower, celery, corn, endive, garlic, leek, lettuce, onion, potato, radish, spinach

Moderately deep roots: beans, beets, carrots, Swiss chard, cucumber, eggplant, peas, peppers, muskmelons (cantaloupe), peppers, rutabaga, summer squash, turnips

Deep roots: lima beans, pumpkin, parsnip, winter squash, sweet potato, tomato, watermelon

***A simple way to rotate crops** is to rotate by what part of the plant you harvest or the different parts of the plant. Rotate vegetables by roots (radishes) , stem (celery) , leaves (spinach) , fruit (tomatoes) , or seeds (peas).

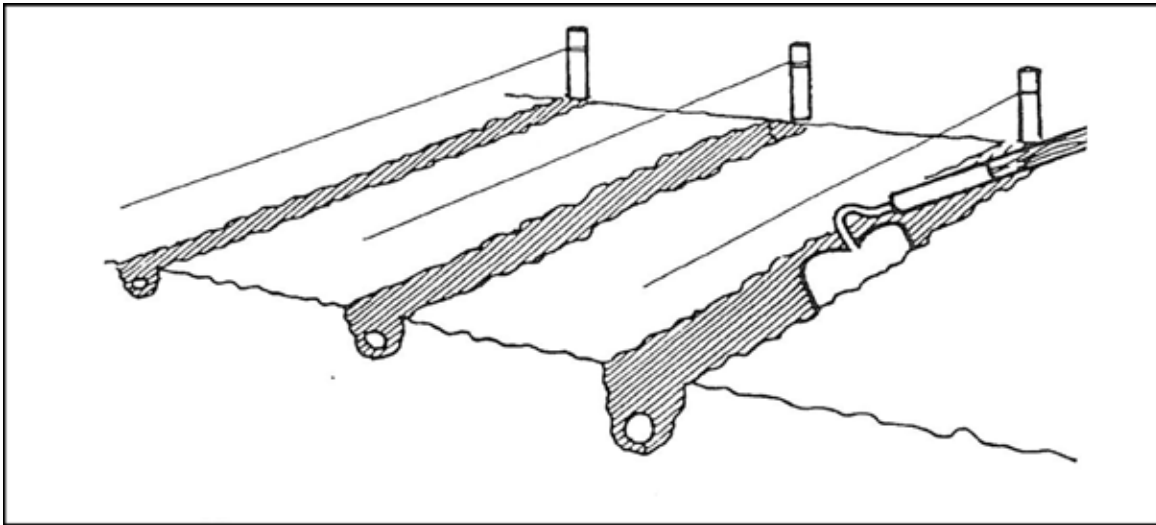


Vegetable Varieties

Spacing Crops

Proper spacing of vegetable plants in the garden is very important to the success of crops. “Crowding” plants, or planting them too close together, makes them compete for resources and will produce spindly, low yielding plants. Also, planting seeds too deep may cause seeds not to germinate (sprout).

A simple way to ensure seeds are planted evenly and at the proper depth is to mark rows with string and make furrows (a shallow trench) with a hoe, as seen here:



Follow the plant spacing instructions with the seed packet or plant since these are most accurate. Below are general spacing requirements for common vegetables.

Planting Depths in Inches

¼ Inch Deep	½ Inch Deep	¾ to 1 Inch Deep	1 to 1 ½ Inch Deep	2 Inches
Bok Choy Carrots Chinese Cabbage Collards Kale Kohlrabi Lettuce Mustard Turnip	Beets Chard Parsnip Radish Rutabaga Spinach	Beans Blackeyed Peas Crowder Peas Cucumber Muskmelon New Zealand – -Spinach Okra Pumpkin Squash Watermelon Zucchini	Corn	English and Snap Peas

Interpreting a Seed Packet

The back of a seed packet lists all the information needed to directly sow seeds in the ground. However, it is sometimes difficult to understand what the instructions are telling you. Below is a description of the information you will see on the packet.

CAULIFLOWER, Early Snowball -- *Brassica oleracea* (Botrytis)
When planted in early spring or late summer so that it can mature in cool weather, this popular cauliflower variety rewards you with large heads of snowy white curds. Enjoy this mild-flavored vegetable raw, steamed or pickled.

Planting Depth	Seed Spacing	Days to Sprout	Spacing After Transplanting	Spacing Between Rows	Days until Harvest
1/2"	2 seeds per pot or cell	5-10	18"	24-36"	60*

*From setting out transplants.

PLANTING: For a spring crop, start seeds indoors 4 to 6 weeks before planting outdoors. Harden off seedlings by putting them outside during the day for 1 week before transplanting. Plant after danger of a hard spring frost is past. For a fall crop, transplant seedlings into the garden in mid to late summer. Before transplanting, enrich the soil with compost.

GROWING: To avoid disease problems, don't plant where cauliflower or related plants grew within the last 2 years. Water regularly and fertilize monthly. When the head begins to form, tie the outer leaves up over the top of the head to "blanch" it (make the curds white).

HARVESTING: Cut the stem just below the central head while the flower buds are small and tight.



The Latin name isn't always given but it's a good idea to note the family name for rotation purposes. Brassica is the genus name, oleracea is the species.

1) **Planting Depth** - When we make a trench to lay our seeds, the distance from the soil line to the bottom of the trench is the planting depth.

2) **Seed Spacing** – Refers to distance in the trench between seeds. With carrots it's 3-4 per inch. Don't over seed. It makes thinning later more difficult.

3) **Days to Sprout or Days to Germination** refers to the length of time between when a seed is first planted and when it first appears above ground.

4) **Spacing after Transplanting or Plant Spacing** refers to the distance between plants once all thinning and transplanting has been done.

5) **Row Spacing** refers to the distance between the rows.

6) **Days Until Harvest or Days to Maturity** is the time it takes to go from sprout to table. Count this duration from the day of germination, or the day of transplant (planting a seedling) depending on whether you direct sow or plant pre-sprouted seedlings.

Let's take cauliflower as an example. (See the seed pack at the top of this page.) If you want to get an early start on the growing season, you may choose to plant cauliflower seeds indoors in order to get seedlings for subsequent planting outdoors. This seed pack assumes you will do this. If you choose to plant directly, you will need to take the initial growth (4-6 weeks) into account. If you simply plant cauliflower seeds directly in the ground outdoors, the days until harvest or maturity will be 88-102 days. This includes the 60 days in addition to the 4-6 week time period (28-42 days) for initial growth.

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Scarlet Nantes

CARROT

The classic flavor favorite. Almost coreless, 6-inch roots with bright red-orange color throughout. Crisp texture and an abundant producer. Keeps and freezes well. Harvest in 55 days. Packet plants 40 ft.

					
Light	Row Spacing	Plant Spacing	Planting Depth	Days to Germination	Plant Height
Full Sun	12 in.	2 in.	1/2-3/4 in.	14-21	12-18 in.

Gardener's Notes: Sow seed directly in the garden in spring. Carrots need light, well-drained, sandy soil. Sprinkle seeds evenly in the row, about 3-4 per inch. Keep soil moist during germination and growth. Thin young seedlings. Sow every 2-3 weeks until early summer for continuous supply. Harvest when rounded, orange tops appear. For easier harvest, loosen soil. In mild climates, plant again in fall and winter.

Crop Planting Guide by Season

Vegetable plants differ in their temperature needs from family to family. This affects the crop's growing season. Just like how a tomato will not grow in Cleveland in January, spinach, a cold loving plant, will not farewell in the heat of July. Crops can be categorized into three types:

- **Tender Crops** are damaged by light frost (29 degrees F to 32 degrees F).
- **Semi-Hardy Crops** tolerate a light frost.
- **Hardy Crops** tolerate a hard frost (25 degrees F to 28 degrees F).



Planting Calendar

Below is a list of plants that do well in our climate by season. When planning what you will plant, plan by season what will follow once one crop is harvested.

Early Spring Garden <u>Plant Mid-March to Mid-April</u>	Spring Garden <u>Plant Mid-April to Mid-May</u>	Summer Garden <u>Plant Mid-May to Mid-July</u>	Fall Garden <u>Plant in August</u>
<ul style="list-style-type: none"> • English or snap peas • garlic cloves • onion seeds, sets, or plants • spinach 	<ul style="list-style-type: none"> • asparagus crowns • dwarf snap peas • beets • bok choy • broccoli plants • cabbage plants • carrots • kale • kohlrabi • leaf lettuce • mustard or collard greens • onion sets or plants • seed potato • radish • rhubarb crowns • spinach • strawberry plants • Swiss chard • turnip 	<ul style="list-style-type: none"> • beans • beets • Brussels sprout plants • cabbage plants • carrots • celery plants • Chinese cabbage • collards • cucumbers • eggplant plants • muskmelon • okra • pepper plants • pumpkins • New Zealand spinach • squash • sweet potato plants • Swiss chard • tomato plants • watermelon 	<ul style="list-style-type: none"> • bush snap beans (first week) • beets • bok choy • broccoli plants (1st 2 weeks) • early cabbage plants (1st 2 weeks) • cauliflower plants (1st 2 weeks) • Chinese cabbage greens • kale • kohlrabi • leaf lettuce • mustard • radish • snap peas (early August) • spinach (end of August) • Swiss chard • turnip • zucchini • garlic

Part Seven

Life In The Garden

A community garden can be an oasis of biodiversity. This section will introduce you to Integrated Pest Management (IPM), a way of keeping the garden free of unwanted pests without jeopardizing the health of your garden. Learn how to identify good bugs and bad bugs, spot diseases, and use chemicals only as a last resort.



