

Starting a Community Garden



syracuse
grows

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GETTING STARTED

First, think about...

HOW THE GARDEN WILL OPERATE

- Determine if there really is a need and desire for a garden. How many neighbors are interested in getting involved? (Experience suggests there should be at least several families who will commit!)
- What kind of garden will it be – vegetable, flower, trees, a combination? And why not go organic – it’s cheaper and better for you and much better for the environment!
- Who will the garden serve--youth, seniors, special populations, people who just want an alternative to trash?
- If the project is meant to benefit a particular group or neighborhood, it is essential that the group be involved in all phases. Who has the energy and ability to create and maintain this garden? (Who is your garden group?) Who has special talents or interests, skills or strength for specific garden jobs?
- Hold a meeting of interested people. This group could become your “garden club” – those folks who will help make decisions and contribute to the garden’s development and maintenance – and you could meet every month or so. It’s smart to form this group early on (see “Organize the Garden” and “Setting up a New Gardening Organization”). Many times, these clubs take on the following responsibilities:
 - Establish garden rules (see sample rules page)
 - Accepting and reviewing garden applications (as applicable)
 - Making a garden design
 - Collecting garden dues (if any)
 - Paying water bills and rent (if any)
 - Resolving conflicts
- Choose a well-organized garden coordinator. This is not the “boss” of the garden, but someone who will keep the garden’s notes, help enforce rules, and report to the garden club. Figure out how much responsibility this person will have (or consider dividing the job so there are a couple of coordinators, that way the responsibilities aren’t so heavy), but remember that every gardener needs to take some responsibility and share some power, thereby sharing investment in the project! It’s a *community*!
- If you have enough members, form committees to accomplish tasks; consider: Funding & Resource Development; Youth Activities; Construction; Communication.
- Approach a sponsor. A sponsor is an individual or organization that supports a community garden. Site sponsorship can be a tremendous asset. Contributions of land, tools, seeds, fencing, soil improvements or money are all vital to a successful community garden. Churches, schools, citizens groups, private businesses,



<http://urbanprograms.osu.edu/urban-impacts/gardening/>

local parks and recreation departments are all potential supporters. Community Development Block Grants are sometimes available through your municipality. Syracuse community gardens also have the benefit of Syracuse Grows, for communication and developing community amongst the gardens, for gaining and pooling community resources, and for networking; it will also help in getting funding.

- Make a list of what needs to be done for your specific garden.
- Decide on a mailing address and central telephone number(s). Try to have at least 3 people who are very familiar with all pertinent information. Form a telephone tree.
- If your community garden has a budget, keep administration in the hands of several people.
- Choose a name for the garden.

CHOOSING A SITE

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, it can be removed by volunteers clearing the lot with trash bags, wheelbarrows, and pick-up trucks. 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.

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 addresses 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. We suggest you identify at least three potential sites because one or more might not be available for you to use for various reasons.

- Find out who owns the land.
- Consider past uses of the land. Is there any possibility of contamination from house paint, automotive projects, industrial byproducts? Do a soil test in the fall for nutrients and heavy metals.
- Consider the availability of water.
- Try and get a lease or agreement which allows the space to be used at least for 3 years.
- Is insurance something you need to consider? Could liability issues be addressed instead with a "hold harmless" waiver in your lease?

ORGANIZING THE GARDEN

- Are there conditions for membership (residence, dues, agreements with rules)?
- Will plots be assigned (by family size, by residency, by need, by group-- i.e., youth, elderly, etc.) or will everyone work in a communal plot and divvy up the harvest?
 - If you decide to assign plots, how large should they be (or should there be several sizes based on family size or other factors)?
 - How should plots be laid out?
 - Will the group do certain things cooperatively (such as turning in soil in the spring, planting cover crops, or composting)?
 - When someone leaves a plot, how will the next tenant be chosen?
- If the group charges dues, how will the money be used? What services, if any, will be provided to gardeners in return?
- How will the group deal with possible vandalism?
- Will there be a children's plot?
- Will the gardeners meet regularly? If so, how often and for what purposes?
- How will minimum maintenance (especially weeding) be handled both inside plots and in common areas (such as along fences, in flower beds, and in sitting areas)? (See "Divvying up Chores")
- Will there be a set of written rules which gardeners are expected to uphold? If so, how will they be enforced?
- Should your group incorporate and consider eventually owning your garden site?
- How will you handle compost? Where will the compost area be located? Will there be someone responsible for monitoring it? What kind of composting will your garden do?

SETTING UP A NEW GARDENING ORGANIZATION

Many garden clubs are organized very informally and operate successfully. Leaders "rise to the occasion" to propose ideas and carry out tasks. However, as the workload expands, many groups choose a more formal structure for their organization.

A structured program is a means to an end. It is a conscious, planned effort to create a system so that each person can participate fully and the group can perform effectively. It's vital that the leadership be responsive to the members. Structure will help an organization to last; it will promote trust; it will help your group grow and create new opportunities for leaders to develop.

If your group is new, have several planning meetings to discuss your program and organization. Try out suggestions raised at these meetings and after a few months of operation, you'll be in a better position to develop bylaws or organizational guidelines. A community garden project should be kept simple as possible, whether large or small.

Bylaws are rules that govern the internal affairs of an organization: they are officially recorded by the State or Province in which your organization resides. They are required when you form a nonprofit corporation, but are useful even if your group is a club or a group of neighbors. Many battles are won simply because one side has more pieces of paper to wave than the other. It's helpful to look over bylaws from other similar organizations if you are incorporating. Guidelines and Rules are less formal than Bylaws, and are often adequate enough for a garden group that has no intention of incorporating.

Organizational Considerations:

- What is your purpose? What are your short and long-term objectives?
- How are decisions to be made? Who chooses leaders and how?
- How will work be shared? Who does what?
- How will you raise money? Membership dues, fund raising, grants, sponsors?
- Are you open to change? Flexibility is important when goals and members change. Do you want to be incorporated or act as a club?

What goes into formal Bylaws:

- Full official name of organization and legal address.
- Organizing members, names and addresses.
- The (brief description of the) purpose, goals and philosophy of the organization.
- Membership categories and eligibility requirements.
- Membership dues, how much and when paid.
- Specify when and how often regular or special meetings of the membership are to be held, as well as regular and annual meetings of the board of directors.
- State what officers are necessary, how they are chosen, length of term, their duties and how vacancies are filled.
- Organizational dissolution processes
- State special committees, their purpose and how they operate.
- Establish a system so that bylaws can be rescinded or amended, maybe by a simple majority. State any official policies or practices: e.g.. garden group will avoid the use of hazardous substances; group will agree to keep all adjacent sidewalks in good repair and free of ice and snow in season; group will make all repairs necessary to keep equipment, fences and furniture in good order and repair.
- Include a Hold Harmless clause (sample):
"We the undersigned members of the (name) garden group hereby agree to hold harmless (name owner) from and against any damage, loss, liability, claim, demand, suit, cost and expense directly or indirectly resulting from, arising out of or in connection with the use of the (name) garden by the garden group, its successors, assigns, employees, agents and invites." For more information about whether to incorporate as a non-profit organization (a state function) or to get tax deductible charitable (501(c)3) status (a federal IRS function), go to: www.tgci.com/magazine/96summer/tobe1.asp or www.nolo.com/article.cfm



http://www.brightclean.co.uk/images/gardening_services.jpg

MANAGING YOUR COMMUNITY GARDEN

In order to offer a high quality community garden program, good management techniques are essential. Included in this fact sheet are the main ideas to consider in management, along with many different ways to carry them out.

Having written rules is very important with older groups as well as new gardens, since they spell out exactly what is expected of a gardener. They also make it much easier to deal with challenges as they arise.

Sample Guidelines and Rules

Some may be more relevant to vegetable gardens than to community flower gardens or parks. Pick and choose what best fits your situation.

- I will pay a fee of \$___ to help cover garden expenses.
- I will have something planted in the garden by (date) and keep it planted all summer long.
- If I must abandon my plot for any reason, I will notify the garden leadership.
- I will keep weeds at a minimum and maintain the areas immediately surrounding my plot if any.
- If my plot becomes unkempt, I understand I will be given 1 week's notice to clean it up. At that time, it will be re-assigned or tilled in.
- I will keep trash and litter out of the plot, as well as from adjacent pathways and fences.
- I will participate in the fall cleanup of the garden.
- I will plant tall crops where they will not shade neighboring plots.
- I will pick only my own crops unless given permission by another plot user.
- I will not use fertilizers, insecticides or weed repellents that will in any way affect other plots.
- I agree to volunteer hours toward community gardening efforts. (include a list of volunteer tasks which your garden needs).
- I will not bring pets to the garden.
- I understand that neither the garden group nor owners of the land are responsible for my actions. I THEREFORE AGREE TO HOLD HARMLESS THE GARDEN GROUP AND OWNERS OF THE LAND FOR ANY LIABILITY, DAMAGE, LOSS OR CLAIM THAT OCCURS IN CONNECTION WITH USE OF THE GARDEN BY ME OR ANY OF MY GUESTS.



Easy to Grow Garden.com

Write up a Garden Plan

A well thought-out Garden Plan is essential for any successful garden.

Take the time to look at your garden from bird's-eye and worm's-eye views and plan accordingly. These plans can serve as valuable records for this growing season and in years to come.

Observe the Site

Walk around and observe the site. It may be helpful to draw a map of the site as you find it. Consider the following factors:

- Existing structures - locations of walls, trees, rock outcrops, fences, paths, work-benches, sheds, trellises, perennial plants, water faucets, raised beds, compost heaps, greenhouses, cold-frames, and other significant features.
- Resources available - list anything and everything at the site. It is possible to work creatively with old tires, doors, containers, stones, etc.
- Accessibility – Is it open to all members of the community? Is there space to hold gatherings or workshops? Is it located near a bus or train route?
- Sunlight – pay particular attention to areas that get full sun (at least 6 hours) and places that are shadier. Visit the site at different times of day and during different seasons to get the best idea of the amount of light it receives.
- Soil condition - loose/compacted, well-draining/damp, trash or weed – covered, nutrient-rich/depleted, pH levels, lead/otherwise contaminated.
- Contours of the surface (level or uneven).
- Dimensions of food growing area.



<http://www.bb-environment.org/images/photos/HARVESTING-SWEETCORN.jpg>

Measure Your Total Planting Area

Measure and stake the corners of your garden so that you can see what you are working with. Run string around all 4 stakes just a few inches above the ground to clearly identify your boundaries.

Determine your total area (length x width).

Knowing the total area will help with your planting plan.

Create Production Goals and a Planting Plan

Now that you have assessed the space and resources available, consider your production goals for the year.

Consider:

- Who are you growing for? (garden families, donation, markets, restaurants, community gatherings)
- What crops will best meet the needs and preferences of these groups? (foods people like and use often, specialty crops for restaurant markets, crops for early spring, through summer, fall, winter-storage, unique and unfamiliar crops, crops with cultural significance, foods for preserving and processing)
- An efficient garden should be planned in advance, according to when each variety of vegetable or flower should be planted, maintained and harvested, and plotting where each crop will grow best in a given space with available resources.
- Consult records from previous years as a reference (if available).
- Make a list of crops and specific varieties you are planning to grow this season. Make special note of what has grown well in previous years.
- Consider natural methods of pest control. There are many ways to attract beneficial creatures to your garden, and certain approaches will make your garden more attractive to people, too. Adding a bird bath or bird house will attract birds, as will the creation of a garden pond. Old logs laid in a shady part of your garden will help attract toads and beetles, and flowers like sedum and butterfly bush will attract bees and butterflies. You can also purchase beneficial insects, like ladybugs, and set these loose in your garden.

For each crop, consider:

- Will it be grown once a season (tomatoes, eggplants)? Will it be planted early and late? Can it be planted in succession for continual harvest?
- Will it be grown from seed or transplant?
- Will you be starting the transplant? If so, what is needed? (*see “Starting Garden Transplants”*)
- How much will you plant/harvest?
- When will you direct seed/plant? (*refer to “Urban Planting Calendar”*) Plant during suggested time periods to make the most of each crop.
- When do you expect to harvest?
- Where will you plant each vegetable? In which bed? Crop-rotation is important to keep in mind when deciding where you plant different vegetables (*see Minimizing Vegetable Disease tip-sheet in this tool-kit*).
- When you have a reliable calendar for planting, thinning, and harvesting, draw a garden plan to scale so that you can intelligently decide what to plant, where to plant it, and how much seed to purchase.
- Keep your garden plan at-hand throughout the season. Remember to plant, thin, and harvest on a timely basis.



<http://www.getrichslowly.org/images/augustbounty.jpg>

What Will it Cost?

It's important to have an idea about how much the garden will cost to get started. This list of general (estimated) expenses can be modified to fit the needs of your garden:

Tools and equipment...

Shovels (3)	\$25 each = 75.00
Trowels (5)	\$7 each = 35.00
Pruners	\$20
Scissors	\$10
Loppers	\$30
Hedge shears	\$25
Metal rake	\$25
Plastic leaf rake	\$20
Hammers (4)	\$25 each = 100.00
Nails – 5 boxes of 1,000	\$10 each = 50.00
Handsaws (2)	\$20 each = 40.00
Saw horses	\$30
Wheelbarrow	\$35
*Rototiller	\$700
Kid-sized tools and gloves	(variable)

Building Materials...

Lumber to build raised beds – Untreated - various widths & at least 4 ft long	\$3 each = 12.00 per bed x 4 beds = 48.00
Plywood sheets	\$25 each

Planting and Gardening Materials...

Garden gloves (10)	\$10 each = 100.00
Vegetable and flower seeds & starter plants	\$500
Tomato cages and dowels	\$3 each = 36.00
Plant pots, tubs, and containers	variable
Cover Crop Seed	\$5 per pound x 4 pounds = 20.00
Soaker hoses and spray nozzles	\$50
Compost	\$50
Pre-bagged commercial fertilizer (manure)	\$5 each = 50.00
Pesticide free mulch	0 (get from city)
Topsoil	\$3 per bag = 30.00

Compost bins (3)	\$100 each = 300.00
Food grade barrels for rain barrels	\$60
Twine (5 balls)	\$12 each = 60.00
Watering cans (2)	\$20 each = 40.00
Bed liners	\$20 each

Structural Materials... all of these are optional

- Shade houses/arbor
- Trellis
- Greenhouse
- Tool shed
- Fencing material –
 - Wood posts
 - Medium gauge wiring
 - Hardware cloth
 - Mesh fencing

...And, though it's free, don't underestimate the value of volunteer labor!

