



Starting a **Community Garden**

CLEMSON
COOPERATIVE EXTENSION



The **Eat Smart Move More Horry County Coalition** coordinates obesity prevention efforts throughout the county and leads the implementation of South Carolina's Obesity Prevention Plan. The intent of the coalition is to promote ongoing collaboration between state agencies, business and industry, healthcare organizations, schools, academia, community organizations, faith communities, individuals and a broad range of other stakeholders.

Visit <http://eatsmartmovemoresc.org/horrycounty/> for more details on how to get engaged with the Coalition.



Gardening for Good is a network and resource center for community gardens in Greenville County. Gardening for Good utilizes the energy of the community garden movement to coordinate neighborhood redevelopment efforts, improve the health of residents and neighborhoods, and transform Greenville through gardening. Gardening for Good is coordinating gardening partnerships throughout Greenville County to create a healthier, more sustainable and socially just local food system. Gardening for Good is a program of Greenville Forward

Visit www.ggardeningforgood.com for more information on how to get involved.

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Part I

Introduction to Community Gardening

Many families living in urban and suburban communities would like to grow their own fruits, vegetables, herbs, and flowers. Those who are lucky enough to have sunny backyards or balconies can plant a garden whenever they have the time and energy, but what about those who do not have a place to garden? For these people, community gardens may be the answer.

A community garden is typically one piece of land, which is gardened collectively by a group of people. In addition to providing fresh produce, community gardens beautify neighborhoods and help bring neighbors closer together. They have been proven as tools to reduce neighborhood crime—particularly when vacant, blighted lots are targeted for garden development. Community gardens also provide safe, recreational green space in urban areas with little or no parkland, and can contribute greatly to keeping urban air clean.

Types of Community Gardens

Community gardens take many shapes and forms. From a 50-by-50-foot church garden that supplies a local food pantry with fresh produce to a vacant city lot divided into plots and gardened by neighbors, community gardens reflect the needs and the desires of people directly involved in their management and upkeep. As such, there are many, many ways to organize and manage a community garden.

First, neighborhood community gardens are typically located on land that is divided into different plots for individual

and family use. The land may be borrowed, rented or owned by the gardeners, and gardeners generally prepare, plant, maintain and harvest from their own plots. Gardeners and their family, friends and neighbors usually consume produce from the gardens rather than selling it. Gardeners often share tools, water and compost, along with seeds and plants.

Second, neighborhood community gardens are often organized and managed by the gardeners themselves, have one or more identified leaders responsible for managing the day-to-day activities of the garden and have some type of a garden committee to share in the work. Because community gardens come with a host of responsibilities that range from making plot assignments and keeping the grass mowed to resolving conflicts and enforcing the rules, things tend to run more smoothly when one or more people are in charge and gardeners themselves take an active role keeping the garden in shape.

Finally, in addition to occupying vacant neighborhood lots, neighborhood community gardens are sometimes found at churches, social service agencies and other nonprofit organizations, including food pantries and food banks. These gardens may involve both neighbors from the surrounding area and the members or clients of a particular agency or institution. They sometimes incorporate educational, job-training and entrepreneurial programming.

In addition to the typical neighborhood community garden where plots are subdivided and cared for by individuals or families, community gardens exist in a variety of other forms to serve a number of functions. The examples below represent different types of community gardens that are distinguished in part by their purpose and participants.

- Youth/school gardens expose young people to gardening and nature, give them the opportunity to do some of their own gardening and/or educate them in a variety of subject areas. These gardens are typically associated with a formal or semi-formal program that incorporates classroom lessons with hands-on gardening activities. Gardens may be located on school grounds, at a community center, in neighborhoods or on other parcels of land.

Photo courtesy of Gardening for Good



- Entrepreneurial/job training market gardens are typically established by nonprofit organizations or other agencies to teach business or job skills to youth or other groups. They grow and sell the produce they raise. Proceeds from the sale of garden products are used to pay the participants for their work. Programs typically rely on outside sources of funding to offset costs.
- Communal gardens are typically organized and gardened by a group of people who share in the work and rewards. Plots are not subdivided for individual or family use. Produce is distributed among group members. Sometimes produce is donated to a local food pantry.
- Food pantry gardens may be established at a food pantry, food bank or other location. Produce is grown by volunteers, food pantry clients, or both and donated to the food pantry.
- Therapy gardens provide horticultural therapy to hospital patients and others. A trained horticulture therapist often leads programs and classes. Gardens may be located at hospitals, senior centers, prisons or other places. Demonstration gardens show different types of gardening methods, plant varieties, composting techniques and more.
- Demonstration gardens located at working community gardens are often open to the general public for display and classes. They may be managed and maintained by garden members or a participating gardening group such as extension Master Gardeners, community members who receive training in home horticulture and then serve as volunteers to educate the public about gardening.

Rural community gardens

Although community gardens are often associated with urban areas, they exist in many rural areas as well. However, because of the unique characteristics of rural places, they often take on different forms and serve different functions. Research



Photo courtesy of Gardening for Good

conducted by Ashley F. Sullivan (1999) from the Center on Hunger and Poverty at Tufts University identified a number of ways in which rural community gardens differ from their urban counterparts. Her research uncovered different types of rural community gardens along with obstacles to community gardening in rural areas.

Sullivan identified several different types of rural community gardens in her study. They included the following:

- Traditional neighborhood-type gardens with individual and family plots
- Gardens that provide demonstration and education to gardeners at neighborhood gardens and home gardens
- Communal gardens tended collectively with the produce going to a local food pantry
- Educational gardens that offer classes to the public
- School gardens that incorporate gardening and nutrition education
- Community-assisted home gardens where an experienced gardener mentors novice gardeners in their home gardening efforts
- Gardens affiliated with an existing agency, apartment complex or church

Sullivan identified obstacles to community gardening in rural areas as well. Obstacles include a high rate of gardener and volunteer turnover, animosity between “outsiders” and community members, lack of gardening skills and lack of transportation.