Photo courtesy of www.ourOhio.org
Buckeye Lady Beetle Blitz

Integrated Pest Management

Overview

Integrated Pest Management (IPM) is the name given to the practice of using a combination of treatment methods to keep pests from ruining a crop. With IPM, the term "treatment" does not always imply the use of a chemical control. Non-chemical pest control strategies include cultural, mechanical, and biology controls as well as good sanitary practices. Most of these controls are used as preventive measures in an attempt to help keep pests below critical levels. However, certain conditions can still allow a pest population to build up to injurious levels. If this should occur, a rescue treatment can be used to reduce the population of the pest and rescue the crop.

At the heart of IPM is the understanding that many crops can tolerate a certain amount of pest damage. As a result, a rescue treatment is not needed until the pest population reaches a critical level usually referred to as a threshold. In the home vegetable garden, this threshold may be economic, but is more likely to be aesthetic. A commercial grower's produce must be blemish free (or nearly so) for fresh market. If a cabbage is found to have holes in the leaves from insect feeding, it will probably be culled or sold at a lower price, making the threshold economic. On the other hand, the threshold for home grown vegetables is often dependent on an individual gardener's tolerance to the damage.

Thresholds for the different pests may vary greatly. In the case of the striped or spotted cucumber beetle, a pest on melons and cucumber plants and a vector of bacterial wilt disease, the threshold is only one actively feeding beetle in the entire planting. Conversely, the threshold for aphids on silking sweet corn is an average of fifty or more aphids per plant. Because the same pest may affect different plants in different ways, the threshold for a certain insect on one crop may not be the same for another crop.

Scouting the Garden

To evaluate the effectiveness of preventive measures and the possible need for a rescue treatment, the gardener should scout the garden on a regular basis, at least once per week or more often if time permits.

The first step in scouting is to identify the pest. The next is to learn about the pest's habits and life cycle, allowing you to plan the most appropriate management strategy. This is evident when working with Colorado potato beetles. When the beetle larvae have just hatched, certain types of insecticide may be used with good results; if the beetle larvae are any larger, then another type of treatment will need to be used for control.

Scouting a garden is done by examining a representative sample of each crop to determine the average infestation level. The number of plants to examine can vary according to the type of crop and size of the planting. You may look at all of the plants of a crop if there are only five or six in the planting, or you may look at a sample of 10 plants if there are as many as 50 or more plants per crop. Probably the best rule to go by for the average home garden is to examine enough plants to feel comfortable that you know what pests are present and how much damage is being done.

Integrated Pest Management

When examining plants it is important to look at them closely. By doing so you will be able to see the egg masses or small larvae that are present before damage is evident. All parts of the plant should be examined, even if they are not parts that will be harvested. Pests may be found on the underside of leaves, on top of leaves, on stems, in stems, in buds, or on developing fruit. For example, even though the pods of a bean plant may not show feeding damage from a bean leaf beetle, the damage the beetle does to the leaves can still cause a reduction in the yield of the plant and the quality of the bean. It is only by thorough scouting that you will truly know what is going on in your garden.

Not all insects found in the garden are pests. Lady beetles, lacewings, mantids, parasitic wasps, and soldier beetles are just a few of the beneficial insects that may be found. Observing beneficial insects as well as the pests should be part of the scouting program. Ideally, a healthy balance of beneficial insects and pests should be present. Spraying a pest to the point of eradication should not be a goal. Doing so may kill the beneficial insects as well, or cause them to migrate to other areas where prey is available. In either situation, pest populations will generally reestablish more quickly than beneficial insects. This can then result in unchecked plant damage as the pest population builds up. Therefore, the presence or absence of a healthy population of beneficial insects, or pests showing the effects of parasites, should be taken into account when determining the need for a rescue treatment.

Control Measures

Cultural Control

Crop rotation is one of the most simple yet effective types of control for diseases and for insects that have a single generation each year. This involves planting a crop in an area of the garden where it (or a related crop) has not been grown for at least one year.

When a crop is grown in the same spot year after year, insects and disease organisms can become established in the soil. This can result in a more rapid infestation of pests each year. Rotating even a short distance from the previous site can help to deter, delay or avoid damage.

Proper fertility and selection of varieties of plants that are resistant to diseases are also important parts of an IPM program. Plants that are healthy and vigorous are able to withstand pest pressure better than stressed plants.

The use of a trap crop can be a control in itself or used in combination with the use of chemical or mechanical controls. A trap crop, which is usually planted around the crop to be protected, can be any plant known to be highly attractive to a pest. One example is to leave a patch of smart weed at the end of the garden to draw away the Japanese beetle. Once the trap crop is infested, the trap crop may be sprayed to kill the insect, or the insects can be hand picked, or the insects may be left to feed on the trap crop.

Mechanical Control

Several types of barriers may be used to protect a crop. Row covers, which allow for the penetration of sunlight and the movement of air and moisture (but not insects), can be used to protect a crop from migrating insects. If crop rotation is not used, however, this type of cover can trap insects in the soil with the crop, creating a false sense of security. Collars made of paper plates, aluminum pans and tin cans can also be placed around the bases of individual plants to protect the upper plant parts from crawling insects, such as cutworms that live in the soil, or to protect the stem base from egg-laying by the cabbage maggot fly.

Several types of traps are also available for pest control or monitoring. Traps that attract an insect by color (usually yellow or white) may be cards covered with a sticky substance or colored bowls filled with soapy water. Other traps use a scent or "pheromone" to attract the pest to a sticky surface or an enclosure. Traps such as these should not be relied on to control insects in an open area, but should be used more as an indicator of the pest's presence.

Mechanical control also includes simple removal of a pest by hand.

Sanitary Control

Removal of overripe produce will help in preventing the movement of scavenger type insects, such as the picnic beetle, into the garden. Complete removal of disease infested plants can also sometimes help in preventing further spread of the disease. This involves taking the diseased plant completely out of the garden area, not just pulling it and leaving it in the area. For plants that are susceptible to tobacco mosaic virus, the banning of all smoking or chewing tobacco products from the garden area is an important practice.

Biological Control

Biological control relies on naturally occurring organisms. In some instances this may be a fungus or bacterium that attacks the pest when weather conditions are right. It can also be the action of beneficial insects and parasites. The lady beetle and its larvae are well known for their habits of feeding on aphids.

If beneficial insects do not seem to be present, they can be purchased commercially. The success of this approach depends on which type of predator is purchased. Lacewings sold as eggs or pre-fed larvae can be effective for controlling aphids and other small pests. Lady beetle adults collected and shipped in from distant states seem to be of lesser value for pest control than local populations, making their purchase uneconomical.

To attract and preserve a population of local beneficial insects, grow flowers such as dill and angelica (even a few dandelions and wild carrot), and protect the eggs and larvae that are already present on the plants by spraying insecticides only when necessary.

Chemical Control

If a pest population reaches threshold levels despite preventive measures and other types of controls, chemicals may be the last resort as a rescue treatment. Even chemicals are not a foolproof way of controlling pests. If the pest is too far along in its growth cycle or has built up a resistance to a pesticide, use of a chemical may do more harm than good. The squash bug, for example, can be controlled with a chemical in its younger stages, but is difficult to control chemically in its adult stage. Repeated spraying to try to control it at this stage may only result in killing the beneficial insects present. In a situation such as this, the grower of a small planting of squash would be better off removing the bugs and egg masses by hand.

Toxicity of any type of pesticide to mammals can be high (for products such as rotenone or diazinon), or low (for products such as B.t.), or anywhere in between. Botanical and biological pesticides tend to break down more rapidly than conventional pesticides. This can be favorable in that the insecticide is in the environment for a shorter period of time, but it also offers a shorter period of protection for the plant.

Insecticidal soaps and oils are often considered as part of an organic pest control program. Oils work on the basis of suffocation of the insect and its eggs. Soaps are used as desiccants on soft bodied insects. Both need to come into direct contact with the insect to be effective. Care should be taken when using these products to avoid damage to sensitive plants. Plants are usually more sensitive to soaps and oils when they are under stress from high temperatures.

If a pesticide is needed for a rescue treatment, regardless of what type, be sure to follow the directions on the label. Do not apply at higher rates than directed on the label or use on crops that are not listed on the label. Also be certain to wear protective clothing as required by the label and observe re-entry and pre-harvest limitations.

Integrated Control

Control strategies listed here can be used for common vegetable pests. These strategies may be used individually, but they offer better chance of success when combined in an integrated pest management program.



Common Pests in Ohio Home Vegetable Gardens

Part Eight

Growing Goodwill

Community gardens are as much about relationships as they are gardening. How decisions are made among members is important and can be critical to the longevity of a garden. Learn how to build consensus among members, identify individual's talents, delegate responsibilities, and be a good neighbor. By building a strong foundation, you'll be ready to face any challenges that may arise.