- Bricks and cinder blocks
- Chipping, pebbles and stones
- Wood chips and wood pallets
- Chairs and benches
- Tables
- Charcoal barbeque grills

Approximate Total Cost: \$2600.00 plus Property Rental

**Rototiller can be rented or (preferably) borrowed, but its full price is included in this total cost estimation.*



<http://weburbanist.com/wp-content/uploads/2008/06/community-garden1.jpg>

Monthly Gardening Calendar



<http://upload.wikimedia.org/wikipedia/commons/c/cf/Pears.jpg>

* These gardening tips are from the New York Botanical Garden and are applicable for the southeastern New York region: USDA Plant Hardiness Zones 6a and 6b, which include New York City, Northern New Jersey, Rockland County, Westchester County, Southern Connecticut, and parts of Long Island. Plant hardiness zones refer to geographic areas where the growing season of plants is determined by the time of killing frosts in the spring and fall. If you live in a more southerly plant hardiness zone, you can start gardening earlier in the season or in more northerly zones, you can start later. Even within zones, climatic factors such as altitude, proximity to water, wind exposure, winter sun exposure and snow cover contribute to the existence of different "microclimates" and can influence plant adaptability. See http://www.nybg.org/hgc_online/gardening_calendar.php for more.

January

Planning

- Begin to use garden notes, photos, and sketches to assess areas that need plants
- Determine types and quantities of plants to order
- Order plants from seed and nursery catalogues

Chores and Maintenance

- Inspect ornamental trees and shrubs for scale insects
- If a thaw occurs, apply an antidesiccant to newly planted narrow-leaved or broad-leaved evergreens
- Check for frost heaving on perennials and cover with extra mulch as necessary
- Use wood ashes from the fireplace as a good source of potash
- Avoid the use of salt to melt snow, as it is toxic to most plants. Use sawdust, sand, or cat litter instead
- Check on dahlia, canna, and gladiolus bulbs for rotting and/or drying out
- Keep bird feeders filled throughout winter

Pruning/Fertilizing

- Prune away storm-damaged branches promptly to prevent tearing of the bark
- Prune forsythia, pussy willow, quince, etc. for forcing indoors

Indoors

- When buying houseplants in winter, be sure to wrap them well for the trip home. This prevents the foliage from freezing and protects tropicals from drafts
- Give houseplants as much light as possible as days grow shorter
- Provide houseplants with increased humidity; mist often or place plants over a tray of moist pebbles
- As houseplants grow more slowly during winter, increase the time between waterings but do not cut back on the amount of water
- On frigid nights protect indoor plants from freezing; move them away from the glass or cover glass with thick newspaper or cardboard
- Continue to clean leaves of large and smooth-leaved houseplants like dracaena, philodendron, ficus, etc.
- Inspect houseplants for insect pests. Remove pests by hand and spray with insecticidal soap, if needed
- Clean clay pots by soaking overnight in a solution of 1 gallon of water, 1 cup of vinegar, and 1 cup of bleach

What to Plant in January

Directly Sown

Abronia, Ageratum, Alyssum, Antirrhinum, Arctotis, Bellis, Calendula, Calliopsis, Callistephus, Carnation, Centaurea, Chrysanthemum, Clarkia, Cleome, Collinsia, Convolvulus, Coreopsis, Cosmos, Dahlia, Dimorphotheca, Eschscholtzia, Gilia, Godetia, Gomphrena, Gypsophila, Larkspur, Linaria, Lupine, Mallow, Mimulus, Nasturtium, Petunia, Phacelia, Phlox, Pinks, Primula, Scabiosa, Stevia, Sweetpea, Verbena.

As Full Plants

Alyssum, Antirrhinum, Arctotis, Bellis, Calendula, Canterburybells, Carnation, Centaurea, Coreopsis, Cynoglossum, Dimorphotheca, Heuchera, Iceland Poppy, Geum, Myosotis, Pansies, Petunia, Primula, Pinks, Scabiosa, Stocks, Verbena, Viola.

Bulbs, Corms and Tubers

Alstroemeria, Anemone, Babiana, Calochortus, Gladiolus, Haemanthus, Ixia, Leucocoryne, Leucojum, Montbretia, Spartaxis, White-calla.

By Division Or Clumps

Acanthus, Agapanthus, Amaryllis, Aster, Dicentra, Gazania, Hemerocallis, Hollyhock, Japanese Iris, Sedum, Daisy, Shasta, Periwinkle, Thalictrum, Thyme.

February

Planning

- Continue to use garden notes, photos, and sketches to assess areas that need plants
- Finish ordering seeds
- Continue to order plants from nursery catalogues for later delivery

Chores and Maintenance

- Check on winter plant protection; add mulch and adjust plant stakes as necessary
- Continue to inspect ornamental trees and shrubs for scale insects
- Use wood ashes from the fireplace as a good source of potash
- Avoid the use of salt to melt snow, as it is toxic to most plants. Use sawdust, sand, or cat litter instead
- Check on dahlias, cannas, and gladiolus bulbs for rotting and/or drying out
- Keep bird feeders filled throughout winter

Planting

- Take cuttings of indoor plants now to use as bedding plants in the late spring; e.g. lantana, geranium, coleus, heliotrope, fuschia, begonia, etc.
- Sow seeds of annuals which require a long growing season, e.g. lobelia, petunia, vinca, browallia, snapdragon, verbena, etc.

Pruning/Fertilizing

- Continue to prune away storm-damaged branches promptly to prevent tearing of the bark
- Prune forsythia, pussy willow, quince, etc. for forcing indoors
- Prune summer and fall blooming shrubs

Indoors

- Continue to give houseplants increased humidity; mist often or place plants over a tray of moist pebbles
- On frigid nights continue to protect indoor plants from freezing; move them away from the glass or cover glass with thick newspaper or cardboard
- Continue to clean leaves of large and smooth-leaved houseplants like dracaena, philodendron, ficus, etc.
- Inspect houseplants for insect pests. Remove pests by hand and spray with insecticidal soap, if needed
- Clean clay pots by soaking overnight in a solution of 1 gallon of water, 1 cup of vinegar, and 1 cup of bleach

What to Plant in February

Directly Sown

Abronia, Ageratum, Alonsoa, Alyssum, Amaranthus, Anagallis, Anemone, Antirrhinum, Aquilegia, Arctotis, Baileya, Bloomeria, Brachycome, Browallia, Calendula, Calliopsis, Callistephus, Carnation, Celosia, Centaurea, Charicis, Chrysanthemum, Clarkia, Cleome, Collinsia, Convolvulus, Coreopsis, Cosmos, Cynoglossum, Dahlberg Daisy, Dahlia, Diascia, Dimorphotheca, Emilia, Eschscholtzia, Exacum, Flax, Forget-me-not, Gaillardia, Gilia, Godetia, Gomprena, Gypsophila, Helichrysum, Hunnemannia, Immortelle, Impatiens, Kochia, Larkspur, Linaria, Lobelia, Lonas, Lupine, Malcomia, Mallow, Marigold, Maurandia, Mentzelia, Mimulus, Nasturtium, Nemesia, Nemophila, Nicotiana, Periwinkle, Petunia, Phacelia, Phlox, Poppy, Primula, Quamoclit, Salpiglossis, Salvia, Scabiosa, Schizanthus, Thymophylla, Stevia, Stocks, Strawflower, Sweetpea, Verbena, Zinnia.

To Be Seeded in Flats

Ageratum, Alonsoa, Antirrhinum, Arctotis, Calendula, Callistephus, Centaurea, Coreopsis, Cosmos, Cynoglossum, Diascia, Exacum, Gaillardia, Geum, Gomphrena, Gypsophila, Iceland Poppy, Immortelle, Lobelia, Marigold, Mimulus, Nemesia, Nicotiana, Penstemon, Periwinkle, Petunia, Phlox, Rehmannia, Salpiglossis, Salvia, Schizanthus, Streptocarpus, Torenia, Thracelium, Verbena, Zinnia.

As Full Plants

Ageratum, Antirrhinum, Arctotis, Bellis, Calendula, Canterburybells, Centaurea, Cynoglossum, Dimorphotheca, Exacum, Gaillardia, Geum, Heliotrope, Heuchera, Lobelia, Pansies, Petunia, Pinks, Scabiosa, Stocks, Verbena, Viola, Xanthisma.

Bulbs, Corms and Tubers

Acidantha, Alstroemeria, Anemone, Anomatheca, Bessera, Caladium, Canna, Colocasia, Crinum, Dahlia, Galtonia, Gladiolus, Gloriosa, Gloxinia, Haemanthus, Montbrettia, Polianthes, Schizostylis, Sparaxis, Zephyranthes, White-calla.

By Division Or Clumps

Agapanthus, ajuga, antholyza, ameria, Aster, Canna, Gerbera, Hedychium, Physostegia, Salvia, Sedum, Shasta Daisy, Thalictrum, Thyme, Torch-lily, Water-lily.

March

Planning

- Choose planting areas based on exposure to sun, shade, and wind; consider distance from water source
- Test for soil types and pH levels before major planting

Chores and Maintenance

- Carefully remove winter mulches from planting beds
- Dig beds in preparation for spring planting as soon as earth is friable
- Add compost in four to six inch layers and work into planting bed soil
- Remove protective cover from evergreens
- Reset frost-heaved plants
- Apply horticultural oil sprays to dormant trees and shrubs before buds open and if there is no danger of night frost
- As ground becomes workable, de-thatch lawn; fill in low spots with soil; fertilize established lawns

Planting

- Plant deciduous and evergreen trees and shrubs, weather and soil conditions permitting
- Sow seeds of annuals and vegetables indoors that require 10-12 weeks before transplanting
- Sow radish and lettuce seeds directly into the vegetable garden
- Plant cold weather vegetables like spinach, peas, lettuce, and broccoli as soon as soil is workable
- Plant and transplant perennials
- Divide and transplant summer-blooming perennials
- Soak mail order bare-root plants before planting
- Plant roses

Pruning/Fertilizing

- Prune all plant material to remove any diseased, dead, weak, or crossing branches
- Complete tree pruning before new growth begins
- Prune late-flowering shrubs such as buddleia and *Hydrangea paniculata* but wait until after flowering on early-flowering shrubs like forsythia, *Hydrangea macrophylla*, rhododendron, and syringa
- Wait to prune evergreens, hedges, and other shrubs until late spring into early summer
- Prune all fruit trees before growth begins
- Prune hybrid tea roses, floribundas, and grandifloras but wait until after flowering on climbers and ramblers
- Prune back leggy perennials
- Cut back ornamental grasses to new shoots

- Fertilize deciduous, broad-leaved and needle-leaved evergreen trees and shrubs if not fed in the fall
- Apply fertilizer to roses as new growth begins
- Fertilize and lime vegetable garden

Indoors

- Begin to transplant pot-bound houseplants
- Continue to inspect for pests and control as needed
- Cut back leggy houseplants

What to Plant in March

Directly Sown

Abronia, Ageratum, Alonsoa, Amaranthus, Alysum, Anagallis, Anemone, Anirrhinum, Aquilegia, Arctotis, Baileya, Brachycome, Browallia, Calendula, Callistephus, Calliopsis, Carnation, Charieis, Celosia, Centaurea, Chrysanthemum, Clarkia, Collinsia, Convolvulus, Coreopsis, Cosmos, Cynoglossum, Dahlberg Daisy, Dahlia, Diascia, Dimorphothecca, Emilia, Eschscholtzia, Exacum, Flax, Forget-me-not, Gaillardia, Gilia, Godetia, Gomphrena, Gypsophila, Hunnemannia, Immortelle, Impatiens, Kochia, Larkspur, Linaria, Lobelia, Lonas, Lupine, Madiera-vine, Malcomia, Mallow, Marigold, Moonflower, Morning-glory, Mimulus, Nasturtium, Nemesia, Nemophila, Nicotiana, Periwinkle, Petunia, Phlox, Pinks, Poppies, Primula, Pueriria, Quamoelit, Salpiglossis, Salvia, Scabiosa, Schizanthus, Stevia, Stocks, Strawflower, Thymophylla, Torenia, Verbena, Viola, Zinnia.

Seeds Sown in Flats

Agathaea, Ageratum, Alonsoa, Antirrhinum, Arctotis, Begonia, Browallia, Calendula, Callistephus, Canterburybells, Celosia, Centaurea, Coreopsis, Cosmos, Cynoglossum, Dahlia, Diascia, Exacum, Gaillardia, Gerberia, Geum, Gomphrena, Heliotrope, Immortelle, Impatiens, Lobelia, Lunaria, Malcomia, Mallow, Marigold, Mimulus, Nemesia, Nicotiana, Penstemon, Phlox, Petunia, Periwinkle, Rehmannia, Salvia, Schizanthus, Stokesia, Streptocarpus, Torenia, Zinnia.

As Full Plants

Ageratum, Alyssum, Antirrhinum, Arctotis, Bells, Centaurea, Coreopsis, Brachycome, Calendula, Calliopsis, Canterburybells, Centaurea, Coreopsis, Cynoglossum, Delphinium, Dimorphothecca, Exacum, Gaillardia, Gerberia, Geum, Heliotrope, Iceland Poppy, Lobelia, Marigold, Mimulus, Nemesia, Penstemon, Periwinkle, Petunia, Pinks, Salpiglossis, Salvia, Scabiosa, Stevia, Stocks, Verbena, Xanthisma.

Bulbs, Corms and Tubers

Achimines, Acindanthera, Anomatheca, Caladium, Canna, Colocasia, Crinum, Dahlia, Galtonia, Gladiolus, Gloriosa, Gloxinia, Madiera-vine, Montbretia, Polianthes, Schizostylis, Tigridia, Tuberous Begonias, Zephyranthes.

By Division or Clumps

Agapanthus, Ajuga, Antholyza, Antigonon, Billbergia, Calla, Gerberia, Hedychium, Physostegia, Plumbago, Romneya, Salvia, Sedum, Sisyrinchium, Stokesia, Torchlily, Tigridia, Water-lily, Zygocactus.