Sullivan also offers recommendations for overcoming some of these obstacles:

- Do not assume that the traditional neighborhood community garden model will work in rural areas.
- During the planning stages, identify obstacles to starting a community garden in a rural area.
- Identify solutions to the obstacles.
- Respect the values of the community and incorporate those values into the garden’s design.
- Be flexible when deciding how to organize a garden; incorporate different models into a plan to see which one works best.
- Help gardeners cultivate a sense of ownership for the garden.
- Take time to look at all of the factors that might hinder participation.
- Involve local organizations and businesses.



Part II

Starting a Community Garden

Steps to Organizing Your Community Garden

1. *Get Your Neighbors Involved*

There is a lot of work involved in starting a new garden. Make sure you have several people who will help you. Over the years, our experience indicates that there should be at least ten interested families to create and sustain a garden project. Survey the residents of your neighborhood to see if they are interested and would participate. Hold monthly meetings of the interested group to develop and initiate plans, keep people posted on the garden's progress, and keep them involved in the process from day one.

2. *Form a Garden Club*

A garden club is a way of formally organizing your new group. It helps you make decisions and divide-up the work effectively. It also ensures that everyone has a vested interest in the garden and can contribute to its design, development, and maintenance. It can be formed at any time during the process of starting a community garden; however, it's wise to do so early on. This way, club members can share in the many tasks of establishing the new garden. The typical garden club will have many functions, including:

- Establishing garden rules
- Accepting and reviewing garden applications

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- Making plot assignments
 - Collecting garden dues (if any)
 - Paying water bills
 - Resolving conflicts

The typical garden club has at least two officers: a president and a treasurer, although your garden club may have more if necessary. Elections for garden officers may be held annually.

3. Find Land for the Garden

Look around your neighborhood for a vacant lot that gets plenty of sun—at least six to eight hours each day. A garden site should be relatively flat (although slight slopes can be terraced). It should be relatively free of large pieces of concrete left behind from demolition of structures. Any rubble or debris should be manageable—that is, volunteers clearing the lot with trash bags, wheelbarrows, and pick-up trucks can remove it. Ideally, it should have a fence around it with a gate wide enough for a vehicle to enter. It is possible to work with a site that is paved with concrete or asphalt by building raised beds that sit on the surface or using containers. You can also remove the asphalt or concrete to create areas for gardens, but such a garden will be much more difficult, expensive, and time-consuming to start. A site without paving, and soil relatively free of trash and debris is best.

The potential garden site should be within walking, or no more than a short drive from you and the neighbors who have expressed interest in participating. If the lot is not already being used, make sure the community supports establishing a garden there.

It's best to select three potential sites in your neighborhood and write down their address and nearest cross streets. If you don't know the address of a vacant lot, get the addresses of the properties on both sides of the lot—this will give you the ability to make an educated guess on the address of the site.

4. Find out Who Owns the Land

It is illegal to use land without obtaining the owner's permission. In order to obtain permission, you must first find out who owns the land. Start by asking neighbors. If ownership information is not readily available, take information related to address described above to your local tax assessor's office for assistance.

5. Find out if Your Proposed Site has Water

While you are researching site ownership, contact the water service provider in your area to find out if your potential site(s) has/have an existing water meter to hook-in to. Call your water provider's customer service department, and ask them to conduct a "site investigation". They will need the same location information that you took with you to the Tax Assessor's office.

Existing access to water will make a critical difference in the expense of getting your project started. Depending on the size of your garden site, you will need a 1/2-inch to 1-inch water meter. If there has been water service to the site in the past, it is relatively inexpensive to get a new water meter installed (if one doesn't already exist). If there has never been water service to that site, it might cost much more for your water provider to install a lateral line from the street main to the site and install your new meter.

6. Contact the Land Owner

Once you have determined that your potential site is feasible, write a letter to the landowner asking for permission to use the property for a community garden. Be sure to mention to the landowner the value of the garden to the community and the fact the gardeners will be responsible for keeping the site clean and weed-free (this saves landowners from maintaining the site or paying city weed abatement fees).

7. Sign a Lease (if necessary)

Establish a term for use of the site, and prepare and negotiate a lease. Typically, groups lease garden sites from land owners for \$1 per year. You should attempt to negotiate a lease for at least three years (or longer if the property owner is agreeable). Many landowners are worried about their liability for injuries that might occur at the garden.

Your group should be prepared to offer the landowner a lease with a "hold harmless" waiver. This "hold harmless" waiver can simply state that, should one of the gardeners be injured as a result of negligence on the part of another gardener, the landowner is "held harmless" and will not be sued. Each gardener

Photo by Cory Tanner



should be made aware of this waiver and should be required to sign an agreement in order to obtain a plot in the community garden.

8. Maintain Liability Insurance

Be prepared to purchase liability insurance to protect further the property owner (and yourself) should an accident occur at the garden. It is becoming increasingly difficult to obtain leases from landowners without liability insurance. Garden insurance is a new thing for many insurance carriers and their underwriters are reluctant to cover community gardens. It helps if you know what you want before you start talking to agents. Two tips: you should probably be working with an agent from a firm which deals with many different carriers (so you can get the best policy for your needs) and you will probably have better success with someone local who has already done this type of policy or one that works with social service agencies in the area.

9. Get the Soil Tested

Once you have identified a suitable location for your garden, prepare to have the soil tested. Many community gardens take place in areas that have been subject to continuous use for decades. Soil may be depleted of needed nutrients and compacted to a degree that makes growing anything a difficult proposition. However, soils may be rehabilitated to support productive purposes. Soil testing methods are discussed in detail in Part III.