Community Gardeners & Urban Farmers of Cuyahoga County, © Don Snyder

Inspiring Leadership

Community Leaders often display these characteristics:

- Vision
- Respect
- Creative problem-solving
- Critical Thinking
- Trustworthy & trusting
- Confident
- Motivated and reliable

When establishing leadership in the garden, these are qualities you will want to look for. Just because a person may not be the strongest gardener does not mean they will not be a strong leader. Providing opportunities for leaders to come forward will allow individuals to share their own special talents.

Top 10 Tips for Modeling Leadership

1. Set realistic expectations.
2. Divide-up and delegate work.
3. Show appreciation for work well done.
4. Be organized!
5. Welcome criticism.
6. Help people believe in themselves.
7. Inspire trust.
8. Herald a greater purpose.
9. Convince others they can lead.
10. Create structures that increase skills and support accountability.

Suggested Guidelines for Meeting Discussion

- Listen to Others.
- Don't Interrupt.
- Ask clarifying questions.
- Welcome new ideas.
- Start on time.
- Disagree with ideas, not people.
- Treat every contribution as valuable.

The Consensus Process

A consensus process aims at bringing the group to mutual agreement by addressing all concerns. It does not require unanimity. In some cases, consensus can take longer than other processes, but it fosters creativity, cooperation, and commitment to final decisions.

Consensus asks us to step out of our narrow personal agendas and to make decisions that are in the interest of the whole group. This is not to say that personal concerns are left out of the processes. Agendas of individuals impact the whole group and are taken into consideration during the discussion portion of the process. Someone who has a personal concern with a proposal but who has had their issues deliberated on by the group and feels they can live with the decision can allow a decision to be made by “standing aside.” A “block” is a person's way of disallowing a decision. A block is only used when a person has a strong moral disagreement or thinks that the decision will fundamentally damage the group. This is not a step to be taken lightly.

The steps on consensus are:

1. **State the issue.** What are we talking about? The Facilitator asks the person who brought the issue to the group to frame the issue.
2. **Clarify the question.** What needs to be decided? The facilitator or the framer states what needs decided.
3. **Discussion.** What are all the viewpoints? The facilitator asks each person to speak on the issue.
4. **Make a proposal.** The facilitator asks for proposals describing action that the group can take that incorporates all viewpoints.
5. **Discussion.** The facilitator asks people to speak to proposals by asking clarifying questions or by expressing support or concerns.
6. **Modify the proposal** by friendly amendments or withdraw the proposal and solicit a new one.
7. **Test for consensus.**
 - a. **Call for concerns** – The facilitator restates the proposal and asks if anyone still has concerns. If so, the person with concerns is asked to restate them and others speak to those concerns.
 - b. **Call for objections within consensus** – If people still have concerns even after they have been thoroughly discussed, the facilitator asks if those persons with remaining concerns are willing to stand aside. (“I think I don’t agree, but I can live with it.”)
 - c. **Call for blocks** – If persons with concerns cannot stand aside then the facilitator asks if they are blocking. If blocked, the proposal is dropped or discussed further or sent to committee.
8. **Consensus is reached.** If there are no blocks, ask everyone to show visual (hand waving) or oral agreement.
9. **Decision Implemented.** Who does what when?

Gaining Community Support

Reasons for supporting a community garden project:

- A garden is a non-threatening place for interaction among people of ages, cultures, income levels and physical and mental abilities.
- It is an on-going project that, after the initial start-up phase, can be sustained primarily by the will of the community rather than by outside agencies or experts. It requires relatively few funds compared to other outdoor activities.
- The process can involve a wide range of skills, allowing even non- gardeners to be involved.
- A garden can continue to grow and change in form, offering challenges and opportunities for its participants along the way.
- The space in which a garden is created is safe and controlled by the residents themselves.
- Visual changes can happen in the short term, unlike housing or economic development projects, which can take years to realize.
- Through the process of creating a natural environment and caring for living things, people learn to step outside of themselves and feel the pride of giving something beautiful to their community.

Ideas for Getting People Involved in Garden:

- **Let people know the benefits** – Let people know that developing a garden empowers people of all ages and abilities to participate and contribute something positive to the community and that they can make a difference.
- **Word of mouth** – Talk to neighborhood friends and anyone passing by the garden project about how they can become involved.
- **Use established institutions** – Talk to groups already invested in the community, such as church groups, community centers, boys' and girls' clubs, local council representatives, schools, garden clubs and businesses, to let them know about new developments with your community garden and how they can get involved in garden activities.
- **Post contact information** – Create garden signs (in all languages in your neighborhood) and pass out flyers listing the location of the garden, the contact person, meeting times and recent garden developments.
- **Connect with community** – Post your community garden flyers at local churches, community centers, libraries, schools, corner stores and other public locations.
- **Neighborhood libraries** – Maybe your local library has a display box. Use that space to tell the story of your community garden and how folks can get involved.

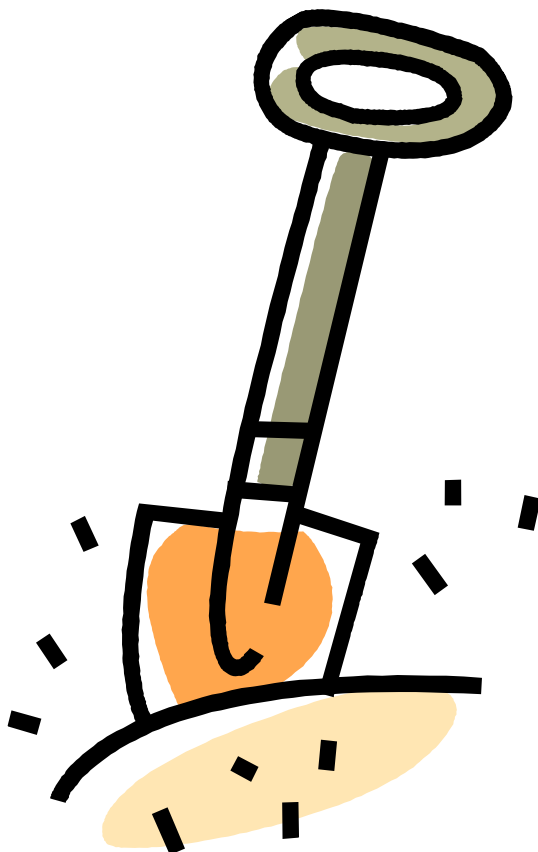
Security:

There is always concern about theft and vandalism in community gardens. You can ask neighbors to keep an eye on the garden. Sharing what you grow with them will give them a reason to care about the garden. Report major vandalism and theft to the police. Ask police to drive by when they can. Pick often at the peak of the season, 2-3 times a week. Grow more than you need so some loss won't hurt too much. If the garden has a fence with a gate, consider keeping it locked at all times, even when working in the garden.

Adapted from: Sustainable Resource Center, Urban Lands Program's Training Manual, p.2-9, 1999.


Appendix

Digging Deeper



Use this toolbox for creating your community garden. Tailor these forms and resources to fit your unique project needs.



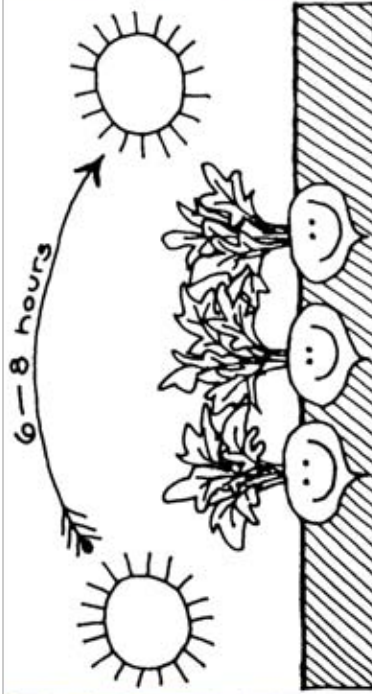
Look for the  shovel symbol throughout the guide to “dig deeper” into one of the appendix pages.



Sample Flyer

**Would you like a place to grow
your own nutritious produce?
Meet your neighbors?
Share and learn gardening
skills?**

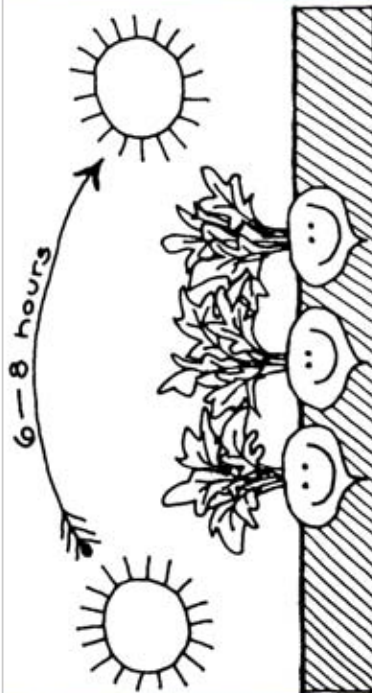
A group of residents are working to start a community garden in Maple Heights at Stafford Park. A limited number of plots are available to community members interested in vegetable gardening in this space. Plots will be assigned on a first come, first served basis.



Please contact Jackie or Bobbie (include phone #'s here!) to sign up or for more information.