April

Planning

- Choose planting areas based on exposure to sun, shade, wind, and distance from water source
- Study garden for gaps that can be filled by spring-flowering bulbs, and order in August for best selection
- Choose flowering trees and shrubs for color and time of bloom to add to the garden in fall

Chores and Maintenance

- Continue to remove winter mulches and debris
- Continue to dig beds in preparation for planting
- Complete adding compost to planting bed soil
- Place peony supports
- Cultivate planting beds and carefully remove weeds
- Remove mounded earth from roses
- Prepare bare-root and potted roses for planting; soak overnight in fish emulsion
- Continue to apply horticultural oil sprays to control insect pests on trees if temperature is over 40°
- Test lawn soil and apply lime if warranted

Planting

- Continue to plant deciduous and evergreen trees and shrubs, weather and soil conditions permitting
- Sow seeds of hardy annuals in place in the garden
- Sow seeds of peas, carrots, and radishes
- Start seed indoors for summer crops
- Plant out seedlings of cauliflower, cabbage, and broccoli if soil is workable
- Plant out seedlings of cool-season annuals like pansies and snapdragons
- Continue to plant and transplant perennials
- Complete rose planting
- Plant strawberries
- Re-seed bare lawn areas

Pruning/Fertilizing

- Complete removal of diseased, weak, or crossing branches
- Complete rose pruning but wait until after flowering on climbers and ramblers
- Prune late-flowering shrubs such as buddleia and hydrangea
- Prune early spring-flowering shrubs immediately after flowers die
- Wait to prune evergreens, hedges, and other shrubs until early summer

- Fertilize fruit trees and roses
- Fertilize perennials when you see 2-3" of new growth
- Fertilize bulbs as they finish blooming
- Complete lawn fertilization if not done in the fall

Indoors

- Continue to transplant houseplants that need repotting
- Continue to inspect for pests and control as needed
- Complete shaping leggy houseplants

May

Chores and Maintenance

- Finish preparation of planting beds
- Continue to cultivate planting beds and carefully remove young weeds
- Dig and divide early-blooming perennials after flowering
- Lift, divide, and replant late summer and fall-blooming perennials
- Set supports for floppy plants, vines, and vegetables
- Mow lawns regularly to keep grass at 2½" height
- Begin watering program as necessary
- Begin weeding
- Aerate and moisten compost pile to speed decomposition
- Mulch azaleas, rhododendrons, and other ericaceous ornamentals with acid mulch
- Mulch planting beds
- Deadhead bulbs but allow foliage to remain until yellow to nourish bulbs for next year's display
- As night temperatures moderate into the 60's, move houseplants outdoors (avoid full sun and windy locations)
- Look for pests and other problems; spotting early can mean less chemical controls. Note: slugs and caterpillars can be removed manually
- Begin application of deer repellents

Planting

- Move self-sown annuals and perennials to desired locations
- Sow seeds of corn, cucumber, and melon directly in the garden
- Harden off tomato, eggplant, and pepper transplants before planting out at end of month
- Complete planting deciduous trees and shrubs, weather and soil conditions permitting
- Continue to plant and transplant perennials
- Plant summer annuals after last frost date
- Plant summer-flowering bulbs such as gladiolas and dahlias after last frost date
- Plant caladium and tuberous begonias in shady spots
- Complete re-seeding bare lawn areas

Pruning/Fertilizing

- Pinch back late summer and fall-blooming perennials
- Continue to prune all plant material to remove any diseased, dead, weak, or crossing branches
- Prune early spring-flowering shrubs after blooming
- Wait to prune evergreens, hedges, and other shrubs until late spring into early summer
- Begin deadheading roses
- Fertilize roses

- Fertilize needle evergreens with acid type fertilizer
- Fertilize bulbs as they finish blooming
- Fertilize annuals and container plants
- Fertilize lawns in late May (leaving grass clippings on the lawn can reduce the need to fertilize)

Indoors

- Finish re-potting houseplants as needed
- Take out houseplants as temperatures moderate; move to partially shaded, wind-protected location

June

Chores and Maintenance

- Continue to cultivate planting beds to remove weeds
- Continue to dig and divide early-blooming perennials after flowering
- Water, water, water as necessary
- Continue to mulch planting beds
- Set supports for floppy plants, vines, and vegetables
- Deadhead rhododendrons, lilacs, and perennials after flowering
- Add to, aerate, and moisten compost pile to speed decomposition
- Continue to check for pests and other problems, and treat as necessary
- Mow lawns regularly to keep grass at 2-2½" height
- Leave grass clippings on lawn to improve availability of nitrogen
- Water lawns if there is less than 1" of rain per week
- Harvest cool-weather lettuce, radishes, and scallions
- Begin to spray roses every week with baking soda solution* to protect against black spot disease
- Continue application of deer repellents

* Cornell University formula consists of: 3 tsp. baking soda, 2½ tbs. summer-weight horticultural oil, mixed with 1 gallon of water.

Planting

- Complete moving self-sown annuals and perennials to desired location
- Sow seeds of fast-growing annuals like marigolds, zinnias, and cosmos directly in the garden
- Sow seeds of heat-tolerant vegetables
- Continue to plant and transplant perennials, weather and soil conditions permitting
- Finish planting summer annuals
- Complete planting summer-flowering bulbs such as cannas, gladiolas, and dahlias
- Plant caladium and tuberous begonias in shady spots

Pruning/Fertilizing

- Continue to prune all plant material to remove any diseased, dead, weak, or crossing branches
- Complete pruning early spring-flowering shrubs
- Prune evergreens and evergreen hedges into early summer
- Continue deadheading roses
- Fertilize roses after peak bloom
- Complete fertilizing spring-flowering bulbs
- Fertilize annuals and container plants
- Fertilize vegetables

What to Plant in June

Directly Sown

Ageratum, Alyssum, Calendula, Celosia, Centaurea, Cineraria, Cosmos, Dahlia, Gypsophila, Impatiens, Malcomia, Mallow, Marigold, Mirabilis, Nasturtium, Nemophila, Nicotiana, Periwinkle, Petunia, Poppies, Portulaca, Pueraria, Salpiglossis, Tithonia, Torenia, Zinnia

As Full Plants

Acalypha, Ageratum, Alternanthera, Amaranthus, Callistephus, Celosia, Chrysanthemum, Coleus, Coreopsis, Cosmos, Croton, Cnoglossum, Gaillardia, Impatiens, Lobelia, Nicotiana, Marigold, Penstemon, Perwinkle, Petunia, Pinks, Portulaca, Salvia, Stokesia, Streptocarpus, Torenia, Verbena, Zinnia.

Bulbs, Corms and Tubers

Acanthus, Brunsvigia, Iris, Leucojum, Lycoris, Nerine, Sternergia, Tigridia, Zephyranthes.

July

Chores and Maintenance

- If rain is lacking, practice water-wise horticultural techniques
- Determine which plants are most important, and water them first
- Water plants early in the day through drip irrigation or hand-held hose with shut-off nozzle
- Re-apply mulch to plantings to help conserve moisture
- Allow lawns to go dormant; they will green up again when rain returns
- Continue to remove weeds that compete for water
- Continue to stake floppy plants and vines
- Mow lawns regularly to keep grass height at 2-2½"
- Continue to aerate and moisten compost pile to speed decomposition
- Continue to apply acid mulch to azaleas, rhododendrons, and other ericaceous ornamentals
- Apply a summer mulch to rose beds to preserve moisture and control weeds
- Deadhead annuals and perennials to encourage continuous bloom, and cut back any rampant growth
- Continue to spray roses weekly with a baking soda fungicide (See June Tips for recipe)
- Remove any fallen leaves and debris that can harbor insect pests and disease organisms
- Pinch back asters and chrysanthemums one last time
- Finish deadheading rhododendrons and lilacs
- Continue to apply deer repellent

Planting

- Continue to re-pot any houseplants as needed
- Continue to lift, divide, and propagate spring-flowering perennials
- Sow seed of lettuce, kale, broccoli, cabbage, radishes, and arugula for fall harvest
- Sow seed of English daisy, forget-me-not, and pansy now
- Continue to propagate shrubs from softwood cuttings
- Propagate spring-flowering perennials
- Propagate herbs from cuttings
- Continue transplanting container grown plants

Pruning/Fertilizing

- Deadhead hybrid tea, grandiflora, floribunda, miniature, repeat-blooming shrub, and climbing roses
- Prune climbing roses after flowering
- Prune and thin large shade trees to increase light for lawns and planting beds
- Prune evergreens, and deciduous and evergreen hedges into early summer
- Prune all raspberry canes that have completed fruiting to the ground

- Fertilize broad-leaved flowering evergreen shrubs with topdressing of oakleaf compost and/or cottonseed meal
- Fertilize needle evergreens with acid type fertilizer
- Fertilize roses
- Continue to fertilize annuals and container plants each month
- Fertilize chrysanthemums every 2-3 weeks until buds form
- Fertilize vegetables
- Leave nitrogen-rich grass clippings on lawn

August

Planning

- Order spring-flowering bulbs for fall planting
- Assess areas in the garden that may need additional planting
- Prepare a landscape plan for fall planting of trees and shrubs
- Continue to take garden notes and/or photographs to plan future plantings

Chores and Maintenance

- If rain is still lacking, continue to practice water-wise horticultural techniques
- Determine which plants are most important, and water them first
- Allow lawns to go dormant; they will green up again when rain returns
- Remove weeds before they set seed
- Mow lawns regularly to keep grass at 2 ½" height
- Spot seed to renovate existing lawns between August 15 and September 15
- De-thatch and aerate existing lawns to promote root growth
- Continue to aerate and moisten compost pile to speed decomposition
- Continue to deadhead annuals and perennials to encourage continuous bloom
- Continue to check for insect pests and treat accordingly
- Continue to remove any fallen leaves and debris that can harbor insect pests and disease organisms
- Continue to apply deer repellent
- Cut flowers for drying: yarrow, strawflower, gomphrena, cockscomb, etc.
- Put up hummingbird feeder

Planting

- Continue to propagate spring-flowering perennials
- Continue to propagate herbs from new growth and transplant into pots for winter use
- Divide bearded Iris and discard any borer-damaged parts
- Plant late-season annuals like ornamental kale and cabbage for fall color
- Plant out seedlings of cool vegetable plants for fall harvest
- Sow seed of late-harvest vegetables such as carrots, beets, and turnips
- Plant out seedling biennials for next year's bloom
- Plant broad-leaved and needle-leaved evergreens from late August through October 15

Pruning/Fertilizing

- Continue to deadhead roses
- Prune summer-flowering trees and shrubs after flowering is complete
- Lightly prune overgrown hedges and deciduous shrubs

- Cut back leggy annuals
- Feed needle and broad-leaved evergreens with iron chelate if leaves are yellowing
- Fertilize roses to encourage last new growth and hardening off before first frost
- Continue to fertilize annuals and container plants each month
- Continue to fertilize chrysanthemums weekly until buds show color

Indoors

- Shape and pinch back houseplants before returning them indoors
- Check houseplants for insect pests and treat as necessary before bringing them in

September

Planning

- Complete ordering spring-flowering bulbs and other plants for fall planting
- Continue to assess areas in the garden that may need additional planting
- Continue to work on a landscape plan for fall planting of trees and shrubs
- Continue to take garden notes and/or photographs to plan future plantings

Chores and Maintenance

- If rain is still lacking, continue to practice water-wise horticultural techniques
- De-thatch and aerate existing lawns to promote root growth
- Mow lawns regularly to keep grass at 2 ½" height
- Complete lawn restoration before September 15
- Collect seed from perennials and annuals
- Continue to cut flowers for drying: yarrow, strawflower, gomphrena, cockscomb, etc.
- Remove and compost spent annuals and fallen leaves
- Continue to aerate and moisten compost pile to speed decomposition
- Continue to check for insect pests and treat accordingly
- Continue to remove any fallen leaves and debris that can harbor insect pests and disease organisms
- Continue to apply deer repellent
- Take in tender aquatic plants and tropical fish from ponds
- Begin to feed birds

Planting

- Plant and transplant broad-leaved and needle-leaved evergreens through October 15
- Continue to propagate herbs from new growth and transplant into pots for winter use
- Continue to divide and transplant early-blooming perennials
- Divide daylilies after flowering
- Plant lilies
- Sow hardy annuals in prepared planting beds
- If weather is cool, begin planting spring-flowering bulbs but wait until late October to plant tulips
- Plant late-season annuals like ornamental kale and cabbage for fall color
- Sow parsley, radish, lettuce, carrot, and onion
- Complete planting out seedling biennials

Pruning/Fertilizing

- Prune rambler roses

- Prune to remove any diseased and dead rose canes
- Root prune wisteria that doesn't bloom
- Add organic matter such as manure, compost and/or leaf mold to improve garden soils
- Fertilize roses one last time
- Fertilize lawns with organic fertilizer to stimulate winter root development

Indoors

- If frost threatens, take in houseplants and pinch back houseplants before returning them indoors
- Check houseplants for insect pests and treat as necessary before bringing them in
- Begin to force poinsettias for Christmas. Move indoors to a sunny location and cover for 14 hours each night for a period of 6-10 weeks
- Take cuttings of begonias, geraniums, solenstemon (coleus), etc. to grow on as houseplants

October

Planning

- Assess areas in the garden that need additional planting
- Continue to use garden notes and photographs to plan for future plantings
- Prepare landscape sketches for next season

Chores and Maintenance

- If rain is lacking, continue to thoroughly water trees, shrubs, planting beds, and lawn areas, especially evergreens
- Compost fallen leaves and garden debris such as annuals and spent vegetable plants
- Continue to weed, weed, weed
- Complete staking chrysanthemums, water and fertilize
- Lift and store tender bulbs, i.e., cannas, dahlias, and gladiolus after first frost
- Core aerate to reduce thatch on lawns
- Mow lawns to 1½" height
- Keep bird feeders filled

Planting

- Complete planting and transplanting broad-leaved and needle-leaved evergreens before October 15, and water thoroughly
- Plant and transplant deciduous trees and shrubs after leaf fall between October 15 and December 1
- Plant spinach and garlic
- Plant ornamental cabbage and kale
- Complete lifting and dividing iris, lily-of-the-valley, and daylilies
- Pot up parsley, chives, and rosemary to grow indoors
- Plant bare-root roses
- Continue to plant spring-flowering bulbs; begin planting tulips before month's end
- Pot up amaryllis, tulips, and other prepared bulbs and store in a cool, dark place until ready to force

Pruning/Fertilizing

- Complete pruning of rambler roses
- Prune late-flowering shrubs and trees when dormant
- Fertilize deciduous and evergreen shrubs
- Fertilize lawn with 3-1-2 plant food

Indoors

- Bring in all houseplants before frost
- Hold off on fertilizing houseplants; resume in March

What to Plant in October

Directly Sown

Abronia, Ageratum, Alonsoa, Alyssum, Anagallis, Antirrhinum, Arctotis, Baileya, Bellis, Brachycome, Calendula, Calliopsis, Canterburybells, Carnation, Centaurea, Cineraria, Clarkia, Cleome, Collinsia, Coreopsis, Cynoglossum, Delphinium, Dimorphotheca, Eschscholtzia, Flax, Gaillardia, Gilia, Godetia, Gypsophila, Larkspur, Linaria, Lunaria, Lupine, Malcomia, Mallow, Maurandia, Nasturtium, Nemesia, Nemophila, Nicotiana, Pansies, Penstemon, Petunia, Pinks, Poppies, Primula, Scabiosa, Schizanthus, Stevia, Stock, Strawflower, Sweetpea, Verbena, Viola.