10. Plan the Garden

Community members should be involved in the planning, design, and set-up of the garden. Before the design process begins, you should measure your site and make a simple, to-scale site map. Hold two or three garden design meetings at times when interested participants can attend. Make sure that group decisions are recorded in official minutes, or that someone takes accurate notes. This ensures that decisions made can be communicated to others, and progress will not be slowed. A great way to generate ideas and visualize the design is to use simple drawings or photos cut from garden magazines representing the different garden components-
-flower beds,
-compost bins,
-pathways,
-arbors, etc.-
-that can be moved around on the map as the group discusses layout.



Photo by Cory Tanner

Challenges

A discussion of starting and managing a community garden would be incomplete without a discussion of the challenges encountered by gardeners and garden organizers. Common challenges faced by most community garden groups include:

- **Management** - Community gardens are management intensive. They demand patience, time and the capacity to work with and organize people and projects. They also typically require systems to enforce rules and resolve conflicts.
- **Maintenance** - Community gardens are maintenance intensive. Grass will need to be mowed, equipment will need to be repaired, and plant debris will need to be composted, among other things.
- **Participation** - From year to year, gardeners and garden leaders come and go from community gardens for a variety of reasons. Because of this, it can be challenging to maintain a sense of community and consistency at gardens.
- **Theft and vandalism** - Theft and vandalism are commonplace at many community gardens. As a general rule, theft is the result of adult activity and children carry out vandalism.
- **Gardening skills** - Many new and some returning gardeners don't know a lot about gardening. Gardeners who lack gardening skills and have poor gardening experiences may be more likely to give up.
- **Leadership skills** - Many gardeners may not have the skills to take a leadership role at their respective garden.
- **Services and supplies** - Plowing, tilling and the delivery of compost and mulch can be challenging services for gardeners to arrange for themselves.
- **Water** - Most gardens need some way to irrigate fruits and vegetables during the summer. Finding a source of water can be challenging. Also, because most community gardens are located on borrowed land, installing a water hydrant may not be feasible or cost effective.
- **Site permanency** - Most community gardens are located on borrowed land. This limits the amount of infrastructure 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.



Basic Design Considerations for a Community Garden

Although there are exceptions to every rule, community gardens commonly include the following elements:

- Adequate number of plots assigned to community members. These should be placed in the sunniest part of the garden. Without plots for individual participation, it is very difficult to achieve long-term community involvement. Raised bed plots, which are more expensive, should be no more than 4 feet wide (to facilitate access to plants from the sides without stepping into the bed), and between 8 and 12 feet long (it is advisable to construct your raised beds in sizes that are found in readily-available lumber, or that can be cut without too much waste). In-ground plots can be from 10 x 10 up to 20 x 20 feet. Pathways between beds and plots should be least 3 to 4 feet wide to allow space for wheelbarrows. The soil in both raised bed and in-ground plots should be amended with aged compost or manure to improve its fertility and increase its organic matter content.
- A simple irrigation system with one hose bib or faucet for every four plots. Hand watering with a hose is the most practical and affordable for individual plots (and it's almost a necessity when you start plants from seed). Drip and soaker-hose irrigation can be used in all areas of the garden for transplanted and established plants, but especially for deep-rooted fruit trees and ornamentals. If no one in your group is knowledgeable about irrigation, you might need some assistance in designing your irrigation system. Seek out a landscape contractor or nursery or garden center professional to help you develop a basic layout and materials list.
- Perimeter fencing may be an effective means of controlling both vandalism and nuisance wildlife impacts to the garden site.
- A tool shed or other structure for storing tools, supplies, and materials. Recycled metal shipping containers make excellent storage sheds, and are almost vandal-proof. Contact the Port Authority for leads on where to find them.
- A bench or picnic table where gardeners can sit, relax, and take a break--preferably in shade. If there are no shade trees on the site, a simple arbor can be constructed from wood or pipe, and planted with either ornamental or fruiting vines.
- A sign with the garden's name, sponsors, and a contact person's phone number for more information.
- A shared composting area for the community gardeners. Wood pallets are easy to come-by and (when stood on-end, attached in a U-shape, and the inside covered with galvanized rabbit-wire) make excellent compost bins.



Photo by Cory Tanner

Tips to make your community garden more accessible:

- Include members of your community with various disabilities and ages in the planning process.
- Provide accessible parking to the greatest extent feasible.
- Make sure the garden layout is accessible by making paths wide enough to accommodate wheelchairs/walkers, and constructing paths with a solid, even surface (such as patio pavers).
- Make use of table top gardens or raised beds of various heights.

Nice Additions to Your Garden Plan

- A small fruit tree orchard, whose care and harvest can be shared by all the members. The orchard can also create shade for people as well as shade-loving plants.
- A water fountain. This can be a simple drinking fountain attachment to a hose bib (or faucet) you can purchase at a hardware store.
- Perimeter landscaping, which can focus on drought tolerant flowers and shrubs, plants which attract butterflies and hummingbirds, or roses and other flowers suitable for cutting bouquets. Herbs are also well-suited to perimeter landscaping and help to create barriers to unwanted pest insects who do not like the smell of their essential oils.
- A children's area, which can include special small plots for children, a sand box, and play equipment.
- A meeting area, which could range from a semi-circle of hay bales or tree stumps, to a simple amphitheater built of recycled, broken concrete. Building a shade structure above would be beneficial as well.
- A community bulletin board where rules, meeting notices, and other important information can be posted.