**Would you like a place to grow
your own nutritious produce?
Meet your neighbors?
Share and learn gardening
skills?**

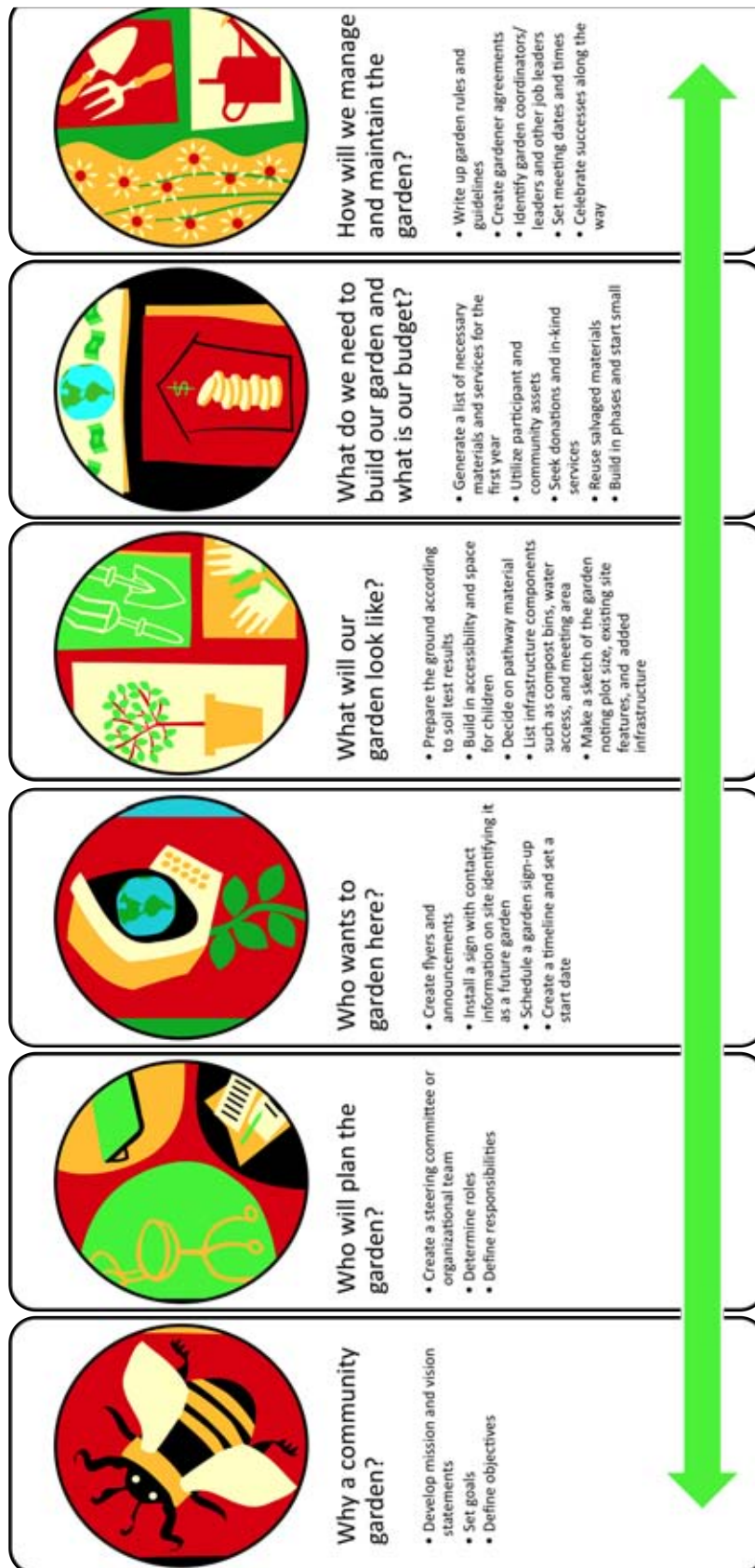
A group of residents are working to start a community garden in Maple Heights at Stafford Park. A limited number of plots are available to community members interested in vegetable gardening in this space. Plots will be assigned on a first come, first served basis.



Please contact Jackie or Bobbie (include phone #'s!) to sign up or for more information.



Making community garden decisions





Sample Garden Rules

- Ten hours of community work is required, more if you can. If work is not done, gardener can pay \$3 for each hour not done and will not get a plot again.
- No dogs, alcohol, drugs, or firearms allowed.
- Plots not worked for 2 weeks after being assigned will be given away. Any plot not cared for in two weeks may be given away. If you are ill or for some other reason cannot work your plot, ask the coordinator for help. Ask gardeners to water, weed and harvest your plot if on vacation. Do the same for others.
- Weeds must be cleaned from plots. Put in trash or cut up for composting.
- If you bring bottles, cans, or food containers to the garden take them home with you.
- Trash goes in trash containers.
- Keep your planting well within your plot. Plant tall plants in the center so you don't shade your neighbor's plots.
- No unattended children are allowed in the garden.
- Anyone caught stealing or helping others steal will be put out of the garden.
- All stakes, string, cages and large plants must be cleared off your plot at the end of the season. You may be charged a cleanup fee on next year's plot fee if you do not clear your plot.
- Tools must be returned to storage area after use.
- (If an organic garden) No weed killers, bug killers or chemical fertilizers are allowed.

(The planning committee can change and add to this as for the benefit of their garden.)



Sample Application

Name _____ Date _____

Street Address _____

City _____ Zip Code _____

Home Phone _____ Work Phone _____

If you were a gardener last year, do you want the same plot?
_____ Yes _____ No If no, what general area of the site would you like?

Please check **three** areas you are willing to work during the season.

Each gardener is expected to work _____ hours during the season to help with the general care of the garden. This is in addition to helping on a committee.

_____ Site maintenance _____ Construction projects

_____ Phone Calls _____ Mailings

_____ Flower plantings _____ Pathway care

_____ Staking Plots _____ Assigning plots

_____ Composting _____ Trash removal

A plot fee of \$_____ is due before the plot is assigned.

I have read the community garden rules. I understand that breaking the rules means I could mean I lose my garden. **I also agree that no garden volunteers or the landowner are liable for any harm that may come to me at the garden.**

Sign here _____ Date _____

All signup forms must be in by _____ to hold last year's plot. If form is not in by this date, you lose your plot and may be placed on the waiting list.

Kept on file by membership committee

Adapted from the "Community Gardening Toolkit", Bill McKelvey, MU Extension Associate



Sample Lease Agreement/Permission for Land Use

The following form is intended as a guide only; be sure that the final agreement you use meets the needs and details of your group and the property owner. It may be helpful to include a quick sketch of the property, including the garden area and any existing structures or uses.

I, _____ give permission to
(property owner's name)
_____ to use the property located
(community garden project)
at _____ as a community garden
(site's street address and Permanent Parcel Number - PPN)
project for the term of _____ years beginning _____ and ending _____.
(start date) (end date)

This agreement may be renewed with the approval of both the property owner and the community garden organization at the end of the agreement period. All questions about the community garden, its nature, and risks or hazards, have been discussed with the garden coordinator to my satisfaction.

The community garden agrees to indemnify and hold harmless the property owner from all damages and claims arising out of any act, omission, or neglect by the community garden, and from any and all actions or causes of action arising from the community garden's occupation or use of the property.

As the property owner, I agree to notify the community gardening organization of any change in land ownership, development, or use 60 days prior to the change in status.

Property Owner's signature

Date



Sample Waiver Form

WAIVER FORM

RELEASE OF CLAIMS

I am duly aware of the risks and hazards that may arise through participation in Ohio State University Extension's Suburban Community Gardening Program and assume any expenses and liabilities I incur in the event of an accident, illness, or other incapacity. If I have had any questions about the Suburban Community Gardening Program, its nature, risks, or hazards, I have contacted the urban agriculture staff of Ohio University Extension in Cuyahoga County and discussed those questions with him or her to my satisfaction.

In consideration of being granted the opportunity to participate in the Suburban Community Gardening Program, I, for myself, my executors, administrators, agents, and assigns, do hereby release and forever discharge the Ohio State University, and its Board of Trustees, administrators, employees, servants, agents, assigns, and officers and the cooperating landowner for all claims and damages, demands, and any actions whatsoever, including those based on negligence, in any manner arising out of my participation in this activity. I understand that this release means that, among other things, I am giving up my right to sue Ohio State University and cooperating landowner for any such losses, damages, injury, or costs that I may incur.

Please Print

Name: _____

Street Address: _____

City: _____ Zip: _____ Phone: _____

Signature: _____ Date: _____

On behalf of _____ participants
(Garden Name)

Ohio State University Extension

Cuyahoga County
9127 Miles Avenue
Cleveland, OH 44105





Example Committee Job Descriptions

Garden Design

- Measure the entire space.
- Decide how much will be garden plots.
- Map out plots.
- Map out walkways around gardens.
- Plan for outside border: fence, hedges, other.
- Set aside a compost area.
- Place signs, bulletin board, storage containers.
- Do something to make your garden standout.

Site Preparation

- Clear the land.
- Plow or till.
- Do soil testing.
- Lay out and stake plots.
- Assign plots to gardeners.
- Keep a plot map with gardeners' names.
- Arrange water for the site.

Membership Committee

- Sign up gardeners and keep their forms.
- Collect fees for plots if charging.
- Give all fees to treasurer.
- Keep a list of all names, addresses, phone numbers, e-mail if used.
- Notify gardeners of meetings and special events.
- Recruit new gardeners and maintain a waiting list if necessary.