As Full Plants

Alyssum, Antirrhinum, Arctotis, Bellis, Brachycome, Calendula, Canterburybells, Centaurea, Cineraria, Clarkia, Coreopsis, Delphinium, Dimorphotheca, Gaillardia, Gypsophila, Heuchera, Iceland Poppy, Iberis, Lobelia, Mallow, Pansies, Stocks, Viola.

Seeded In Flats

Ageratum, Antirrhinum, Arctotis, Bellis, Brachycome, Calendula, Canterburybells, Carnation, Centaurea, Cineraria, Coreopsis, Cynoglossum, Delphinium, Dimorphotheca, Exacum, Forget-me-not, Gaillardia, Geum, Godetia, Gypsophila, Iberis, Iceland Poppy, Mallow, Mimulus, Nemesia, Pansies, Penstemon, Periwinkle, Petunia, Primula, Scabiosa, Stocks, Trachelium, Verbena, Viola.

Bulbs, Corms and Tubers

Allium, Alstroemeria, Anemone, Antholyza, Babiana, Bessera, Brunsvigia, Calochortus, Camassia, Clivia, Commelina, Dierama, Dipidax, Elisena, Freesia, Gladiolus, Ixia, Lachenalia, Leucocoryne, Lycoris, Lilium, Moraea, Neomarica, Montbretia, Muscari, Narcissus, Ornithogalum, Oxalis, Pancratium, Ranunculus, Scilla, Bulbous Iris, Tritoma.

By Division Or Clumps

Acanthus, Agapanthus, Alstroemeria, Amaryllis, Anchusa, Billbergia, Bletilla, Crinum, Dahlia, Dierama, Eremurus, Eryngium, Fall Asters, Gazania, Gerberia, Gloriosa, Heychium, Hemerocallis, Heuchera, Japanese Iris, Lilium, Neo-marica, Nerine, Orchid Iris, Oriental Poppy, Pancratium, Penstemon, Periwinkle, Romneya, Physostegia, Shasta Daisy, Stokesia, Tigridia, Tritoma, Veronica.

November

Planning

- Have soil tested at a local cooperative extension service to determine pH and nutritional levels

Chores and Maintenance

- Continue to thoroughly water trees, shrubs, lawn areas and planting beds until ground freezes
- Complete removal of fallen leaves and debris to protect from overwintering of insects and disease organisms
- Cut back perennials to 4-5", but leave ornamental grasses to provide winter interest until spring
- Mulch boxwood and broad-leaved evergreens before ground freezes
- Mulch flower beds to keep soil temperature stable and prevent winter injury from frost heaving
- Provide burlap windbreaks for boxwood and broad-leaved evergreens. Install stakes before ground freezes
- Protect trees from mouse damage with wire mesh trunk guards
- Protect shrubs from deer with burlap or netting
- Mow lawn one final time to a height of 1½-2"
- Aerate soil around rose roots and hill up the earth 10-12" around the crown after a heavy frost
- Continue to feed birds

Planting

- Continue to plant deciduous trees and shrubs until the ground freezes
- Complete planting spring-flowering bulbs
- Propagate deciduous shrubs such as hydrangea, viburnum, and weigela; and evergreens such as ilex, juniperus, and taxus
- Pot hardy spring bulbs for indoor forcing

Pruning/Fertilizing

- Fertilize trees and shrubs before the ground freezes so that food is available to plants in early spring
- Incorporate lime and fertilizer in the annual and vegetable gardens for next growing season
- Complete pruning of late-blooming trees and shrubs
- Prune early spring-flowering shrubs only to remove diseased or damaged branches to preserve buds

Indoors

- Give houseplants as much light as possible as lower light days begin
- Continue to let up on fertilizing indoor plants until spring

- Provide houseplants with increased humidity; mist often or place plants over a tray of moist pebbles
- Pot up prepared bulbs for indoor forcing
- Begin to increase the time between waterings but do not cut back on the amount of water

What to Plant in November

Directly Sown

Abronia, Ageratum, Alyssum, Antirrhinum, Aquilegia, Arctotis, Bellis, Calendula, Calliopsis, Canterburybells, Carnation, Clarkia, Cleome, Collinsia, Coreopsis, Delphinium, Dimorphotheca, Eschscholtzia, Flax, Forget-me-not, Gaillardia, Gillia, Godetia, Gypsophila, Iberis, Larkspur, Linaria, Lupine, Malcomia, Mallow, Mentzelia, Nemophila, Nicotiana, Pansies, Petunia, Phacelia, Pinks, Poppies, Primula, Scabiosa, Stevia, Strawflower, Sweetpea, Veronica, Viola.

As Full Plants

Alyssum, Antirrhinum, Arctotis, Bellis, Brachycome, Canturburybells, Carnation, Cineraria, Dicentra, Dimorphotheca, Forget-me-not, Geum, Gypsophila, Heuchera, Iceland Poppy, Iberis, Mallow, Pansies, Penstemon, Petunia, Pinks, Primula, Stocks, Viola.

Seeded In Flats

Ageratum, Agatheaea, Antirrhinum, Brachycome, Calendula, Centaurea, Cynoglossum, Dimorphotheca, Godetia, Gypsophila, Iceland Poppy, Lobelia, Mallow, Mimulus, Pansies, Petunia, Primula, Scabiosa, Stocks, Trachelium, Viola.

Bulbs, Corms and Tubers

Alstroemeria, Anemones, Anomatheca, Babiana, Bessera, Bradiaea, White-calla, Calochortus, Camassia, Clivia, Freesia, Ixia, Leucocoryne, Leucojum, Lilium, Moraea, Montbretia, Narcissus, Neo-marica, Nerine, Muscari, Ornithogalum, Oxalis, Pancratum, Ranunculus, Scilla, Schizostylis, Sparaxis, Tigridia, Tulips.

By Division Or Clumps

Agapanthus, Alstroemeria, Amaryllis, Anchusa, Armeria, Arum, Crinum, Dahlia, Dicentra, Eryngium, Fall Asters, Gazania, Gloriosa, Hemerocallis, Heuchera, Hollyhock, Japanese Iris, Orchid Iris, Oriental Poppy, Pasithea, Penstemon, Periwinkle, Sedum, Thalictrum, Thyme, Veronicas.

December

Planning

- Use garden notes, photos, and sketches to assess areas that need plants
- Determine types and quantities of plants to order
- Begin to order plants from seed and nursery catalogues

Chores and Maintenance

- After ground freezes, mulch perennial and bulb planting beds. The mulch will prevent heaving during the alternate freeze/thaw cycle
- Tie and support evergreen shrubs to avoid breakage from winter snow
- Continue to provide burlap windbreaks for boxwood and broad-leaved evergreens until ground freezes
- Complete protection of trees from mouse damage with wire mesh trunk guards
- Continue to protect shrubs from deer with burlap or netting
- Avoid the use of salt to melt snow as it is toxic to most plants. Use sawdust, sand, or cat litter
- Keep bird feeders filled throughout winter

Pruning/Fertilizing

- Prune evergreen branches to use in holiday decorating
- Continue to rejuvenate overgrown shrubs as weather permits, until new growth begins in spring

Indoors

- Keep newly purchased Christmas trees in a bucket of water in a cool place
- Set up Christmas tree in a reservoir stand. Cut on a slant about 1" above existing cut for optimum water absorption
- Be sure to keep reservoir filled and place tree in the coolest part of the room
- Sterilize the tree stand with a solution of boiling water, vinegar, and household bleach after use
- When buying houseplants in winter be sure to wrap them well for the trip home. This prevents the foliage from freezing and protects tropicals from drafts
- Give houseplants as much light as possible as days grow shorter
- Hold off on fertilizing indoor plants until spring
- Provide houseplants with increased humidity; mist often or place plants over a tray of moist pebbles
- Continue to plant prepared bulbs for indoor forcing
- As houseplants grow more slowly during winter, increase the time between waterings but do not cut back on the amount of water
- On frigid nights protect indoor plants from freezing; move them away from the glass or cover glass with thick newspaper or cardboard
- Clean leaves of large and smooth-leaved house plants like dracaena, philodendron, ficus, etc.

What to Plant in December

Directly Sown

Abronia, Ageratum, Alyssum, Antirrhinum, Arctotis, Bellis, Calendula, Calliopsis, Clarkia, Cleome, Convolvulus, Coreopsis, Dimorphotheca, Eschscholtzia, Flax, Forget-me-not, Gaillardia, Gilia, Godetia, Gypsophila, Iberis, Linaria, Lupine, Mallow, Mentzelia, Nasturtium, Pansies, Petunia, Paeonia, Pinks, Poppies, Primula, Scabiosa, Stevia, Sweetpea, Verbena.

As Full Plants

Alyssum, Arctotis, Calendula, Canterburybells, Carnation, Cineraria, Dicentra, Dimorphotheca, Forget-me-not, Heuchera, Iberis, Pansies, Penstemon, Petunia, Primula, Scabiosa, Stocks, Viola.

Bulbs, Corms and Tubers

Alstroemeria, Anemone, Anemone, Anemone, Anemone, Babiana, Bessera, Calochortus, Haemanthus, Leucocoryne, Lilium, Montbretia, Muscari, Ornithogalum, Oxalis, Pancratium, Tulips, Watsonia.

By Division Or Clumps

Acanthus, Agapanthus, Amaryllis, Anchusa, Armeria, Fall Asters, Francoa, Gazania, Hemerocallis, Heuchera, Hollyhock, Japanese Iris, Pancratium, Penstemon, Periwinkle, Sedum, Shasta Daisy, Thalictrum, Thyme.

WHAT GROWS WELL IN CENTRAL NEW YORK?



http://eatdrinkbetter.com/files/2008/06/community_garden.jpg

From <http://vegvariety.cce.cornell.edu/> “Selected List of Vegetable Varieties for Gardeners in NYS”

By L. Bushway, Garden-Based Learning Institute

Department of Horticulture
Cornell University

This report is available online:

www.gardening.cornell.edu/vegetables/vegvar.pdf

For seed sources of listed varieties see:

<http://vegvariety.cce.cornell.edu/>

Key to Notations

*	Recommendation based on at least 4 gardeners’ ratings averaging >3.5 stars. Share your opinions at: http://vegvariety.cce.cornell.edu/		
#	New varieties to this list	PM	Powdery mildew resistant or tolerant
BCMV	Tolerance to Bean Common Mosaic Virus BV1 & NY15	R	Rust resistant
BLS	Bacterial leaf spot resistant strains 1, 2, and 3 are noted	SE	Sugar enhanced
CTV	Tolerance to citrus tristeza virus	SH2	Supersweet
F	Fusarium resistant or tolerant	SMR	Scab, mosaic resistant
H	Hybrid (or indicated in name)	SR	Scab resistant, potatoes
M	Zucchini yellows mosaic and watermelon virus resistant	T	Tolerance to tobacco mosaic
MR	Mosaic resistant	Th	Thrips resistant
N	Root knot nematode resistant or tolerant	V	Verticillium resistant or tolerant
P	Phytophthora resistant or tolerant	YR	Yellows resistant

ASPARAGUS

Jersey Giant (H,F,R), Jersey King, Jersey Knight (H,F,R)

BEANS

Green Bush Bronco (BCMV), Charon, Derby, Jade (R, BCMV, CTV), Provider *, Roma II (Italian flat pod), Tendergreen Improved

Wax Bush Golden Butterwax, Golden Rod, Rocdor

Green Pole Blue Lake, Fortex, Kentucky Blue, Kentucky Wonder

Lima, Bush LARGE SEEDED: Burpee Improved Bush, Fordhook 242 SMALL SEEDED: Henderson

Lima, Pole King of the Garden

Soy, Edible Butterbean, Envy

Dry Beans Cabernet, California Red Kidney, Chinook 2000, Etna, Fleetwood, Jacob's Cattle, Midnight

Misc. French Horticultural, Romano, Royal Purple Burgundy

BASIL Cinnamon, Genovese, Italian Large Leaf, Siam Queen, Thai Sweet

BEETS Crosby Green Top, Detroit Dark Red*, Early Wonder, Formanova, Golden, Long Season, Lutz Green, Red Ace, Red Cloud (H) #, Ruby Queen, Warrior (H)

BROCCOLI Baccus (H), Goliath, Liberty (H), Packman (H), Premium Crop (H)



<http://www.hort.purdue.edu/ext/senior/vegetabl/images/large/cabbage2.jpg>

BRUSSELS SPROUTS Oliver (H), Rubine Red

CABBAGE

Early Farao (H, Tr) #, Jersey Wakefield, Heads Up, Pacifica, Tastie

Midseason Chieftain Savoy, Lennox, Market Prize (H,YR), Ruby Perfection (H), Savoy Ace(H), Savoy King (H)

Late Huron (H)

Winter Deadon (H) #

Chinese Blues (H) (heading type), Jade Pagoda (H)

CARROTS Bolero, Cosmic Purple, Healthmaster, Kinko, Purple Haze, Royal Chantenay, Rumba, White Satin (H) #, Yellowstone (H) #

CAULIFLOWER

Alert, Amazing, Candid Charm (H), Cheddar, Early White (H), Self Blanche (fall), Snow Crown (H), Graffiti (H)