Photo by Cory Tanner

Creating a Garden Budget

Use your design to develop a materials list and cost-out the project. You will need to call-around to get prices on fencing and other items. You might be surprised at the cost. A community garden with just the Basic Elements (listed above) typically costs between \$2,500 to \$5,000. At this point, your group might decide to scale back your initial plans and save some design ideas for a “Phase Two” of the garden.

Where to Get Materials and Money

While some start-up funds will be needed through determination and hard work, you can obtain donations of materials for your project. Community businesses might assist, and provide anything from fencing to lumber to plants. The important thing is to ask.

Develop a letter that tells merchants about your project and why it's important to the community. Attach your “wish list”, but be reasonable. Try to personalize this letter for each business you approach. Drop it off personally with the store manager, preferably with a couple of cute kids who will be gardening in tow! Then, follow-up by phone. Be patient, persistent, and polite. Your efforts will pay-off with at least some of the businesses you approach. Be sure to thank these key supporters and recognize them on your garden sign, at a garden grand opening, or other special event.

Money, needed to purchase items not donated, can be obtained through community fund-raisers such as car washes, craft and rummage sales, pancake breakfasts, and bake sales. They can also be obtained by writing grants, but be aware grant writing efforts can take six months or longer to yield results, and you must have a fiscal sponsor or agent with tax-exempt 501(c)3 status (such as a church or non-profit corporation) that agrees to administer the funds.

Make Sure Your Garden Infrastructure is in Place

If you have not yet formed a garden club, now is the time to do so. It's also time to establish garden rules, develop a garden application form for those who wish to participate, set up a bank account, and determine what garden dues will be if these things have not already been done. This is also the time to begin having monthly meetings if you have not already done so. Also, if you haven't already contacted your city councilperson, he or she can be helpful in many ways including helping your group obtain city services such as trash pick-up. Their staff can also help you with community organizing and soliciting for material donations.

Photo by Donna Bowen



Get Growing!

Many new garden groups make the mistake of remaining in the planning, design and fundraising stage for an extended period of time. There is a fine line between planning well and over planning. After several months of the initial research, designing, planning, and outreach efforts, group members will very likely be feeling frustrated and will begin to wonder if all their efforts will ever result in a garden. That's why it's important to plant something on your site as soon as possible. People need to see visible results or they will begin to lose interest in the project. To keep the momentum going, initiate the following steps even if you are still seeking donations and funds or your project (but not until you have signed a lease and obtained insurance).

1. **Clean up the Site** - Schedule community workdays to clean up the site. How many work days you need will depend on the size of the site, and how much and what kind of debris are on site.
2. **Install the Irrigation System** - Without water, garden success may be limited. So get this key element into place as soon as possible. There are plenty of opportunities for community involvement--from digging trenches to laying out PVC pipes.
3. **Plant Something** - Once you have water, there are many options for in-garden action. Stake out beds and pathways by marking them with stakes and twine. Mulch pathways where needed
4. **Celebrate** - At this point, your ideas and hard work have finally become a community garden! Be sure to take time to celebrate. Have a grand opening, barbecue, or some other fun event to give everyone who helped to make this happen, a special thank-you. This is the time to give all those who gave donated materials or time a special certificate, bouquet, or other form of recognition.

Photo by Cory Tanner



Part III

Planning Before Planting

Soil Testing

There are several nutrients that are essential for plant growth. A soil test is used to determine the amount of these nutrients in the soil. The soil test results are subsequently used to make a soil test report. In addition to indicating the level of nutrients in your soil, the report will also tell you the pH value or how acidic or basic your soil is, and it will make a recommendation for the amount and type of fertilizer and/or lime you need to add to the soil for optimum plant growth. This allows you to customize your soil fertilizer and lime applications to your plants' needs.

Following the recommendations will help prevent problems with nutrient deficiencies (in the case of under-fertilization) or problems associated with over-fertilization such as excessive vegetative growth, delayed maturity, salt burn and wasted money. In addition, it can protect against any environmental hazards resulting from excessive fertilizer applications.

How to Take Soil Samples

To have a soil analysis done you need to collect 12 or more cores, which will be combined as one composite sample. The samples should include soil from the surface to a depth of 6 inches in all areas except for lawns where cores should be taken from a depth of only 2 to 3 inches. A simple garden trowel can be used to collect the samples. Place the samples in a clean bucket and mix them thoroughly. It is imperative to use clean sampling tools.

Photo by Amy Dabbs



Pesticide or fertilizer residues will create misleading results. The sample must not be excessively wet before it goes to the lab. Bring a minimum of 2 cups of soil per sample to your county Extension office. Be sure to keep track of which part of your yard the sample came from. At the Extension office they will ask you to fill out the information on a soil test bag, fill out a record sheet and check the appropriate boxes for the analyses desired. This test provides unbiased, scientific information on:



Photo by Walker Massey

- The soil pH value.
- The current soil levels of phosphorus, potassium, calcium, magnesium, zinc and manganese.
- Fertilizer and lime recommendations (if needed) for the plants you are growing.

How Many Samples to Take

You need to take a soil sample from each section of your yard or garden. Usually this means, for example, one sample in your turf area, one in any foundation or perennial bed and one in your vegetable garden. If you have a problem area where plants do not seem to grow well, take a separate soil sample from that location.

Sampling Frequency

The Clemson University Extension Service recommends soil sampling every year.

Time of Sampling

Soil samples can be taken at any time of the year, but it is best to sample the soil a couple months before planting a garden, to allow ample time for the lime to react with the soil.

Soil Test Results

Within seven to fourteen days, a copy of your soil analysis will be sent directly to you from the Agricultural Service Lab. Your county Extension office will also receive a copy. Your soil analysis will have a bar graph representing the amount of soil nutrients found and the soil pH value. It will have a section at the bottom of the first page which shows how much lime (if needed) to add for each 1000 square feet and refer you to specific comments on the last page. The comments page will

tell you what type of fertilizer you need, how much you need and how to apply it. These recommendations are specific for whatever type of plant you want to grow (as you indicated on the soil test record sheet).