Rules Committee

- Draw up a set of rules for the garden.
- Have rules voted on at the first gardener's meeting each year.
- Ensure all gardeners have a copy of the rules and keep them up to date.



Example Committee Job Descriptions

Finance Committee

- Oversee the treasurer.
- Set plot fees, usually \$5 to \$25.
- Ensure all funds raised and spent are accounted for.
- Work with treasurer to develop a budget for the garden.
- Approve all spending.
- Seek funds for special purchases for the garden.

Site Maintenance

- List common area upkeep needs.
- Set community hours each gardener needs to do.
- Keep a list of what gardeners plan to do.
- Plan record keeping system for recording community hours.
- Monitor work done and hours completed.
- Provide for trash removal.
- Manage compost.

Special Events/Community Outreach

- Organize required cleanup day.
- Hold potlucks and invite neighbors and community leaders.
- Host an open house and garden tour.
- Put out a newsletter/report about the garden. How many gardeners are there? What is growing?

Supplies

- Arrange for delivery or pickup of donated supplies such as wood chips, plants seeds, and garden soil.



Sample Garden Roster

To be shared with everyone once plot assignments have been confirmed.

The following are members of our community garden:

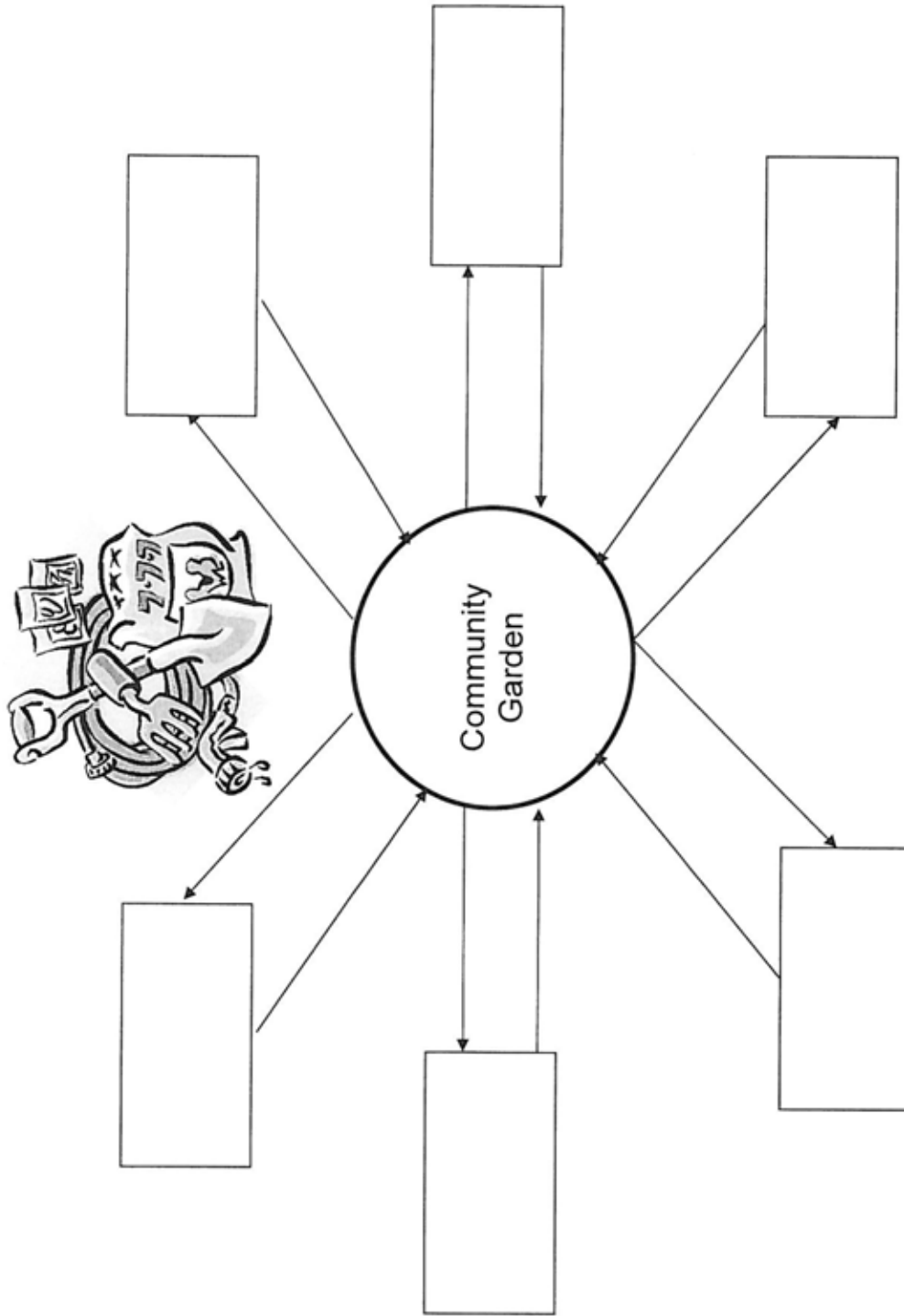
Name	Email	Phone	Plot Number



Sample Plot Assignment Map

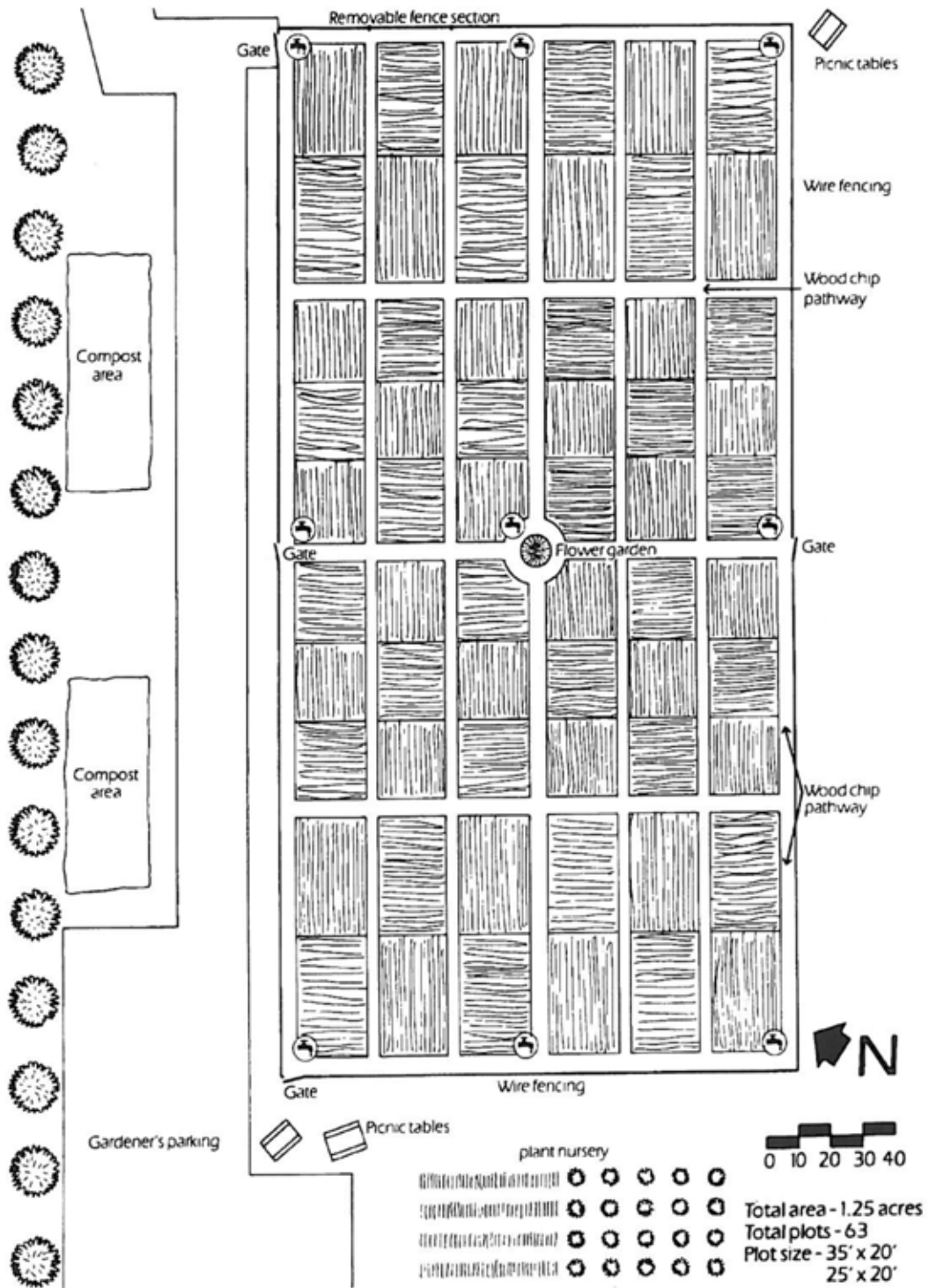
	A	B	C	D	E
1					
2					
3					
4					
5					
6					
7					