CELERY Tango (H) #

CILANTRO Delfino

COLLARDS Blue Max (H), Champion, Georgia Green

CORN (all hybrids, all yellow kernels except when indicated white [WH] or bicolor [BC]):

Sweet

Early Fleet (BC, SE), Geronimo (BC, SE), Jester (II), Seneca Spring (BC, SE), Sundance, Sugar Buns, Temptation (BC, SE), Trinity (BC, SE)

Midseason Jubilee, Precious Gem (BC, SE), Silverado (WH), Tuxedo
Late Season Bodacious, Delectable (BC, SE), Sensor (BC, SE), Silver Queen (WH), Sugar Ace
Super-sweet Northern Extra Sweet
Popcorn Mini Bluepopper

CUCUMBER

Slicing Burpless Hybrid II (MR), Diva* #, Greensleeves, Marketmore 76 (SMR, PM)*, Marketmore 86 (SMR, PM)* #, Orient Express, Raider, Spacemaster (SMR), Sweet Slice (H, SMR)*
Pickling National, Regal (H, SMR)

EGGPLANT

Early Calliope (H), Dusky (H), Ichiban (H), Little Fingers
Midseason Black Beauty, Classic (H), Ghostbuster (H), Neon

ENDIVE Florida Deepheart, Full Heart Bavarian, Green Curled, Rhodus

FENNEL Orion (H) #

GARLIC Music #

KALE Dwarf Green Curled, Red Russian, Redbor (H) #, Starbor (H) #, Vates Blue Curled, Winterbor (H)

KOHLRABI Early Purple Vienna, Early White Vienna, Eder, Grand Duke (H), Kossak (H) (Kossack)

LEEK American Flag, Broad London, Electra, King Richard, Pancho

LETTUCE

Crisphead (Iceberg)

Great Lakes (Fall), Ithaca, Summertime, Tom Thumb

Butterhead (Bibb/Boston types)

Buttercrunch *, Esmerelda, Four Seasons, Sangria, Winter Density

Looseleaf Black Seeded Simpson *, Green Ice, Ibis, Lollo Rossa, New Red Fire, Oak Leaf, Prizehead, Red Sails *, Ruby, Salad Bowl, Slobolt

Cos (romaine) Cosmo Savoy, Green Towers, Little Gem, Parris Island, Valmaine (a.k.a Paris White or Valmaine Savoy) (MR)

French Sierra



http://tinyfarmblog.com/wp-content/uploads/2007/10/fal2007_too_late_eggplant.jpg

MELON

Orange flesh Ambrosia, Gold Star (H, F), Athena (H, F 0, 1, and 2, PM 1&2), Burpee Hybrid, Fastbreak, Halona, Hannah's choice (H), Harper Hybrid (F), Iroquois (F), Pulsar, Superstar (H, F)

Green flesh Early Dew, Passport

Specialty Charantais, Edonis, Galia

Heirloom Eel River, Jenny Lind, Rocky Ford, Schoon's Hard shell

MUSTARD Green Wave, Red Giant

(photo from http://www.seedsofchange.com/product_shots/PS10974B.jpg)



ONIONS

Transplants (Not for long term storage)

Ailsa Craig, Bennie's Red, Candy (H), Red Sweet Spanish, Walla Walla (mild), White Sweet Spanish

Seed (Early maturing)

Arsenal (H), Early Yellow Globe, Precedent (H)

Seed or Transplant (Long term storage)

Copra (H)*, Duration (H), Fortress (H), Mars (red, H), Redwing (red, H)

Sets Stuttgarter *

Green or Bunching Evergreen Hardy White, He-Shi-Ko, Long White Bunching, Southport White

PARSNIPS All American, Harris' Model, Hollow Crown

PEAS

Early Knight, Little Marvel, Maestro, Novella II, Olympia, Progress No. 9, Sparkle

Late Bolero, Frosty, Green Arrow, Lincoln, Mr. Big (H), Wando

Snow pea Dwarf Gray Sugar, Little Sweetie, Mammoth Melting Sugar, Oregon Sugar Pod II

Snap pea Early Snap, Sugar Snap*, Super Sugar Mel



PEPPERS (photo from <http://www.southernexposure.com/Merchant2/graphics/californiawonder.jpg>)

Early Ace (H), Apple, Golden Bell, Gypsy (H), Lipstick, New Ace (H), Redstart (H)

Main Season Boynton Bell (H; BLS 1,2,3), Golden Bell (Yellow), King Arthur (BLS 2), Lady Bell (H) *

Sweet Banana, Sweet Chocolate, Yellow Belle II (H)

Hot Biscayne (H), Cayenne Long, Hungarian Yellow Wax, Mucho Nacho (H), Numex Joe E Parker, Serrano, Super Chili (H)

Thin Walled Frying Types Cubanelle, Italian Sweet

POTATOES

Early Dark Red Norland (SR) *, Superior (SR)

Mid Season Chieftain, Reba, Salem (SR), Yukon Gold*

Late Season Elba, Katahdin

Specialty Adirondack Blue, Adirondack Red, French Fingerling, German Butterball

PUMPKINS (Big -A) (Small -B)

Autumn Gold (A) (H), Baby Bear, Baby Pam (B), Gold Rush (A, H), Howden (A), Howdy Doody (H), Jackpot (H), Lil' Ironsides (B,H), Lumina (B, H), Magic Lantern (PM, H), Racer (H), Rocket (A, H), Small Sugar (B), Snackjack (B, H), Spooktacular (H), Tom Fox (A)

Mini Baby Boo, Jack-be-Little, Munchkin

Giant Atlantic Giant, Big Max, Prizewinner

RADICCHIO Chioggia Red Preco No. 1 (H)

RADISH Champion, Cherry Belle, French Breakfast, Icicle, Scarlet Knight, Sparkler

RHUBARB Canada Red, MacDonald, Crimson Red, Victoria

RUTABAGAS American Purple Top, Thomson Laurentian

SPINACH

Spring America, Bloomsdale Dark Green, Bloomsdale Long-Standing *, Indian Summer (H, MR), Melody (H), Space, Tyee (H)

Summer Malabar, New Zealand

Fall Melody (H), Tyee (H), Winter Bloomsdale



SQUASH, SUMMER (photo from <http://www.harvestwizard.com/squashR.jpg>)

Yellow Early Prolific Straightneck, Fortune, Seneca (H), Sunburst (H), Sundance, Yellow Crookneck,

Zephyr (H) * #

Zucchini Eight Ball (H) #, Gold Rush (H), Golden Burpee, Midnight Zucchini, Multipik (H), Revenue (M) (H)

Bush Scallop Butter Scallop (H), Peter Pan, Sunburst (H)

SQUASH, WINTER

Butternut Bugle (PM), Harris Butternut (H) (semi-bush), Ponca Baby (small fruit), Waltham Butternut, Zenith (H)

Acorn Autumn Delight (H, PM) #, Sweet Dumpling, Table Ace (H)*, Table King Bush, Table Queen (a.k.a Ebony)*, Tuffy

Buttercup/Kabocha Ambercup, Autumn Cup, Burgess Buttercup, Sweet Mama (H), Sweet Meat, Waltham Butternut *

Hubbard Blue Ballet, Hubbard, Red Kuri

Misc. Carnival (H)*, Cornell Bush Delicata (PM), Gold Nugget, Harlequin (H), Sweet Dumpling, Vegetable Spaghetti

SWISS CHARD

Bright Lights (H) *, Fordhook Giant, Large White Ribbed, Lucullus, Rainbow, Rhubarb, Ruby Red

TOMATO

Cherry Early Cherry, Fruity Orange, Sarah's Goldstar Cherry, Sungold (H) *, SunSugar *, Supersweet 100 (H) *

Grape Jubilee (H), Juliet (H), Sugary

Extra Early Cosmonaut Volkove, Currant, Daybreak (H), Early Cascade (H), Gold Rush

Early Cascade (H, V, F, A), Early Girl*, Gold Dust (H, V), Lemon Boy, Sunrise (H, V, F, T), Taxi (H)

Main Season Basket Vee (V), Better Boy (H, V, F), Big Beef (H, V, N, T) *, Big Boy,

Celebrity (H, V, F, N) *, Jet Star (H, V, F) *, Moneymaker, Mountain Fresh (H, F, V),

Mountain Spring (H, V, F), Palisade (H), Sunbeam (H, V, F), Sunrise (H, V, F), Supersonic (H, V, F) *,

Ultra Sweet (H, V, F, N)

Paste Amish Paste *, Classica (H), La Roma (H), La Rosa (H), Nova, Plum Dandy (H), Roma (V, F), Viva Italia

Pear Yellow Pear *

Heirlooms Big Rainbow, Black from Tula, Black Krim *, Black Prince, Box Car Willie,

Brandywine *, Cherokee Purple *, Garden Peach *, Golden Queen, Green Zebra,

Moskvich, Mr. Stripty, Striped German, Striped Roman, Tappy's Heritage

TURNIPS Gilfeather, Hakurei (H), Purple Top White Globe, Tokyo Cross (H)

WATERMELON (photo from http://www.scnla.com/WATERMELON-Quetzali_LG.gif)

Crimson Sweet, Moon & Stars, Sugar Baby, Yellow Baby (H), Yellow Doll (H)

Seedless Tri-X-Sunrise (F1)



New Vegetable Varieties for 2009

The following varieties are new releases. We are holding off adding them to our list of recommended varieties until we hear from you. Will these do well in our NYS gardens? Grow these then share your opinions via <http://vegvariety.cce.cornell.edu/>

Basil 'Boxwood': Compact, small-leafed herbs look like boxwoods and are more uniform than other dwarf basil. Very bushy, and very productive. Great for pesto and other culinary uses, as well as ornamental. 12-16 inches tall.

Beet 'Chioggia Guardsmark': Unique interior root colors of red and white rings with attractive short, medium green tops. The novel interior color and sweetness with a peppery aftertaste is most appealing. Harvest in 60 days.

Beet F1 'Solo™': Requires less thinning. The roots early maturing, superior uniformity and top yields are combined with erect, deep green and highly disease resistant tops. Harvest sweet, dark red round roots 50 days.

Broccoli F1 'Belstar': Newly re-introduced as certified organic seed! Summer, fall and spring produces good side shoots for second cuttings. Large 6- to 8" domed blue-green heads. Harvest 66 days from transplant.

Cauliflower F1 'Graffiti': Unique color and high nutrient value. The large framed deep purple 6 to 8" dome shaped heads need sunlight to obtain full purple color. Eat raw or steamed to retain full color. Harvest 85 days.

Eggplant F1 'Gretel': Earliest white eggplant. Fruit is set in clusters. Petite plants 3 feet tall add an attractive edible to a large container or flowerbed. Harvest when small, about 3-4" in length 55 days from transplant.

Melon F1 'Lambkin': Delicious oval shaped melon weighs between 2 and 4 pounds. A thin rind surrounds sweet, aromatic, white, juicy flesh. The yellow skin with green mottling is unique. Early maturing 65-75 days.

Mustard Greens 'Ruby Streaks': Beautiful red leaves. Delicious with sweet yet mildly pungent flavor. Wonderful for eating fresh in salads, steamed or stir-fried. Great for baby greens. Ideal edible ornamental for pots and gardens. Harvest 20-40 days.

Ornamental Corn 'Oaxacan Green': This dent corn with beautiful emerald green kernels is terrific for ornamental use or ground as corn meal. The ears range in size from 6-10 inches. Corn grows on sturdy, 7-foot plants. Harvest in 95 days.

Pepper F1 'Habanero Red': This is a very hot habanero. At 445,000 Scoville heat units, it is nearly twice as hot as most commercial habaneros. It has a compact 30-inch plant with 1x2-inch wrinkled lime-green to red fruits. Harvest in 90 days.

Pumpkin F1 'Dakota': High yielding small sugar pie type. The fruit is very uniform in size with a dark orange color and a smooth rind. It has a solid dark green handle. Harvest 7- to 8-pound fruit in 95 days. Vines spread 12 feet.

Pumpkin F1 'Gooligan': Miniature 2x3-inch white fruits 1/4- to 1-pound in size are most appealing as a fall decoration, and are tasty baked or roasted. Vigorous vines set high numbers of the unique fruit. Harvest in 95 days.

Squash, Summer F1 'Anton': Yields are higher and shelf life longer than other zucchinis. Extremely dark, intense colored 7- to 9-inch fruits. Fruits are perfectly cylindrical. Powdery mildew resistant plants are compact, open, and nearly spineless.

Squash, Summer F1 'Midnight': Very compact, bushy plants ideal for growing in containers. Stems and leaves are spine free allowing easy harvesting of the delicious dark green, cylindrical summer squash. 75 days to first harvest.

Squash, Winter F1 'Honey Bear': Personal sized, sweet acorn squash weighing 1 pound or less bred to be baked and served in the half shell. Bushy, compact plant 2-3 feet tall produces 3-5 dark green fruit. Harvest in about 100 days.

Tomato F1 'First Light': One of the best tasting tomatoes. Harvest in about 76 days, when the bottom 1/3 to 2/3 has turned red but still has green shoulders. Excellent flavored 5- to 7-ounce fruits have crisp texture, and are good yielding.

Tomato F1 'Tomatoberry': Unique strawberry-shaped fruits have a firm texture, super-sweet taste and aroma. Each one-bite fruit is shiny deep red. Harvest delicious 1-inch tomatoes in 80 days. Staking required. High yielding.

Tomato F1 'Sweet Mojo': Exceptionally early maturing fruit set from top to bottom. The outstanding yield potential has each long cluster averaging 21 uniform, red, firm, and sweet grape shaped fruits. Staking required. Harvest in 60 days.

Watermelon F1 'Baby Doll': 'Baby Doll' is a tasty yellow-fleshed diploid hybrid melon. The round 6- to 10-pound fruits are a perfect size for the icebox. The rind is green with small dark stripes. Harvest in 70 days.