Understanding Your Soil Test Report

Soil pH: Soil pH is a measure of how acidic or alkaline your soil is. Soil pH directly affects nutrient availability. The pH scale ranges from 0 to 14, with 7 as neutral. Numbers less than 7 indicate acidity, while numbers greater than 7 indicate an alkaline soil. Plants thrive best in different soil pH ranges. Some plants, like blueberries thrive best in acidic soils (pH 5.0 to 5.5). Vegetables do best in slightly acidic soils (pH 5.8 to 6.5). Soil pH values above or below these ranges may result in less vigorous growth or symptoms of nutrient deficiencies.

Nutrients: Nutrients for healthy plant growth are divided into three categories: primary, secondary and micronutrients. Nitrogen (N), phosphorus (P) and potassium (K) are primary nutrients, which are needed in fairly large quantities compared to the other nutrients. Calcium (Ca), magnesium (Mg) and sulfur (S) are secondary nutrients, which are required by the plant in lesser quantities but are no less essential for good plant growth than the primary nutrients. Zinc (Zn) and manganese (Mn) are micronutrients, which are required by plants in very small amounts. Most secondary and micronutrient deficiencies are easily corrected by keeping the soil at the optimum pH value.

Nitrogen: Available nitrogen is taken up by plant roots in the form of nitrate (NO₃-) and ammonium (NH₄⁺). Nitrogen testing is not recommended because the levels of available nitrogen are variable due to its mobility in the soil. The available forms of nitrogen are very water-soluble and move rapidly through the soil profile with rainfall and irrigation. This causes the amount in the root zone to fluctuate over time. Recommendations are based on the requirements of the particular plants you are growing.

If you need help interpreting the results of your soil tests, call the Home & Garden Information Center at 1-888-656-998.

Photo courtesy of Gardening for Good



Notes on Soil

There is frequently a temptation to use potting soil or compost as the primary growing media in raised beds. While this is convenient and may provide good results in the first season or two, growing in pure “soilless” mixes or “potting soils” containing peat moss, perlite, or vermiculite, or organic matter, such as compost, is generally not recommended in outdoor raised beds. These substrates tend to dry out quickly, degrade rapidly, and do not hold nutrients as well as mineral (native) soils; also, they require more frequent watering and fertilizing. Instead, use organic matter as an amendment: mix it with your native soil. Generally, applying a 1 to 2 inch layer of organic matter and tilling it into the top six inches of garden soil will provide significant benefits. Adding a similar amount of organic matter each year is better than applying it all at one time. When mixed together at these ratios, mineral soil and organic matter work together to improve soil nutrient- and water-holding capacity, and overall soil health. Ultimately, it will result in a highly productive and bountiful garden.

Note: If you decide to use fully artificial soils like potting soil or compost as the primary growing media, standard “mineral” soil tests results may not be particularly valid. If your community garden will be using artificial soils, please contact your local Extension agent for testing recommendations.



Photo by Cory Tanner

Contaminant Testing

Often the only land available for community gardening may be reclaimed from some other use. Former home sites, reclaimed industrial property, waste dumps, and abandoned parking lots are examples of land that can be re-purposed for gardening.

While not ideal, these sites may offer the best garden location. Before leasing the property, garden leadership may want to test the soil for undesirable compounds such as pesticides, industrial chemicals, and other pollutants.

Clemson Extension does not perform testing for soil contaminants, however many private environmental testing labs provide this service. When seeking environmental soil testing it will be helpful and cost saving if you can identify the most likely pollutants and have the lab look for those groups of pollutants specifically. No lab can test for all possible contaminants without considerable cost.

Ask current and former property owners and/or managers about the prior land use to get an idea of what contaminants to test for.

General Gardening Tips

- In South Carolina, gardens should receive at least six hours of direct sun each day. Leafy vegetables can tolerate partial shade; vegetables that produce fruit, such as peppers and tomatoes, must be grown in full sun.
- Avoid planting too close to or beneath trees and shrubs because shade and the competition for nutrients and water may reduce vegetable growth. If a garden must be planted near trees, reserve the sunniest spot for vegetables grown for their fruit or seeds. Plants grown for their leaves or roots can be grown in partial shade.
- Because vegetables require water, especially during droughty periods, a site within close proximity to the house should be considered; this site is usually located close to an abundant water supply.
- Vegetables can also be grown in containers, as long as light, water and soil volume requirements are met. More information on vegetable gardening in containers is available in HGIC 1251, Container Vegetable Gardening.
- Some community gardens might use permanent raised beds. Raised beds are easy to maintain, and require less effort to control weeds and overcome poor soil or site problems. Raised beds can be any size, but narrow beds (about 3 to 4 feet wide) will allow the gardener to reach the center of the bed without stepping into the bed. More information on raised beds is available in HGIC 1257, Raised Beds.



Planning the Vegetable Garden

Vegetables make up the majority of community garden plantings and for that reason this guide focuses on vegetable production. Vegetables can be grown abundantly in most areas of South Carolina with proper care. Success or failure of vegetable production can depend on many things, but some major reasons for failure are negligence, not following the proper instructions and not keeping up with current vegetable developments.