Mapping Reciprocal Partnerships



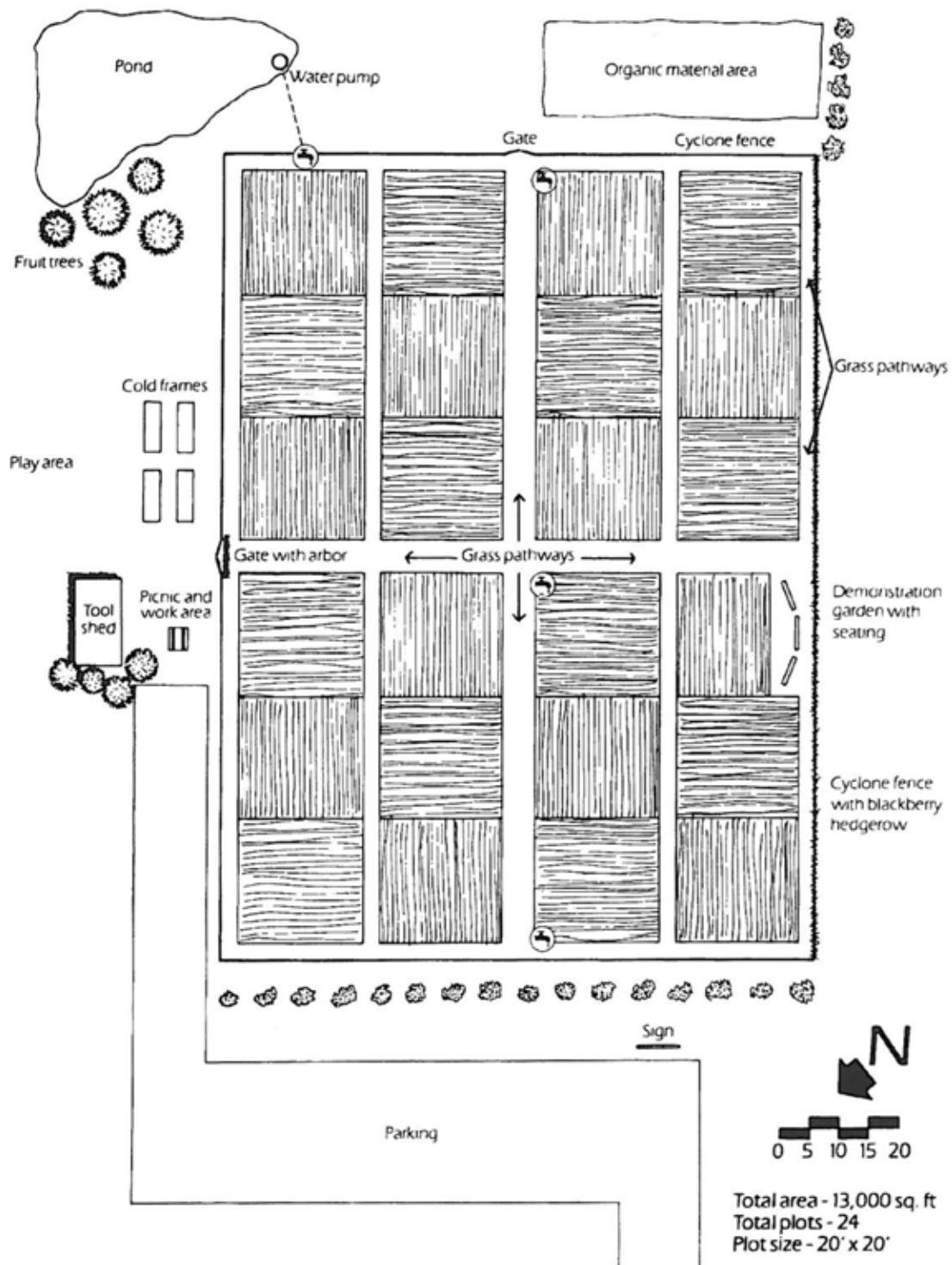


Sample Garden Design





Sample Garden Design





Soil Macronutrients Guide

Plants will show signs when they have too much or too little of a certain nutrient. Use the plant's symptoms to diagnose imbalances. Most can be remedied with simple soil amendments.

Nutrient	Function of the Nutrient	Plant symptoms when deficient
Nitrogen (N)	<ul style="list-style-type: none">-Nitrogen is a part of all living cells and is a necessary part of all proteins, enzymes and metabolic processes involved in the synthesis and transfer of energy.-Nitrogen is a part of chlorophyll, the green pigment of the plant that is responsible for photosynthesis.-Helps plants with rapid growth, increasing seed and fruit production and improving the quality of leaf and forage crops.-Nitrogen often comes from fertilizer application and from the air (Legumes get their N from the atmosphere. Water or rainfall contributes very little nitrogen.)	<ul style="list-style-type: none">-Stunted, yellowing from older to younger leaves and leaf tip back to petiole.-Reduced size. Slow stunted growth
Phosphorus (P)	<ul style="list-style-type: none">-Like nitrogen, phosphorus (P) is an essential part of the process of photosynthesis; it's involved in the formation of all oils, sugars, starches, etc.-Helps with the transformation of solar energy into chemical energy; proper plant maturation; withstanding stress.-Effects rapid growth.-Encourages blooming and root growth.-Phosphorus often comes from fertilizer, bone meal, and superphosphate.	<ul style="list-style-type: none">-Stunted, short internodes, purple or dark green foliage; old leaves.-Die back; flowers and fruit will be poor.-Slow growth, delayed maturity.
Potassium (K)	<ul style="list-style-type: none">-Potassium is absorbed by plants in larger amounts than any other mineral element except nitrogen and, in some cases, calcium.-Helps in the building of protein, photosynthesis, fruit quality and reduction of diseases.-Potassium is supplied to plants by soil minerals, organic materials, and fertilizer.	<ul style="list-style-type: none">-Older leaves will look scorched on the edges.-Weak stem.-Fruit may be shriveled or have uneven ripening.



Lead Safe Living

What is lead poisoning?

Lead poisoning happens when lead enters the body. It can make kids and adults sick.

There is no safe level for lead. Children or adults may get sick from eating vegetables that are grown in soil that has lead.

What are the problems that lead may cause? Lead may cause problems with learning and behavior in children. It may also cause high blood pressure, fatigue, joint pain, nerve damage, and memory problems in adults.

Do we have lead in our soil?

Soil in Cleveland may have high levels of lead because of past use of leaded gasoline and old paint from houses.

How does lead get from the garden and into my body? Lead can get into the body from soil on the produce and carried in by dust. Some lead can be taken up from the soil into the plants or carried in by dust.

Why should I worry about lead?

Lead poisoning is a common problem in Cleveland. If you or your child eats vegetables or dust with lead, it could lead to problems that may last a lifetime.

8 Tips to grow food safe from lead

#1 Test your soil- A soil test can tell you if your garden is safe to grow food.

#2 Know what to grow- Veggies like tomatoes, cucumbers, peppers, squash and other fruits are the safest to grow; they don't take in much lead. You can also peel them to get rid of lead dust on the skin.

#3 Wash your fruits & veggies- Wash veggies with soapy water or 2.5 tablespoons of vinegar to a gallon of water. It will take off lead dust!

#4 Watch your kids- Let your kids play in clean soil. Don't let kids eat dirt—wash hands and toys often.

#5 Build a raised bed- You can build a box of clean soil above the ground to plant fruit & veggies. Learn more about building raised beds at your local library branch.

#6 Grow in containers- Use pots and buckets for safe gardening and fill with clean soil. Herbs, lettuces and radishes can grow in pots as small as 6 inches wide and 8 inches deep.

#7 Cover bare soil- Use wood chips, gravel or grass to reduce lead dust.

#8 Wash your hands often- Use soap and warm water to remove dirt & lead dust from hands!

Lead Safe Living & Healthy Homes Program

75 Erieview Plaza, 3rd Floor Cleveland, OH 44114 (216) 664-2175 phone (216) 664-3353 fax

www.clevelandhealth.org

For information about Lead Safe Living and soil testing in the City of Cleveland call the hotline:
(216) 263-5323 (LEAD)



What Goes In The Compost Bin?

To build a compost pile, simply alternate layers of browns and greens.

Greens (High Nitrogen):

- * Vegetable and food scraps
- * Fresh grass clippings and yard waste
- * Coffee grounds
- * Tea bags
- * Eggshells

Browns (High Carbon):

- * Dried leaves, grass, mulch, hay
- * Cardboard rolls
- * Sawdust
- * Newspaper (shredded)
- * Fireplace ashes
- * Clean paper

The compost recipe:

moisture
+ air
+ time
+ browns & greens

COMPOST

*The compost pile should be periodically mixed to incorporate oxygen. Regularly check the internal temperature and turn over the mixture when it reaches is hot. The compost pile should be built in layers 3 - 4 inches deep.

What Does NOT Go Into The Compost Bin?