<http://static.howstuffworks.com/gif/beets-2.jpg>

WHAT WILL YOU GROW...? *Note your intended varieties*

<p>Asparagus _____</p> <p>Beans (pole) _____</p> <p>Beets _____</p> <p>Broccoli _____</p> <p>Brussels Sprouts _____</p> <p>Cabbage _____</p> <p>Carrots _____</p> <p>Cauliflower _____</p> <p>Celery _____</p> <p>Collards _____</p> <p>Corn _____</p> <p>Cucumber _____</p> <p>Eggplant _____</p> <p>Garlic _____</p> <p>Kale _____</p> <p>Kohlrabi _____</p> <p>Leek _____</p> <p>Lettuce _____</p> <p>Okra _____</p> <p>Onion _____</p> <p>Parsnip _____</p> <p>Peas _____</p> <p>Pepper _____</p> <p>Potato _____</p> <p>Pumpkin _____</p> <p>Radish _____</p> <p>Turnips/Rutabaga _____</p> <p>Spinach _____</p> <p>Squash (Summer and Winter) _____</p> <p style="padding-left: 20px;">Acorn</p> <p style="padding-left: 20px;">Butternut</p> <p>Swiss Chard _____</p> <p>Tomato _____</p> <p>Turnip _____</p> <p>Zucchini _____</p>	<p>Fruits (for trees and shrubs, consider space and time issues):</p> <p>Rhubarb _____</p> <p>Strawberry _____</p> <p>Watermelon _____</p> <p>Blueberry _____</p> <p>Raspberry _____</p> <p>Apple _____</p> <p>_____</p> <p>Herbs:</p> <p>Anise _____</p> <p>Basil _____</p> <p>Borage _____</p> <p>Caraway _____</p> <p>Chervil _____</p> <p>Chives _____</p> <p>Cilantro/Coriander _____</p> <p>Dill _____</p> <p>Fennel _____</p> <p>Horehound _____</p> <p>Oregano _____</p> <p>Hyssop _____</p> <p>Lovage _____</p> <p>Marjoram _____</p> <p>Parsley _____</p> <p>Peppermint, Spearmint _____</p> <p>Rosemary _____</p> <p>Sage _____</p> <p>Savory _____</p> <p>Spearmint _____</p> <p>Tarragon _____</p> <p>Thyme _____</p> <p>_____</p> <p>_____</p> <p>_____</p>
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Edible Flowers *(should only be eaten in moderation and with careful identification):*

- Clover
- Elderberry (do not wash, as water removes scent and flavor; instead, check flowers for insects)
- Hibiscus
- Nasturtium
- Pansy

Prepare Your Soil and Beds

Soil preparation is crucial to good vegetable production. Turn the soil over with a spading fork or spading shovel the first year. From year to year, you may want to double dig compacted soil or simply use a spading fork to cultivate the soil so as not to disturb the soil layers.

Adding manure and compost to working beds helps to improve soil quality. Consider sowing cover-crops when a bed is not in production (see the Cover Crops page of this toolkit).

Be sure to remove all rocks, weeds, and grass.

Level the garden with a rake.

Now you have a spot with healthy, loosened and leveled soil and you are ready to plant.

Before planting, lay out all of the rows with sticks and string according to your garden plan. These markers are important. They are straight lines used as guides for your rows.

CHECK YOUR SOIL FIRST

If you are breaking ground for the first time you may consider doing a full nutrient test in addition to testing your pH and soil toxicity.

It is important to have your soil tested for heavy metals and toxic chemicals *before* beginning any gardening; this is especially important at or near any business site, large- or small-scale automotive projects, or home repair projects. Toxins to be wary of include Lead, Arsenic, Mercury, Nickel, Cadmium, and a host of others – all of these poisons can be absorbed by plants or tracked into homes and eaten by you (or by children or animals)!

In addition, pH balance and mineral/nutrient content will be important factors in determining the approach you take to your urban garden. Your pH should be tested every few years – it's essential for maintaining healthy soil, because knowing your pH as well as the nutrient requirements of your crops will help when adding compost. In some cases other amendments may be necessary, such as lime, or materials for drainage and aeration.

Get Your Vegetable Garden Started Early in the Season

Refer to the list of crops and varieties you would like to grow and get your seedlings started for an early growing season. (See Starting Seedlings in this toolkit.)

"Breaking ground" for an outdoor garden by April 15 (weather permitting) allows you to grow early season crops from April through June.

Do not dig any garden soil that is too wet, even if it is mid-April. Use the "hand test" – squeeze a handful of soil; if it stays as a clump, then your soil is too saturated to dig!

If your garden has good drainage, such as raised bed or sandy soils, you may be able to begin planting some of the earliest plants like peas in late March or early April because these soils dry out the fastest.

A spring garden makes sense. Starting crops in spring offers the chance to practice skills that will be needed to meet the challenges of summertime growing. Rain and cool temperatures work together to provide plenty of water for seedlings, so very little watering is needed. Weeding is also easy, and even the insect pests that begin to feed are hardly a problem at all.

Flavor produced by a long, cool growing period is captured in peas, greens, spinach, and other early vegetables.

Use Your Planting Plan!

Now that you've taken the time to make a plan, refer to it as a guide throughout the season. It is easy to get busy with one thing and let another slip by!

Keep records of successes and troubles throughout the season to use as a reference in coming years. Jot down anything you think might prove helpful and keep it handy for future gardening seasons – it will make everything easier and more satisfying in the long run.



<http://cuyahoga.osu.edu/horticulture/community-gardening/6-21-06-kids-in-garden-039.jpg>

Starting Seedlings

Good news! Plants WANT to grow!

Getting them started takes just a little knowledge and practice...

Syracuse has a growing season of 168 days. Generally, April 28 is our last frost day for Spring (then it's safe to plant!) and our first frost in the autumn takes place around October 13 (get those precious veggies inside!).

Light freeze: 29 degrees F to 32 degrees F -- tender plants killed, with little destructive effect on other vegetation.

Moderate freeze: 25 degrees F to 28 degrees F -- widely destructive effect on most vegetation, with heavy damage to fruit blossoms and tender and semihardy plants.

Severe freeze: 24 degrees F and colder -- damage to most plants.

At least 4 to 8 weeks can be cut from the time required between planting and harvesting by setting vigorous transplants rather than seeds into the garden.

Also, growing your own plants may be the only way to obtain a new or special variety you want. Commercial plant growers cannot be expected to grow all of the hundreds of varieties offered by seedhouses. And, plant nurseries are often reluctant to offer varieties which have not been given widespread publicity.

Soil for Seed Starting

Using a loose, fertile, disease-free soil mix is a basic key to seed starting success. You want to make sure you use a light soil that is not too heavy in nutrients (later on you will need to feed the seedlings with a dilute fertilizer). Regular potting soil will not work well for this, nor will dirt straight from the garden. Whatever you use must also be a sterile medium so that you reduce the risk of damping off disease.

There are two ways to prepare your growing medium:

Create your own. To prepare your own mix, combine by volume one part sandy loam with one part sand or vermiculite plus one part Michigan or Canadian sphagnum peat. If you have clay loam, you should use one part soil to two parts sand or vermiculite and one part peat.

- 1/2 bushel horticultural perlite, vermiculite, calcined clay, or humus
- 1/2 bushel coarse sphagnum peat moss or shredded pine bark
- 3 ounces 20 percent superphosphate
- 6 ounces dolomitic limestone or ground limestone
- 3 ounces complete fertilizer as 8-8-8 or 12-12-12



Happy Living Magazine

The mix must be pasteurized to kill harmful fungi, bacteria, weed seeds and nematodes which it may contain. This is easily done by placing the soil mix in a shallow metal pan, covering the pan tightly with aluminum foil and heating the soil to 160° in an oven. Keep the soil at this temperature for at least 1 hour or until a potato imbedded in the soil is baked. After cooling, the soil is ready for planting.

Premixed, soilless material can be bought in nurseries and stores. Soilless mixes are more expensive than the home mix but can be used right from the bag without pasteurization. These mixes are economical when used carefully. The following soilless mix can be prepared at home if the ingredients are available in a local nursery or through a catalog.

This "peatlite" mix is excellent for starting seeds and growing seedlings to transplant size.

The peat mixes with the other ingredients more easily if it is moist - not soaking wet. The night before, spread the dry peat out and sprinkle with just enough water to dampen it, or dampen in the bag. Follow these steps in mixing the ingredients:

1. Pour the dampened peat moss or shredded pine bark and perlite or vermiculite in a rough pile. Sprinkle the fertilizer over the top.
2. Shoveling from the base of the pile, make a second cone-shaped pile by pouring each shovelful directly on top so ingredients dribble down the sides.
3. Shovel from the second pile and repeat the cone-shaped pile as before.
4. Repeat the process again. It should now be well mixed. Store the mix in clean plastic bags or plastic cans to keep it moist and clean.

Fertilizer

Over time, synthetic fertilizers acidify the soil and damage the structure of the soil, causing it to compress into a lifeless brick. That spells trouble because the soil can no longer hold -- and deliver -- water, air and nutrients to your plants. Oh, and then there's water pollution; and our food is less healthy, especially for kids who are most affected by pollution.

Bottom line: Synthetic fertilizers provide impressive results in the *short* term, but once you start using them, like an addiction, you have to *keep* using them.

Containers

Any shallow wood, metal or plastic container at least 3 inches deep makes a suitable plant growing box. Milk cartons, foam cups, and egg cartons make nice individual plant containers. Punch holes in the bottom of any carton, cup or pan to allow water to drain from the soil.

Sow seeds in rows 2 inches apart in a box of soil. If seedlings touch, remove some and transplant to give them more room to grow. If enough growing space is available, plant seeds directly into individual pots thereby eliminating the initial transplanting.

Regardless of the starting method, gardeners should allow proper space for each plant to develop. Crowded seedlings become stretched and unhealthy.

Seeding

Consult Table 1 for the optimum seeding date. Peppers require 7 to 8 weeks and tomatoes 5 or 6 to grow to transplanting size. Squash and cucumbers require only 2 to 3 weeks to grow to an ideal size. Members of the cabbage and lettuce families need 4 to 5 weeks. Flowering annuals also vary in the time required to produce a size suitable for transplanting. Much depends on local growing conditions. It is important to keep a garden notebook and record seeding dates, length of time to germinate and time required to reach transplant size. Seedlings are ready to transplant when they have the first set of true leaves.

Table 1. Planting and growing information for vegetables.

Kind of vegetable	Weeks needed to grow transplants*	Seed planting depth	Optimum temperature for germination	Plant-growing <u>temperatures</u>	
				Day	Night
	(weeks)	(inches)	(°F)	(°F)	(°F)
Cabbage, broccoli and cauliflower	5 to 7	1/4 to 1/2	85	60-70	50-60
Lettuce	4 to 6	1/4 to 1/2	75	60-70	50-60
Onions	8 to 10	1/2	75	60-70	45-55
Tomatoes	5 to 6	1/4 to 1/2	85	70-80	60-65
Peppers	7 to 8	1/4 to 1/2	85	70-80	60-70
Eggplant	7 to 8	1/4 to 1/2	85	70-80	65-70
Cucumber, squash, muskmelon and watermelon	2 to 3	3/4 to 1	85	70-90	60-70

*Depends on type of plant-growing structures used, heating facilities, and lighting available.

Soil temperature is important. Cool soil retards germination. Warm the soil to about 75° if possible until seedlings have emerged above the soil surface.

Provide an air temperature of 70° to 75° during the day and night temperature of at least 60° to 65°.

Cover the seed only enough to make it disappear from view [rule of thumb: 2X their diameter]. The seed packet usually gives correct planting depth. After seeding, water the soil gently but thoroughly until water drains out the bottom of the container, being careful not to wash seeds away. Place containers in plastic bags or cover the soil surface with plastic film until the first sign of seeding emergence. Then remove the plastic cover immediately and be sure the container gets maximum exposure to light. Most seeds do not require light to germinate, but seedlings need full exposure to light as soon as they emerge.

Transplanting

Begin transplanting when the first true leaves are forming, usually 2 to 3 weeks after sowing. Set the seedling at the same level it was in the seedling flat. When firming the soil avoid injuring tender stems.

Immediately after transplanting, water each seedling container thoroughly. Wilting at this point can damage young plants severely. To prevent excessive wilting, shade plants from strong sunlight for 2 or 3 days after transplanting.

Spacing

Frequently, plant quality suffers from crowding too many plants into a small area. Crowded seedlings become weak and spindly and are more susceptible to disease. Wider spacing or larger containers permit stronger growth. As a rule of thumb, to produce high quality plants, space them so that the leaves of one plant do not touch those of another.

Watering

Add water to soilless media only when moisture can no longer be squeezed out by pinching the medium between the thumb and forefinger. Water soil only when it no longer feels moist when rubbed between the fingers. Apply enough water at each irrigation so that some drips out of the drain holes in the bottom of the container. Be sure the water is passing through the rootzone-not just down the inside wall of the container.

Fertilizing

After seedling emergence and during early development, strong, rapid plant growth can be assured by watering the soil with a carefully prepared solution of a soluble fertilizer which is specifically designed for plant production. Prepare the solution exactly as prescribed on the label. Apply the solution as an irrigation when water is needed. Apply the solution as an irrigation when water is needed. Apply enough to allow some to flow out the drain.



<https://www.veseys.com/ca/en/images/articles/learn/reference/planting-guide/growing-vegetables.jpg>

Baby-sized Problems--An aid in diagnosing plant-growing disorders

Symptoms	Possible causes	Corrective measures
Spindly growth or leggy plants	1. Shade causes excessive elongation	Full sunlight whenever possible
	2. Prolonged cloudy weather during growing season	Maintain lower temperatures during cloudy weather. See Table 1
	3. Excessive watering	Water when necessary to maintain a moist but never wet soil condition
	4. Temperatures too high	Skillful management of temperatures. See Table 1
	5. Excessive fertilizer	Apply fertilizer less frequently and/or reduce the concentration
	6. Poor plant spacing	At all times provide young plants with adequate space for stocky development
Dwarf plants	Low fertility. Severe cases will be accompanied by nutrient deficiency symptoms. See A1 and A2 below	Nutrient levels difficult to maintain because of small volume of soil. Apply fertilizers often and in low concentrations.
A. Leaves discolored	1. Phosphorus deficiency. plants dwarf early in growth; stems are slender, fibrous and hard. Underside of leaves and stems becomes reddish-purple. Leaves are small and roots stunted. Soil may be too acid.	Apply a high-phosphorus plant-starter solution, such as a 10-55-10, 10-52-17 or 15-30-15 analysis. Use 2 tablespoons to 1 gallon of water.
	2. Nitrogen deficiency. General indication of nitrogen deficiency is lack of green in the retarded growth with stems and leaves. If the soil is very deficient in nitrogen, symptoms may appear early in the seedling stage. If there is adequate nitrogen to support early growth only, deficiency symptoms may appear later.	Apply nitrogen in water. Dissolve 2 teaspoons of ammonium nitrate or 3 teaspoons of ammonium sulfate per gallon of water. Be sure to wash solution from foliage with plain water after fertilizing.