When planning a garden, it is important to ask a few basic questions:

- How much space is available? The plot size will have a tremendous impact on what and how much you can grow.
- Who will be doing the work? Will the garden be a group project with family members or friends who will work willingly through the season to a fall harvest, or will you be handling the hoe alone in between camping and swimming?
- What do you and your family like to eat? Although the pictures in the garden catalog look delicious, there is no value in taking up gardening space with vegetables that no one eats. Make a list of your family's favorite vegetables, ranked in order of preference. This will be a useful guide in deciding how much of each vegetable to plant. Successive plantings of certain crops, such as beans, can be harvested over a longer period of time and increase your yield. As you plan, list recommended varieties and planting dates.
- How do you plan to use the produce from your garden? If you plan to can, freeze, dry or store part of the produce, this will be a factor not only in planning the garden but also in selecting varieties. Some varieties have much better keeping quality than others. Care should be used in choosing the seeds; making sure the varieties you select are adapted to your area and intended use.

Photo by Cory Tanner





Photo by Millie Davenport

Additional Planning Hints

- Plan the garden on paper first. Draw a map showing arrangement and spacing of crops. If you wish to keep the garden growing all season, you may need a spring, summer and fall garden plan.
- Plan the garden and order seeds by January or February. Some plants may be started indoors as early as January.
- Place tall and trellised crops on the north side of the garden so they will not shade the shorter vegetables.
- Group plants by length of growing period. Plant spring crops together so that later crops can be planted in these areas after the early crops mature. Consider length of harvest as well as time to maturity. Place perennial crops to the side of the garden where they will not be disturbed by annual tillage. Finally, practice crop rotation. Try not to plant the same vegetable or a related vegetable in the same location year after year. A sample, three year rotational planting schedule can be found on page 26.

Photo by Cory Tanner



Season of Planting

The time at which vegetables are planted outdoors depends on the cold hardiness of a particular species or cultivar. Vegetables can be divided into two categories based on temperature requirements: cool-season and warm-season crops.

Cool-season vegetables originated in temperate climates and have their favorable growth period during the cool parts of the year. Cool-season crops grow poorly in summer heat. Though cool-season crops continue to grow well past the earliest freeze in the fall, they should be started early enough to mature before hard freezes are expected.

Warm-season crops primarily came from subtropical and tropical regions and require warm weather for seed germination and plant growth. They are injured or killed by freezing temperatures and should not be planted outdoors in the spring without protection or until the danger of freezing temperatures is past. Warm-season crops planted in the summer to mature in the fall should be planted early enough so they can be harvested before the killing freeze in the fall.

To determine when to plant cool- and warm-season vegetables in South Carolina, refer to Table 1. Knowing the number of days required to reach maturity, a gardener could determine the appropriate planting time for seeds and transplants by using the average dates of the first and last freezes in their area.

Photo Courtesy of Gardening for Good



Planting Zones of South Carolina



Piedmont: Abbeville, Anderson, Cherokee, Chester, Edgefield, Fairfield, Greenville, Greenwood, Lancaster, Laurens, McCormick, Newberry, Oconee, Pickens, Saluda, Spartanburg, Union and York counties.

Central: Aiken, Allendale, Bamberg, Barnwell, Calhoun, Chesterfield, Clarendon, Darlington, Dillon, Florence, Kershaw, Lee, Lexington, Marion, Marlboro, Orangeburg, Richland and Sumter counties.

Coastal: Beaufort, Berkeley, Charleston, Colleton, Dorchester, Georgetown, Hampton, Horry, Jasper and Williamsburg counties.

Table 1: Dates to Plant in South Carolina

Vegetable	Piedmont		Central		Coastal	
	Spring	Fall	Spring	Fall	Spring	Fall
Asparagus	Early Feb.- Late Mar. (crowns)	—	Late Jan.- Early Feb. (crowns)	—	Early Jan.- Late Feb. (crowns)	—
Beans, Snap	Apr. 15-30	Aug. 1-15	Apr. 1-15	Aug. 5-20	Mar. 15-30	Aug. 15-30
Beans, Pole	Apr. 15-30	July 15-25	Apr. 5-20	July 20-30	Mar. 20-30	Aug. 1-10
Beans, Half-runner	Apr. 15-30	Aug. 1-15	Apr. 1-15	Aug. 5-20	Mar. 15-30	Aug. 15-30
Beans, Lima	May 1-15	July 1-15	Apr. 5-20	July 20-30	Mar. 20-30	Aug. 1-10
Beans, Pole Lima	May 1-15	July 1-15	Apr. 5-30	July 15-20	Mar. 20- Apr. 15	July 20-30
Beans, Edible Soy	May 10- June 15	—	May 10- July 1	—	May 10- July 15	—
Beets	March 1-30	Aug. 1-15	Feb. 1-28	Aug. 1-20	Dec. 15- Jan 30	Aug. 1-20
Broccoli ¹	Mar. 1-15	July 1-30	Feb. 20- Mar. 10	July 20- Aug. 15	Feb. 15- Mar. 1	Aug. 10- Sept. 15
Brussels Sprouts	—	July 15- Aug. 15	—	Aug. 1-15	—	Aug. 1-15
Cabbage ¹	Feb. 15- Apr. 1	July 1-30	Jan. 15- Mar. 1	July 25- Aug. 10	Dec. 1- Jan 15	Aug. 1-15
Cantaloupe & Honeydew	Apr. 15- May 15	June 15- 30	Apr. 1-15	—	Mar. 10- Apr. 10	—
Carrots	Mar. 1-15	July 1-30	Feb. 10-28	Aug. 1-15	Dec. 15- Jan 30	Aug. 1-20
Cauliflower ¹	Mar. 1-15	July 1-15	—	July 25- Aug. 10	—	Aug. 1-20
Collards	—	July 1- Aug. 30	Feb. 25- Mar. 20	July 15- Aug. 15	Feb. 20- Mar. 15	Aug. 1-25
Cucumbers	Apr. 15- May 15	July 1-15	Apr. 1-15	Aug. 1-10	Mar. 20-30	Aug. 1-20
Eggplant ¹	May 1-15	July 1-15	Apr. 10-25	July 10- 20	Mar. 25- Apr.10	July 20-25
Garlic	—	Sept. 1- Oct. 30	—	Sept. 15- Nov. 15	—	Oct. 1- Nov. 30
Kale	—	Aug. 15- Sept. 15	—	Aug. 15- Sept. 15	—	Aug. 15- Sept. 15
Lettuce	Mar. 1-15	Aug. 15- 25	Feb. 1-28	Aug. 15- 25	Dec. 20- Feb. 5	Aug. 15-25