Avoid:

- * Egg yolks (attract vermin)
- * Meat (attracts flies and rodents)
- * Oils, grease (produce odor, attract vermin)
- * Pesticides (can kill composting organisms)
- * Pet waste (can carry disease, attracts flies)





Vegetable Planting Guide for Cleveland, Ohio

Approximate Frost Free Date: May 20th (♣) // Approximate First Frost Date: October 20th (✱)

KEY: S = Plant Seeds P = Plant Transplants G = Growing H = Harvest

note: Months are divided into early, middle, and late

	March	April	May	June	July	August	September	October	November
early mid late			♣					✱	
Beans, Bush (spring)			S	S	S	G	G	G	H
Beans, Bush (fall)						S	S	S	H
Beets (spring)	S	S	S	G	G	G	G	H	H
Beets (fall)						S	S	G	G
Broccoli (spring)	P	G	G	G	G	G	G	H	H
Broccoli (fall)						P	G	G	G
Brussels Sprouts			S			P	G	G	G
Cabbage (spring)	P	G	G	G	G	G	G	G	G
Cabbage (fall)						P	G	G	G
Carrots (spring)			S	S	S	G	G	G	H
Carrots (fall)						S	G	G	G
Cauliflower						P	G	G	G
Collards (spring)			P	G	G	G	G	H	H
Collards (fall)						P	G	G	G
Corn			S	G	G	G	G	H	H
Cucumbers				P	G	G	G	H	H
Eggplant			P	G	G	G	G	H	H
Kale (spring)			P	G	G	G	H	H	H
Kale (fall)						P	G	G	H
Lettuce (spring)	S	S	S	G	G	H	H	H	H
Lettuce (fall)						S	S	S	G
Melons			P	G	G	G	G	H	H
Mustard Greens (spring)	S	S	S	G	G	H	H	H	H
Mustard Greens (fall)						S	S	S	G
Onions, Plants	P	P	P	G	G	G	G	G	H
Onions, Seed	S	S	S	G	G	G	G	G	H
Parsley			S	S	G	G	G	G	H
Peas (spring)	S	G	G	G	G	H	H	H	H
Peas (fall)						S	G	G	G



Vegetable Planting Guide for Cleveland, Ohio

Approximate Frost Free Date: May 20th (♣) // Approximate First Frost Date: October 20th (❄)

KEY: S = Plant Seeds P = Plant Transplants G = Growing H = Harvest

note: Months are divided into early, middle, and late

	March	April	May	June	July	August	September	October	November
early mid late			♣					❄	
Peppers									
Potato (early)	S	S	G G G	P G G G G	G G G	G G G	H H H		
Potato (late)			S	S G G G G	G G G	G G G	H H H		
Radishes (spring)	S	S	S G G	G G G	H H H				
Radishes (fall)						S S S	G G G	G G G	H H H
Spinach (spring)	S	S	G G G	G H H					
Spinach (fall)						S S S	G G G	G G G	H H H
Squash, Summer									
Squash, Winter			P G G	G G G	G G G	G G G	H H H		
Sweet Potatoes			P G G	G G G	G G G	G G G	G G G	H H H	
Swiss Chard (spring)		S S	S S	G G G	G G G				
Swiss Chard (fall)						S S S	G G G	G G G	H H H
Tomatoes									
Turnips - root (spring)			P G G	G G G	G G G	G G G	H H H		
Turnips - root (fall)				S S S	G G G	G G G	H H H		
						S S S	G G G	G G G	H H H

*fall crops may take up to 10 additional days to reach maturity



Planting for Fall Harvest

Many vegetables for fall harvest should be sown or transplanted during the summer months. The cool days and nights of fall provide ideal conditions for growth and development of fall crops.

Planting times should correspond to harvesting vegetables around the time of first frost in this area (October 20th), even though harvest can extend up to Thanksgiving.

September 1 st		50 Days
August 15 th		66 Days
August 1 st		81 Days
July 15		97 Days

Crop	Date to Plant
Bush-Beans & Peas	Seed: August 10 – 20
Oriental Vegetables	Seed: August 1 – 20
Leafy Greens	Seed: August 15 – September 1 Transplants: September 1-10
Cole :	
<ul style="list-style-type: none"> • Broccoli • Cabbage • Cauliflower • Collard 	Seed: July 15 – 30 Transplants: August 15 – 20
<ul style="list-style-type: none"> • Kale • Kohlrabi • Mustard 	Seed: August 1 – 20
<ul style="list-style-type: none"> • Brussels Sprouts 	Seed: July 1 – 10 Transplants: September 1 –10
Root:	
<ul style="list-style-type: none"> • Beets • Carrots • Turnips 	Seed: August 1 - September 1
<ul style="list-style-type: none"> • Radish 	Seed August 1 – September 30
<ul style="list-style-type: none"> • Rutabaga 	Seed: August 1 – 15

Adapted from the Just Food, "The City Farmer TOOLKIT", 2003.



Vegetable Varieties

Not all plants will grow well in Cuyahoga County, but there are plenty well suited for our seasons and growing conditions. When picking plants, look to see which plant hardiness zone they will grow in. A hardiness zone refers to where specific category of plant life is capable of growing, including its ability to withstand the minimum temperatures of the zone. Most of Cuyahoga County is in **Zone 5** (minimum temperature range from -10 to -20) but if you are close to Lake Erie you may be in **Zone 6a** (min. temperature of -10 to -5). If seeds or plants are listed as Zone 4 to 8, they should do well throughout our county. There are plenty of varieties that like Zone 5. Pick plants and seeds from this list. It has the best known and some new ones that gardeners may never have tried before.

When choosing a variety, consider these factors:

- Days to harvest/maturity
- Disease resistance
- Hybrid vs. Open pollinated (if you are interested in seed saving)
- Taste, color, aroma, texture, etc.

Crop	Varieties to Try
asparagus	Jersey Giant, Jersey King
beans	<u>Baby Lima or Butterbeans</u> : Baby Fordhook (bush), Henderson (bush), Jackson Wonder <u>Bush Dry</u> : Jacob's Cattle, Vermont Cranberry <u>Bush Snap</u> : Bush Blue Lake, Bush Kentucky Wonder, Provider, Roma II, Romano, Royal Burgandy, Tendercrop <u>Large-seeded Lima</u> : Fordhook 242 (bush), Christmas (pole), King of the Garden (pole), <u>Pole</u> : Blue Lake, Kentucky Blue, Kentucky Wonder, McCaslan <u>Yellow Wax</u> : Gold Rush, Gold Crop, Majestic
beet	Detroit Dark Red, Lutz Green Leaf, Red Ace, Ruby Queen
broccoli	Green Comet, Green Valiant, Packman, Premium Crop
Brussels sprouts	Jade Cross, Prince Marvel
cabbage	Early Jersey Wakefield, Flat Dutch, Golden Acre, Red Acre, Ruby Ball, Ruby Perfection, Savoy Ace, Savoy King, Stonehead
carrot	Chantenay Types, Danvers Types, Healthmaster, Nantes Types, Thumbelina, Toudo
cauliflower	Snow Crown, Snow King, Violet Queen
celeriac	Grows well in our area.
celery	Golden Self-Blanching, Utah 52-70
collards	Blue Max, Champion, Flash, Georgia, Vates
corn	Bodacious, Breeder's Choice, Jubilee, Kandy Korn, Miracle, Silver Queen, Sugar Buns, Sundance
cucumber	<u>Pickling</u> : Calypso, County Fair, Picklebush <u>Slicing</u> : Bush Champion, Comet, Dasher II, Fanfare, Sweet Burpless, Sweet Slice, Sweet Success, Tasty Green



More Vegetable Varieties

eggplant	Black Beauty, Black Magic, Dusky, Ghostbuster, Ichiban, Rosa Bianca
garlic	Elephant, German Stiffneck, Rocambole
greens (Misc.)	Broccoli Raab, Tyfon Holland, see also Collards, Kale, Mustard, Oriental Greens, Spinach, Swiss Chard
horseradish	Grows well in our area.
Jerusalem artichoke	Grows well in our area.
kale	Dwarf Bule, Curled Vates, Lacinato, Red Russian
kohlrabi	Early White Vienna, Grande Duke, Granlibakken
leek	American Flag, Poncho, Musselburg Giant
lettuce	<u>Leaf</u> : Black Seeded Simpson, Red Sails, Royal Oak Leaf, Salad Bowl, Simpson Elite <u>Butterhead</u> : Buttercrunch, Four Season, Nancy, Sangria <u>Romaine</u> : Romance, Rosalita, Rouge D'Hiver
muskmelon (cantalope)	<u>Orange Flesh</u> : Ambrosia, Burpee Crenshaw, Burpee Hybrid, Earligold, Saticoy, Superstar <u>Green Flesh</u> : Earli-Dew, Limelight, Sweet Dream, Venus
mustard	Florida Broadleaf, Green Wave, Kyona/Mizuna, Red Giant, Tendergreen
okra	Annie Oakley II, Burgandy, Cajun Delight, Clemson Spineless
onion	Ebenezer, Sweet Sandwich, Sweet Spanish, Walla Walla
oriental greens	<u>Bok Choy</u> : Joi Choi, Lei Choy, Mei Quig Choy <u>Chinese Cabbage</u> : Blues <u>Other</u> : Minato Santo, Tatsoi, Kyona/Mizuna
parsnip	Harris' Model, Hollow Crown Improved
pea	<u>Shelling</u> : Frosty, Knight, Lincoln, Maestro, Sparkle, Wando <u>Edible Pod</u> : Sugar Ann, Sugar Snap, Super Sugar Mel
peanut	Spanish, Virginia Jumbo
pepper	<u>Sweet</u> : Big Bertha PS, California Wonder, Gypsy, North Star, Purple Beauty, Vidi <u>Hot</u> : Habanero, Hungarian Wax, Jalapeno M, Mexibelle, Super Chili, Thai Dragon
potato	Irish Cobbler, Katahdin, Kennebec, Norland, Red Pontiac
pumpkin	Autumn, Baby Bear, Dill's Atlantic Giant, Howden, Jack Be Little, Prizewinner, Small Sugar, Spirit, Spookie, Triple Treat
radish	Champion, Cherry Belle, French Breakfast, Sparkler, White Icicle <u>Daikon</u> : Daikon Long White, April Cross
rhubarb	Canada Red, MacDonald, Valentine
rutabaga	Laurentian
salsify	Mammoth Sandwich Island
shallots	Gray, Pear