B. With root discoloration	1. Excess soluble salts from overfertilizing. Plants wilt in bright sunshine. Lower leaves turn yellow and drop off, and plant finally dies or has very small root system which is often discolored.	Leach excess salts. Not generally a problem where regular feeding schedule is maintained. Maintain a moist soil condition.
C. Without root discoloration	Low temperature. Retarded growth.	Maintain proper day and night temperatures. Do not start plants too early.
Tough, woody plants	Plants likely to be over-hardened	Apply plant starter solution 3 to 4 days before setting out. Use analysis such as 10-55-10 or 10-52-17 at the rate of 2 tablespoons (1 ounce) to a gallon of water.
Decay or rotting of the stems of young plants near the soil surface.	Damping-off. Disease organisms attack germinating seeds and young plants, especially during prolonged cloudy weather.	Use of sterilized soil-mix, skill in watering and ventilating and proper regulation of temperature.
Retarded root growth	1. Poor soil mixture	All factors influencing root growth are especially important. Root growth and formation of new roots are dependent on the food supply from the plant top, good aeration, ample supply of nutrients, adequate moisture and temperature.
	2. Poor soil aeration	
	3. Poor drainage	
	4. Lack of fertility	
	5. Excess soluble salts	
	6. Low temperature	
Green algae and mosses growing on soil	Such growth usually occurs on soils with a high moisture content. It is more evident in shade and when prolonged cloudy weather exists during the plant-growing season. Under these conditions, moisture is retained near the soil surface, making conditions favorable for its growth. Poor soil structure, poor aeration.	Increase air movement around plants and practice morning watering. Add coarse, aggregate material to loosen the media, to decrease its water-holding capacity and to increase its air space.

Planting and Growing Information for Flowering Annuals

Columns A, B, C and D in the table refer to the following:

Column A--Optimum soil temperature for best germination.

Column B--D-Seeds germinate best in darkness; DL-No light requirements; L-Seeds germinate best in light.

Column C--Usual number of days required for uniform germination at optimum temperature.

Column D--Time (in weeks) needed to grow transplants.

	A	B	C	D
Ageratum	70°F	L	5 days	6-8
Alyssum	70°F	DL	5 days	3-5
Calendula (pot marigold)	70°F	D	10 days	7-8
Carnation (annual)	70°F	DL	20 days	11-12
Celosia	70°F	DL	10 days	8-9
Coleus	65°F	L	10 days	7-10
Cosmos	70°F	DL	5 days	6-8
Dahlia (from seed)	70°F	DL	5 days	6-8
Dianthus (annual pinks)	70°F	DL	5 days	6-7
Dusty Millers				
Centaurea gymnocarpa	65°F	D	10 days	7-8
Others	75°F	L	10 days	6-7
Gaillardia (annual)	70°F	DL	20 days	7-9

Impatiens (sultana)	70°F	L	15 days	4-6
Lobelia	70°F	DL	20 days	5-6
Marigold (dwarf types)	70°F	DL	5 days	6-7
Marigold (tall types)	70°F	DL	5 days	3-4
Pansy	65°F	D	10 days	10-12
Petunia	70°F	L	10 days	5-7
Phlox drummondii (annual phlox)	65°F	D	10 days	5-6
Portulaca (rose moss)	70°F	D	20 days	4-6
Rudbeckia (coneflower)	70°F	DL	10 days	6-7
Salvia splendens	70°F	L	15 days	5-6
Snapdragon	65°F	L	10 days	5-7
Verbena	65°F	D	20 days	5-7
Vinca rosea (periwinkle)	70°F	D	15 days	7-8
Zinnia	70°F	DL	5 days	3-5



<http://static.howstuffworks.com/gif/rd/tips-for-growing-annual-zinnias0.jpg>

Light

Lack of light is the single, most common problem when raising seedlings. And it's probably the #1 reason why people become discouraged over starting their own seeds. Seedlings need more intense light than full-grown plants--14 to 16 hours a day is ideal. If they don't get enough light, or if the light isn't intense enough, they become spindly, leggy and weak.

Seedlings need 14 to 16 hours of light per day

Windowsills are popular for starting seeds indoors, but they don't provide enough of the right light for healthy seedlings. Direct sun from a southern exposure can be too harsh, resulting in wilted plants. In northern latitudes, light might be in short supply, or the windowsills are too cold.

Try low-cost fluorescent shop lights if you go that route – these will suffice in place of the costly grow lights for raising seedlings. Suspend the lights from chains, keeping them 2 to 4 inches above the tops of the seedlings, adjusting the lights as they grow. You can also add aluminum foil reflectors. If you do use a sunny windowsill, remember to rotate your plants every couple days so they don't have to stretch and reach for the light. Seedlings that are pale and weak are light-starved.



<http://www.countryliving.com/cm/countryliving/images/vegetable-garden-GEXPERT-de.jpg>

Divvying Up Chores for Garden Maintenance

Keeping a garden growing is about much more than just planting seeds at the right time of year or keeping the garden well watered. The garden will need attention year round, and keeping up with a few basic chores will help you keep your garden in good shape. To keep track of your maintenance chores it is a good idea to keep a monthly or weekly calendar.

There are a few essential garden chores that are key for a successful garden, and the following pages will give you some basic tips on how to make sure you are keeping up with the necessities like general maintenance and upkeep, fertilizing, pest control, watering, weed control, winterizing, and harvesting.

General Maintenance and Upkeep

A few general chores can be done regularly to keep your garden looking its best. These may not improve the taste of your tomatoes or the health of your asparagus plants, but they will keep the garden an inviting place to visit and relax. These types of chores include:

- Collection of any litter or yard debris (branches, twigs, etc)
- Sweeping or raking up stray leaves on walkways/paths
- Trimming/mowing any areas of turf
- Keeping walkway edges clean
- Raking gravel paths
- Upkeep of sheds, fences, sheds, etc. through the occasional coat of fresh paint
- Clearing moss from stone or brick walkways, which could become slippery
- Maintaining any water features

Consider how you will share responsibility for the following Chores and Garden Jobs:

Fertilizing

If you maintain a variety of plants and rotate their placement in your garden, you may find that you need very little additional fertilization to keep most plants productive – in this case, you may just need a Compost Manager to monitor the health of your waste-turned-gold. If you are starting a new garden, however, particularly in an urban area, you may find that your garden has only a small layer of rich topsoil (if any at all), or may be sandy, clayey, or otherwise inhospitable to the type of plants you would like to cultivate. Here are a few basic fertilizing techniques that will help you maintain your soil's health and ensure the continued growth of your garden; for more in-depth information, see the Soil Health pages in this manual.

There are three major plant foods that need to be available in your garden -these are nitrogen (N), phosphorous (P), and potassium (K). There are four basic types of fertilizers that can be applied to your garden to add these and other nutrients to the soil - composts, animal manures, natural or organic fertilizers, and chemical fertilizers.

It is a good idea to conduct a regular soil test to identify any nutrients your garden may be missing. Conducting a soil test will help you in determining the exact levels and types of fertilizers your garden needs. These tests can be very effective when conducted in the fall; the results will tell you if you need to add an organic fertilizer like lime (for acidic soils) or aged manure (for soils low in nutrients or organic matter) to your soil, and if you add these before winter they will have plenty of time to be absorbed before the spring planting. **Manure, in particular that which has not been composted, should never be applied when vegetable or fruit plants are mature, because it can infect plants with bacteria that could make you sick if you consume them.**

Chemical or artificial fertilizers should be avoided if at all possible, because regular use of them can actually impede the soil's ability to hold nutrients; they acidify the soil and damage its basic structure, causing it to compress into a lifeless brick. Overuse of chemical fertilizers in conventional agricultural practices and turf grass management has also been proven to have negative effects on soil and water resources. For healthy plants and people (especially kids), ditch the chemicals!

Pest Control

While there are many beneficial insects that your plants rely on to keep them healthy and productive, there are also some insects and animals that will harm your garden by attacking the leaves, fruits, or roots of your plants. Check out the highly-informative National Gardening Association Pest Control Library at <http://www.garden.org/pestlibrary/> for help identifying common garden pests. There are a few basic types of methods to help you protect your plants from pests, and these include physical control, cultural control, biological control and chemical control.

Physical

This method of control involves physically keeping pests out of your garden with barriers and traps, as well as removing established pests on a one-by-one basis.

Keeping pests out of your garden involves a variety of different tactics - from erecting a fence to keep out pests such as deer and rabbits, to setting out an old-fashioned beer trap for slugs. Even if you do not have a permanent barrier like a fence in place, you can set up temporary barriers to protect seedlings and other sensitive plants. Mesh or wire netting can keep birds from eating newly ripened raspberries, for example, and juice bottles with the bottoms cut off can be placed over plants to protect them from slugs and birds.

Removing pests on a one-by-one basis is not a fun job, but it can help you cope with persistent pests such as mice or caterpillars. Mice traps can be set in the garden to capture these pests, and caterpillars and larvae can be individually picked off of plants into a bucket of soapy water.

Cultural

This method involves choosing how, what, where and when to plant in your garden to help minimize attack by pests. Companion planting is one approach to cultural pest control - introducing plants that ward off specific pests. One of the oldest and well-known types of cultural control is the planting of marigolds to ward off flying pests and nematodes, but

many other plants can do the job as well. Chives, coriander, and nasturtium can help ward off aphids; rosemary and sage keep carrot flies at bay; hyssop, mint, oregano, rosemary, sage, and thyme keep cabbage moths out of your garden.

If you know that a certain type of insect pest can be problematic in your garden, timing your planting may be one way to avoid infestation. For example, planting summer squash late in the season so that they mature after squash vine borers have finished laying their eggs can help protect the plants from attack. You may want to contact your local extension service for advice on planting times for pest control. Ask to speak with the IPM (Integrated Pest Management) specialist.

If you have an infestation of certain insect pests in one year, you may very well lose most of a certain crop of vegetables, which can be very discouraging. But you can keep this from happening again the next year by rotating your crops - if your cabbage plants were moth infested one year and you would like to plant cabbage again the following year, choose a site that is as far as possible from the original one to help prevent re-infestation.

Keeping your garden clean is another approach - remove diseased plants, rotting fruits and debris because they will attract pests.

Biological

For help keeping up with the pests in your garden, it is easy to enlist a little help. You should try to attract pest predators like insect-eating birds, toads, bats, snakes, insects, and frogs to your garden so they can help you control your pest population. There are many ways to attract these beneficial creatures, and certain approaches will make your garden more attractive to people, too. Adding a bird bath or bird house will attract birds, as will the creation of a garden pond. Old logs laid in a shady part of your garden will help attract toads and beetles, and flowers like sedum and butterfly bush will attract bees and butterflies. You can also purchase beneficial insects, like ladybugs, and set these loose in your garden.

Chemical

Chemical controls should only be relied on as a last resort, because they can harm the soil and the beneficial insects that you need in your garden. Chemicals are also expensive, and will be washed off of your garden when it rains where they can pollute groundwater and waterways like streams and rivers. Use chemicals only if you can find no other way to cope with the pests in your garden, and then do so sparingly. Insect-specific chemical treatments, like slug pellets or Japanese beetle traps, will have little or no impact on the beneficial insects in your garden, but these can still have negative environmental consequences. Always make sure to read instructions carefully, and use only the minimum amounts recommended.

Watering

Watering is best done in the in the early morning or late evening, when you will lose the least amount of water to evaporation. Watering with a drip line (a hose or tape with holes in it) will help you minimize water loss as well, because it will deliver the water exactly where it is needed, at the roots. In sunny weather, you should do your best to keep water off of leaves, fruits and flowers, where it will do little to benefit the plant and may lead to scorching.

<http://www.flickr.com/photos/meganpru/2923923658/>



Because water resources are valuable, you should try to conserve water whenever you can, and there are a few strategies that are useful to know. Water conservation tactics include:

- Plant species well-adapted to the average rainfall in your region
- Apply mulch to the soil to help hold in moisture
- Weed regularly, because weeds will pull moisture from your plants
- Install a rain catchments system to make the most of rainfall
- Use drip irrigation to minimize evaporation
- Avoid planting or transplanting during dry spells
- Enhance sandy soils with organic mater, to improve moisture retention

Knowing how much to water depends on the types of plants you have in your garden, because all have different moisture needs. It is most efficient to give your garden a good soaking once a week, which will penetrate deep into the soil, rather than watering just a little bit each day. As a general rule of thumb, a few types of plants need extra attention to ensure their watering needs are met: transplants, seedlings, flowering vegetables and fruits, and container plants. Also keep a close eye on plants that are in exposed parts of your garden, who receive high levels of sunlight and/or wind.

Weed Control

Weeds are often considered the bane of any gardener, because they rob plants of moisture, nutrients, and light. Knowing a few basic weeding approaches can help keep them at bay. The first trick is to start early, and to remove weeds often in the spring and summer before they have a chance to go to seed. You also want to make sure to remove the entire weed - including its root - because some plants are able to re-grow from just a small piece of root.

It is a good idea to weed during hot, dry periods, because the weeds will be easy to remove and will wither on the surface. When using a hoe, try to dig as shallowly as possible, to avoid disturbing the roots of your garden plants.

Chemical weed removers are commonly used today on gardens and lawns, but they should only be used as a last resort because they can pass harmful chemicals on to your fruits and vegetables. If you must use chemical weed killers, you should follow a few basic rules: apply weed killer in the spring, when it will kill newly emerging weeds and prevent re-growth of new ones for a few months; do not apply weed killer on a windy day, when chemicals can be carried onto other plants, or cover plants with plastic sheeting during application; if you apply weed killer in the vicinity of edibles, only eat fruits and vegetables once they have been thoroughly cleansed with a produce wash.

Lastly, it may be wise to learn about the weeds in your garden before beginning to eradicate them. A few plants that are treated as weeds, such as dandelions, purslane, nettles, burdock, and wild garlic, are actually highly nutritious and prized by cooks for their flavor. Get to know your weeds, and you may find that you have a crop that you never knew of! Confining beneficial weeds to a certain area and creating an "Edible Weeds" garden is one way to make the most out these plants. Check out the site You Grow Girl at http://www.yougrowgirl.com/use/recipe_weeds.php, for some advice on caring for and eating from a weed garden.