Vegetable	Piedmont		Central		Coastal	
	Spring	Fall	Spring	Fall	Spring	Fall
Mustard ²	Feb. 1- Mar. 15	Aug. 15- Sept. 15	Jan. 15- Feb. 25	Aug. 15- Oct. 1	Jan. 1- Feb. 25	Aug. 15- Oct. 1
Onion, Sets	Mar. 1-30	Sept. 1- Oct. 30	Feb. 15- Mar. 15	Sept. 15- Nov. 15	Feb. 1- Mar. 1	Oct. 1- Nov. 30
Onion, Plants	Mar. 1-30	—	Feb. 15- Mar. 15	—	Feb. 1- Mar. 1	—
Onion, Seeds	—	—	—	Sept. 15- Oct. 15	—	Oct. 1- Oct. 30
Okra	May 1-15	June 15- 30	Apr. 10-30	June 15- 30	Apr. 1-20	June 15- June 30
Peanuts	May 1-15	—	Apr. 15- May 15	—	Apr. 25- May 15	—
Peas, Garden	Feb. 1-15	—	Jan. 20-30	—	Jan. 10-20	—
Peas, Southern	May 1- June 30	—	Apr. 10-30	June 20- 30	Mar. 25- Apr. 15	Aug. 1-10
Pepper ¹	May 1-30	July 20- 25	Apr. 5-25	July 15- 25	Mar. 25- Apr. 10	July 20-25
Potatoes, Irish	Mar. 15-30	July 1-15 ³	Feb. 20- Mar. 10	July 15- 30 ³	Feb. 1-15	July 15-30 ³
Potatoes, Sweet	May 10- June 10	—	May 1- June 15	—	Apr. 15- July 1	—
Pumpkins	—	June 1-15	—	June 15- 30	—	July 1-15
Radish ²	Feb. 15- Mar. 15	Sept. 1-30	Feb. 1-28	Sept. 1- Oct. 25	Jan. 1-Mar. 1	Sept. 1- Nov. 1
Rutabaga	—	Aug. 1-20	—	July 25- Aug. 10	—	Aug. 1-20
Spinach ²	Feb. 15- Mar. 15	Sept. 15-30	Feb. 1-28	Sept. 15- Oct. 20	Jan. 1- Feb. 25	Sept 15- Nov. 10
Sweet Corn ²	Apr. 15-30	—	Mar. 20- Apr. 30	—	Mar. 10- Apr. 30	—
Squash, Summer	Apr. 15- May 15	July 1-20	Apr. 1-20	Aug. 1-15	Mar. 20- Apr. 10	Aug. 10-25
Squash, Winter	Apr. 20- May 15	—	Apr. 15-30	—	Mar. 20- Apr. 10	Aug. 10-25
Tomato ¹	May 1- May 30	July 10- 20	Apr. 5-25	July 10- 20	Mar. 25- Apr. 10	July 25-30
Turnips ²	Feb. 20- Apr. 1	Sept. 1-15	Feb. 1- Mar. 10	Aug. 1-Oct. 1	Jan. 1-Mar. 1	Aug. 25- Oct. 15
Watermelon	Apr. 20- June 30	—	Apr. 1-30	June 15- 30	Mar. 25- Apr. 20	—

¹Transplants ²For longer harvest season, plant at intervals during suggested dates.

Table 2: Vegetables Planting Chart

Vegetable	Seed (100-foot row)	Row Spacing (inches)	Planting Depth (inches)	Approximate Days to Harvest
*Transplants				
Asparagus	—	36 x 18	4 crowns	2 years
Beans, Snap	¾ pound	36 x 2	1	50-60
Beans, Pole	½ pound	36 x 4	1	60-70
Beans, Half Runner	½ pound	36 x 2	1	55-65
Beans, Lima	¾ pound	36 x 3	1½	65-75
Beans, Pole Lima	½ pound	36 x 6	1½	70-75
Beans, Edible Soy	½ pound	36 x 3	1	60-70
Beets	½ ounce	30 x 2	¾	50-60
Broccoli	½ ounce	36 x 18	½	60-70
Brussels Sprouts	½ ounce	36 x 18	½	90-100
Cabbage*	½ ounce	36 x 12	3	60-80
Cantaloupe	1 ounce	60 x 24	1	75-85
Carrots	¼ ounce	30 x 1	¼	60-70
Cauliflower	¼ ounce	36 x 18	½	60-70
Collards	½ ounce	36 x 8	½	60-70
Cucumbers	1 ounce	60 x 12	1	50-60
Eggplant*	—	36 x 18	3	70-80
Kale	½ ounce	36 x 1	½	50-55
Lettuce, Leaf	¼ ounce	30 x 2	½	40-70
Lettuce, Head	⅛ ounce	30 x 12	¼	30-50
Mustard	½ ounce	30 x 2	½	40-60
Onions, Green	1 quart	30 x 2	1½ sets	35-45
Onions, Bulb	½ ounce	30 x 3	½ seed	100-120
Okra	1 ounce	36 x 9	¾	60-70
Peanuts	¼ pound	30 x 4	1½	100-120
Peas, Garden	1 pound	36 x 1	1½	65-80
Peas, Southern	½ pound	46 x 4	1½	75-85
Pepper*	—	36 x 18	3	60-70
Potatoes, Irish	12 pounds	36 x 12	3	90-110
Potatoes, Sweet*	—	36 x 8	3	120
Radish	½ ounce	24 x 1	½	25-30
Rutabaga	½ ounce	36 x 12	¾	100-110
Spinach	1 ounce	30 x 2	½	50-60
Sweet Corn	4 ounce	36 x 10	1	80-95
Squash, Summer	1 ounce	36 x 15	1	50-60
Squash, Winter	½ ounce	60 x 48	1½	90-120
Tomato*	—	60 x 24	4	70-80
Turnips	¼ ounce	30 x 2	½	60-70
Watermelon	½ ounce	60 x 60	1½	80-100