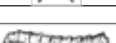





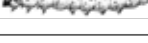
More Vegetable Varieties

squash	<u>Summer</u> : Ambassador Zucchini, Aristocrat Zucchini, Sundance, Early Prolific Straightneck, Early Golden, Summer Crookneck, Peter Pan, Sunburst, Scallopini <u>Winter</u> : Table Ace, Cream of the Crop, Waltham Butternut, Delicata, Buttercup, Sweet Dumpling, Table King, Tivoli (Spaghetti Squash), Blue Hubbard, Green-Striped Cushaw
southern pea	California Blackeye #5, Pinkeye Purple Hull
spinach	Tyee, Melody, Bloomsdale, Correnta, Space <u>Spinach Substitute in Hot Weather</u> : New Zealand Spinach
sweet potato	Centennial, Georgia Jets, Vardaman
Swiss chard	Fordhook, Rhubarb, Charlotte, Lucullus, Perpetual Spinach
tomato	<u>Early</u> : Early Girl <u>Main Season</u> : Carmello, Celebrity, Better Boy, Big Beef, Supersonic <u>Yellow</u> : Lemon Boy, Sunray <u>Paste</u> : Roma, Marzano <u>Small-fruited, Cherry</u> : Gold Nugget, Sweet Million, Sweet 100 Plus, Red Pear, Yellow Pear <u>Heirloom</u> : Brandywine, Old German, Radiator Charlie's Mortgage Lifter
turnip	<u>Greens</u> : Seven Top, Shogoin <u>Roots</u> : Purple Top White Globe
watermelon	Yellow Baby, Golden Crown, Crimson Sweet, Sugar Baby, Garden Baby

Seed companies are always testing new varieties. Become familiar with the seed companies located in climates similar to yours. Don't be afraid to try something new.



Common Pest in Ohio Home Vegetable Gardens

<i>Crop</i>	<i>Pest name</i>	<i>Appearance</i>	<i>Damage</i>	<i>Non-chemical management tactics</i>	<i>Insecticide options</i>
tomato	potato aphid		young leaves wilt due to sap-sucking	encourage ladybugs, lacewings, and other predators	soap, pyrethrins+PBO, oil, esfenvalerate, endosulfan, dimethoate, or disulfoton
	whitefly		leaves wilt due to sap-sucking	trap with sticky yellow cards	soap, or pyrethrins+PBO
cucumber, melon & squash	cucumber beetles		holes in leaves or fruit surface	row covers; plant late; early squash trap crop	rotenone dust, permethrin, endosulfan, carbaryl, or pyrethrins+PBO
squash	squash vine borer		plant wilts from larva inside stem	row covers; plant late	permethrin, esfenvalerate, or endosulfan weekly in July
	squash bug		leaves die from sap-sucking	hand pick; row covers; shingle traps; destroy crop remnants	pyrethrins+PBO, esfenvalerate, or endosulfan for adults; spinosad or carbaryl for nymphs
beans	bean leaf beetle		holes in pods & leaves	row covers	carbaryl, permethrin, pyrethrins+PBO, or rotenone
	potato leafhopper		leaves turn brown along edges	row covers	endosulfan, pyrethrins+PBO, or carbaryl
	2-spotted spider mite		white stippling on leaves	encourage ladybugs & other predators; hose off with water	dicofol, soap, oil, or dimethoate
eggplant	eggplant flea beetle		many small round holes in leaves	row covers; hand-picking	carbaryl, pyrethrins+PBO, permethrin, or rotenone
potato, tomato, eggplant	Colorado potato beetle		irregular holes in leaves	hand pick; plant early or late, not both	B.t. (beetle type), rotenone, or endosulfan
cole crops	cabbage-worms		irregular holes in leaves	encourage parasitoids by flowering borders	B.t., or spinosad
	flea beetles		small pits or holes in leaves	row covers; hand-picking	carbaryl, pyrethrins+PBO, permethrin, or rotenone
	root maggots		plant wilts from tunnels in roots	stem collar; planting time	-
spinach	spinach leafminer		blotches in leaves	row covers; hand pick first infested leaves and destroy	dimethoate, permethrin, pyrethrins+PBO, or spinosad
lettuce	aphids		leaves wilt from sap-sucking	encourage ladybugs, lacewings, and other predators	soap, pyrethrins+PBO, endosulfan, dimethoate, or disulfoton
onion	onion thrips		pale streaks in leaves	hose off with water	soap or lambda-cyhalothrin
asparagus	asparagus beetle		distorted shoots	hand pick	pyrethrins+PBO, carbaryl, permethrin, or rotenone
sweet corn	European corn borer		chewed kernels in corn ears (also in pepper fruit)	avoid very early planting	B.t., or spinosad or permethrin, once per week during silking in June & August
	corn earworm		chewed kernels in corn ears (also in tomato fruit)	avoid late planting	inject corn oil + B.t. (20:1) in ear tip at full silk; or spray spinosad or esfenvalerate twice/week during silking.

-Celeste Welty, Extension Entomologist, The Ohio State University, September 2006



Local Resources

Ohio State University Extension: Works with youth, families and communities through educational programs and activities. OSUE helps build stronger and healthier people and communities. The staff at OSUE educates gardeners at their gardens and at workshops offered throughout the year. OSUE can answer any questions about starting a community garden and what they can do to assist in the process. **Call the office at 216.429.8200 Monday through Friday 8:00 am to 5:00 pm to get started.** The website for Ohio State University Extension, Cuyahoga County is <http://cuyahoga.osu.edu/>. The office address is 9127 Miles Ave. Cleveland, Ohio 44105.

- **Urban Agriculture Program** has many programs with gardening in Cuyahoga County. These programs all provide education and planning assistance in some form. The amount of materials and monetary assistance given to gardeners varies by program and funding available. Contact the OSUE office for more information and how you can get involved (see information above).
- **Master Gardeners** are volunteers that have a hotline for gardeners like you. You can call on Mondays and Thursdays between 10:00 am and 1:00 pm if you have any questions about gardening. You may want to know what bugs are eating your tomatoes and what to do about it. You may also want to know what vegetables grow best next to each other, or what to add to your soil. Master Gardeners can answer your questions because they have lots of experience gardening and have been trained by Ohio State University Extension. **The hotline is 216-429-8235. They also have an email address:** mgdiagnostics_cuya@ag.osu.edu.
- **Ohioline** is a website with lots of information about gardening. This website may help you answer questions you have about gardening through information sheets on a wide range of topics from plant varieties to pests in the garden. The website for Ohioline is <http://ohioline.osu.edu/search.php>.
- **Plant Facts** is another online resource that can help you identify plants and understand what is happening with the plants you are growing in your garden. The website for plant facts is <http://hcs.osu.edu/plantfacts/web/>.
- **Ohio Integrated Pest Management** provides information about all the good bugs and bad bugs in Ohio. If you have any questions on how to manage pests in the garden, their website <http://ipm.osu.edu/> has lots of information about the study of bugs (entomology).



In The Community

- **Community Development Corporations in Cleveland (CDC)** are a resource for people living within the City of Cleveland. Cleveland Neighborhood Development Coalition is an organization that can direct you to your local CDC, call 216-928-8100 for more information.
- **Your Local City Hall or the Housing Department** are places to contact for information on vacant land or community gardening. If these offices do not have the information you need, they can usually direct you to a better resource.
- **Project: LEARN** is a Cleveland adult literacy program. In addition to basic reading instruction for adults, the Project also offers Plain Writing consultants who assist programs in making their written materials more accessible to all. A Plain Writing consultant, who is also a gardener at the Kentucky Garden, assisted in the writing of this guide. The Project also offers a training workshop in Writing for Easy Reading. **For more information about Project: LEARN programs call 216-621-9483.**



Thank you to our partners that have helped to make urban agriculture in Cuyahoga County such a success!

Community Partners and Funders

The George Gund Foundation

The Cleveland Foundation

The Edward and Betty Sloat Foundation

The SK Wellman Foundation

City of Cleveland

Cleveland Department of Public Health

Cuyahoga County Board of County Commissioners

Cuyahoga County Board of Health

Harvard Community Services Center

Kaiser Permanente Community Health Initiatives

Case Western Reserve University Center for Health Promotion and Research

Case Western Reserve University Prevention Resource Center for Healthy Neighborhoods

Thank you to Don Snyder for photos taken for the 2009 Urban Harvest Garden Tour

Special Thanks to the “Give Back Gang of Cleveland” & Kaiser Permanente for sponsoring the publication of this guide. Also, Thank you to Project LEARN for technical writing assistance.