Excerpted from the South Carolina Master Gardener Training Manual, EC 678.

Three Year Rotational Planting Schedule

Crop rotation is one of the least expensive and most effective ways to control pests and diseases. Rotation improves soil structure, allowing for better root development, greater water infiltration, and reduced soil erosion.

Use the sample rotational planting schedule below as a guideline to manage your garden plot.

Year 1

bed 1: Tomatoes and peppers (could be preceded or followed by lettuce and peas)

bed 2: Cabbage, broccoli, cauliflower, radish, collards (could be used to grow flowers during summer)

bed 3: Squash, cucumber, melons (could be preceded or followed by spinach)

bed 4: Okra and/or beans (could be preceded or followed by carrots and or onions)

Year 2

bed 1: Okra and/or beans (could be preceded or followed by lettuce and peas)

bed 2: Squash, cucumber, melons (could be preceded or followed by carrots and or onions)

bed 3: Cabbage, broccoli, cauliflower, radish, collards (could be used to grow flowers during summer)

bed 4: Tomatoes and peppers (could be preceded or followed by spinach)

Year 3

bed 1: Squash, cucumber, melons

bed 2: Okra and/or beans (could be preceded or followed by lettuce and peas)

bed 3: Tomatoes and peppers

bed 4: Cabbage, broccoli, cauliflower, radish, collards (could be used to grow flowers during summer)

**Summer Crops (April-Aug); Cool Season Crops (Feb-April & Aug-Nov)*





Part IV

Resources

Community Gardening Toolkit: A resource for planning, enhancing and sustaining your community gardening project, 2009, Bill McKelvey, University of Missouri Extension.

<http://extension.missouri.edu/p/MP906>

Community Garden Start-Up Guide, Rachel Surls with Chris Braswell and Laura Harris, Updated March 2001 by Yvonne Savio, University of California Cooperative Extension.

<http://celosangeles.ucdavis.edu/files/97080.pdf>

Community Gardens in Rural Regions: Enhancing Food Security and Nutrition, December 1999, Ashley F. Sullivan, Tufts University, Center on Hunger and Poverty, School of Nutrition Science and Policy.

Planning a Garden, Revised 01/05, Bob Polomski, Extension Consumer Horticulturalist, Clemson University.

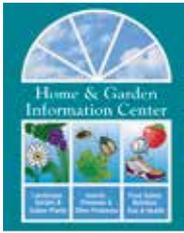
<http://www.clemson.edu/extension/hgic/plants/vegetables/gardening/hgic1256.html>

Small Fruits, Clemson Home & Garden Information Center.

http://www.clemson.edu/extension/hgic/plants/vegetables/small_fruits/

Soil Testing, Revised May 2006, Marjan Kluepfel, HGIC Horticulture Specialist, and Bob Lippert, Extension Soil Fertility Specialist, Clemson University.

<http://www.clemson.edu/extension/hgic/plants/other/soils/hgic1652.html>



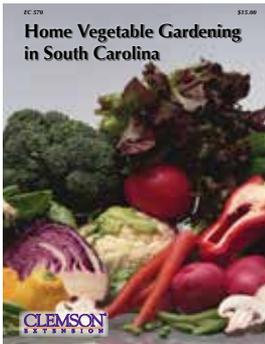
The Home & Garden Information Center (HGIC)

HGIC provides research-based information on landscaping, gardening, plant health, household pests, food safety & preservation, and nutrition, physical activity & health. 1-888-656-9988 (SC residents only, 9 am - 1 pm, M - F)
www.clemson.edu/hgic



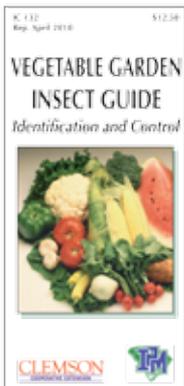
Soil Sample Mailer

How much do you know about the quality of the soil in your yard or garden? Use this soil sampler to mail a sample of your home lawn and/or garden soil directly to our lab. Within 10 days of receiving your soil at the lab, you will receive in return a report including your results and lime and fertility recommendations for your home lawn and/or garden.
<https://shopping.clemson.edu>



Home vegetable gardening in South Carolina

The Home Vegetable Gardening Manual includes sections on garden planning, soil preparation, recommended varieties, planting, fertilization, irrigation and pest identification. Intensive gardening methods, such as container gardening or raised-bed gardening are covered. There are sections containing tips on growing the most popular vegetables for the home garden. Appendices include information on soil testing, home composting, fertilization, and controlling insects and diseases.
<https://shopping.clemson.edu>



Vegetable Garden Insect Guide: Identification and Control

This water-resistant, spiral-bound field guide identifies the 27 most common insect pests and 17 beneficial insects. Includes hosts, life cycle, feeding habits, and control (cultural, mechanical and biological; no chemical recommendations).
<https://shopping.clemson.edu>



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