Winterizing

Depending on where you live, winterizing your garden can be an important chore in the late fall, particularly if your garden contains perennials (which grow back every year) or any species that are suited for climates a little warmer than yours. Vegetable gardeners have less to worry about when winter's cold hits because in cold regions only a few vegetables - like asparagus and artichokes - live more than one season. Fruits and many flowers are perennials, and may need extra attention to survive the winter months.

Bulbs, tubers, and delicate or young plants may have to be removed from the garden and be stored indoors or in a protected outdoor spot over the winter. Planting plants in containers will make this job easier, but it may not be necessary if you live in a region that does not see deep winters.

Less sensitive plants can be protected though an insulating layer of straw or hay, held down with fleece or plastic. Certain vegetables, such as cabbage, collards, and broccoli, can be harvested in cold winter months through a method called "live storage," where layers of straw are used to insulate the plants. You can also build something called a cold frame to protect these plants, which is a layer of plastic secured by weights and held off of plants by wires or stiff tubing (see the Rebel Tomato Project Gallery for instructions on how to build a cold frame). These cold frames will insulate plants and protect them from frost, and will allow you to harvest hearty greens like collards and kale even after the snow has begun to fly. Cold frames can also be utilized in the spring, to warm the soil for the first planting.



<http://michael.cartwheelmedia.com/images/2007/12/imgscan784.jpg>

Soil Health

No matter what type of gardening techniques you use, you will have trouble raising healthy plants if you do not have strong, healthy soils. Soil is much more than just "dirt", and healthy soil is the basis for a healthy garden. Because different plants thrive in different types of soils, knowing what type of soil you have before you begin to plant your garden will help you plan for success. When you know what type of plants will match your soil, you can also amend and improve your soil; a careful gardener will be able to improve soil with every passing season.

Before you do anything in your garden, **have your soil tested** for heavy metals and other toxic materials. Any poisons in the soil can be sucked up into your plants or tracked into homes and be unknowingly ingested; this is especially dangerous for the little and growing bodies of children and animals, but really bad for everyone. In the soil testing process, you can also check for pH and soil nutrient content.

The two primary soil characteristics that a gardener should be aware of are **soil texture**, which will determine how moisture and nutrients are held in the soil, and **pH level**, which will determine which types of trace minerals are available in the soil. This page will tell you about these different types of soils, how to determine what soils are present in your garden, and how to make the most out of the soils you have through different soil improvement techniques. To learn more about the techniques described here, as well as other gardening basics, check out the Rebel Tomato Online Resource Library at <http://www.communitygardenwizard.com/shoots/books.php>

Soil Texture

Soil texture is difficult to change on a large scale, so knowing the type of texture your soil has will help you decide what type of plants to plant. The "ideal" type of soil for many plants is loam, which is a mix of sand, silt, and clay, but most soils will lean toward either a clay texture or a sandy texture. It is easy to test your soil texture so that you know what type of plants will do best in your garden.

Types of Soil Textures

Clay Soil

Positive Characteristics

- Water retentive even in drought; moist and fertile
- When managed well, can be suitable for a wide range of plants

Negative Characteristics

- Slow to warm in spring, which leads to a shorter growing season
- Sticky/difficult to work when wet

Improving Clay Soil

- Adding compost or yard debris will help reduce compaction
- Adding fine gravel or coarse sand will help improve drainage

Plants for Clay Soils

- Suitable for growing moisture-loving plants
- Because of its water-retaining characteristics, clay soil makes a good site for a natural pond or bog

Sandy Soil

Positive Characteristics

- Quick draining and easy to work
- Quick to warm in spring, which leads to a longer growing season

Negative Characteristics

- Dries quickly in times of drought
- Organic matter breaks down quickly
- Nutrients are quickly washed out, requiring fertilizer application

Improving Sandy Soil

- Mulch with organic matter to improve moisture retention
- Plant a cover crop, such as clover or buckwheat, to add organic matter to the soil
- Soils are prone to high acidity which requires the application of lime; regularly testing pH level is recommended

Plants for Sandy Soils

- Annuals and drought-tolerant plants
- Many types of trees can handle drought well, once established

Loamy Soil

Positive Characteristics

- Holds moisture and nutrients, so plants will need minimal watering or fertilization
- Supports the widest range of plant types

Negative Characteristics

- Because of high nutrient levels, over fertilizing is possible
- You will still need to test and maintain the soil pH level
- Not ideal soil for a wildflower meadow, which requires low nutrient levels



<http://learningaboutplants.com/soil.jpg>

Plants for Loamy Soil

- Most types of plants will grow well in these soils
- Demanding plants, which require a balance of moisture and nutrients, will thrive in loamy soil

Testing your Soil Texture

Testing soil texture is a simple process. Take a small handful of moist soil into your hand, and shape it into a ball. Then try to work it into a tube shape, and rub it between your fingers. Different soils will act in different ways:

Clay Soil

- Feels smooth and sticky when formed into a ball
- Will hold up well when rolled into a tube; will bend into a ring
- Shiny when rubbed between fingers

Sandy Soil

- Feels gritty and will not form a ball or tube
- Crumbles when rubbed between fingers

Loamy Soil

- Will form a ball, and will show finger impressions
- Smooth when rubbed between fingers, without being sticky

pH Level

While "pH Level" can sound like a daunting, overly scientific term, it can help you understand what type of plants will thrive in your soil. The pH scale runs from 1.0 to 14.0, and measures how acidic or alkaline ("limey") the soils are - the lower the soil pH level the more acid is present in the soil. Soil acidity will determine how easily your plants can access certain important trace elements such as manganese, aluminum, and iron.

It is important to test your pH level to know what plants will grow well in your soil, and what type of techniques you should use to make your soil friendlier to more types of plants. While most plants prefer soils that are "neutral" (not too acid or too alkaline), a few plants prefer a specific pH level and may require frequent testing and feeding if the soil is not naturally suited to their needs.

Alkaline Soils

Alkaline soils, or "sweet" soils, have high pH Levels (over pH 7). Contain high levels of calcium; low levels of iron, phosphorus, manganese and iron.



Positive Characteristics

- Generally well-drained
- Quick to warm in spring
- Plants generally grow to be sturdy in these soils

Negative Characteristics

- Will not support acid-loving plants
- Raising soil acidity is costly and impractical

http://farm3.static.flickr.com/2287/2962317191_29792f783c.jpg

Coping with Alkaline Soils

- Incorporate large amounts of organic matter to make nutrients more accessible and raise moisture retention
- To lower soil pH, add a source of acid, such as pine needles, shredded leaves, sulfur, sawdust, or peat moss

Plants for Alkaline Soils

- Lilacs, clematis, geraniums, eucalyptus, cabbage, cauliflower, celery, cucumber, thyme

Acidic Soils

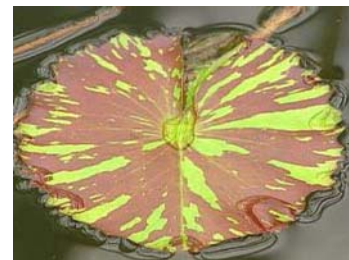
Acidic soils, or "sour" soils, have low pH Levels (under pH 7.0). Contain low levels of calcium, nitrogen, phosphorus, and potassium; high levels of manganese and aluminum.

Positive Characteristics

- Moderate levels of acidity will support most plants

Negative Characteristics

- Very acidic soils (pH of 4.5 or lower) can be toxic for some plants



http://img.hgtv.com/HGTV/2005/01/28/reb622_WaterLilies_leaves_lg.jpg

Coping with Acidic Soils

- To raise the pH of the soil, add an alkaline material, such as ground limestone ("lime") or wood ash

Plants for Acidic Soils

- Azalea, rhododendron, lupine, lily, hydrangea, blueberry, eggplant, raspberry, rhubarb, shallot, sweet potato, watermelon

Test your pH Level

Testing your pH level is something that should be done when starting a garden and about every two to three years thereafter. To undertake a soil test, you can either send soil samples in to a laboratory or do a soil test yourself with a take-home kit. If you want a more detailed, accurate set of results, sending it in to a laboratory is the best option; usually local university extension offices will maintain a listing of regional labs that do soil testing, and extension agents will be able to give you an idea of how much different labs charge for the testing service. Buying your own kit may be less expensive than sending soil in to a lab, but may not give you as detailed results.

There are a few important steps to follow when preparing soil samples for testing:

- Remove any surface debris, such as leaves, twigs, and pine needles, before digging your sample
- Sample to a depth of about 6-8 inches
- Samples are best taken with a soil probe or auger; if you do not have access to these tools a clean knife, spade, or trowel can work as well
- Mix each sample in a clean bag or bucket
- Take several samples of the same size from different parts of the garden
- Mark the location of each sample
- In planting beds, sample between rows to avoid fertilizer or other soil additives

Soil Improvement Techniques

The following techniques are often used by gardeners to improve the organic content of their soils. This organic matter is important for plants because it provides essential nutrients and increases the capacity of the soil to retain moisture. Adding organic material to sandy soils can increase nutrient levels while increasing the capacity of the soil to retain both moisture and nutrients, and adding it to clay soils can help loosen the soil to allow both roots and water to move through it.

How much organic matter you add to your soil will depend on its current composition, but it is best not to add too much to it at any one time. Too much organic matter can lead to large cracks in the soil that are left when it decomposes (a process called "shrinkage").

Mulching

Mulches are used by gardeners to moderate soil temperature, control weeds, and improve moisture retention. Inorganic mulches perform these basic functions, while organic mulches also help improve soil composition as they decompose. While inorganic mulches can be added any time of the year, many recommend that organic mulches should always be added in late fall or winter, so that they will help retain winter moisture, normalize soil temperature, and reduce the growth of weeds in the early spring. Organic mulches can be added any time during the growing season, however, and if added in the spring or summer they will still do a great job of reducing your watering and weeding time. Mulch should typically be spread across the surface of the soil to a thickness of 2 to 4 inches.

Inorganic Mulches:

- Burlap
Does not control weeds well; very good for preventing erosion on new slopes
- Felt Paper
Provides good weed control and insulates by absorbing heat from the sun; is expensive and must be weighted to keep it from blowing away
- Newspaper
Paper should be moistened before installation and covered with another mulch to hold it in place; provides excellent weed control, and should typically only be used between rows and on paths
- Plastic
Should be covered with another mulch to improve appearance, but provides good moisture retention and weed control; must be placed on soil in spring and removed in fall
- Stone
Dark stones retain heat, light stones reflect heat; can be very expensive and is not effective at controlling weeds unless placed over another mulch such as felt paper

Organic Mulches:

- Bark
Retains moisture well; great for use under trees and shrubs
- Cocoa Hulls
Expensive to purchase, but should be spread no thicker than 1 or 2 inches, or else it will mold; will add nitrogen to the soil as it decomposes
- Coffee Grounds
Best used in container gardens; should be spread no thicker than 1 inch
- Grass Clippings
Grass should be dried before application, or can get matted and mold; add nitrogen to the soil
- Dried Leaves
Should be chopped with a mower or shredder before application; can be mixed with other materials such as peat moss to aid in composition and keep leaves from blowing off of beds
- Ground Oyster Shells
Do not insulate the soil well, but do act like lime and help reduce soil acidity
- Straw
One of the best mulches for the price, straw decomposes rapidly and does a great job of insulating soil over the winter; avoid oat straw or hay, which may lead to weed problems
- Pine Needles
Low-cost when pine trees are nearby; very good mulch for acid-loving plants
- Saw Dust
Low-cost mulch, but decomposes slowly and robs soil nitrogen; high carbon content



<http://www.hereandthere.org/making-mulch/graphics/garden-mulch-done.jpg>

Composting

Compost is a powerful soil additive that can do much to improve soil fertility and plant productivity, and it is one that can be produced cheaply and effectively in your own garden. Compost is also friendly to the environment, because it is created from waste materials from the kitchen and garden. Compost can be used as mulch, but is most often worked into the soil rather than laid directly atop of it, or it can be used in combination with other organic mulches.



http://www.greenr.ca/blog/wp-content/uploads/2008/05/apartment_composting.jpg

Creating Compost

Compost is created by collecting the right types of scraps from your kitchen and garden, and allowing them to decompose in a compost heap or bin. Check out the Rebel Tomato Project Gallery page (<http://www.communitygardenwizard.com/shoots/project-gallery.php>) for detailed instructions on how to build your own compost bin from a few simple and inexpensive materials.

Compost creation is a complex biological process, but you will be able to create great compost with the right balance of warmth, moisture, and mix of materials. There are many books and other resources that offer detailed instructions on how to create and use compost, but there are a few very basic rules that will get you on your way to creating what many gardeners consider to be "black gold":

- Make sure your pile has a good mix of ingredients - a diverse blend is needed for successful, well balanced compost
- To keep your compost healthy, do not include any clippings or yard waste that may contain chemicals such as herbicides, pesticides, or fertilizer
- When adding kitchen ingredients, leave out animal products, such as meat scraps, which can attract rats, but do add vegetable and fruit scraps and peels, egg shells, and coffee grounds
- Do not add any weeds that have gone to seed, which may later germinate in your garden
- Keep air flowing in your compost pile by turning the pile once a month or so (some bins rotate, making this job a bit easier)
- Bigger is better! More heat will be generated by a big pile (but try to go no bigger than 3 feet by 3 feet)
- Keep the right balance of moisture in your pile or bin - too dry, and the decomposition process will slow down, too wet, and the pile will begin to stink

Check out the Vermicomposting Page at the end of this guide!



Cover Cropping

Cover crops have been used by farmers for generations, and can be good option for gardeners whose garden soils may need improving. There are many different types of cover crops, but all cover crops will benefit your garden in a number of ways: increase soil organic matter, decrease soil erosion and compaction, increase nutrient and nitrate levels, suppress weeds, attract beneficial insects, and increase yield of the following crop. You should check with your local university extension agency to find out which type of cover crop is best in your region.

Cover crops are usually cheaper than applying organic material directly to the soil, particularly if you do not have access to large amounts of compost. Because cover crops take up valuable garden space, they may be best used when just starting out a new garden, particularly if you are starting a garden in a city lot that may not have high levels of organic mater present in the soil. Cover crops can also be used in winter months, however, and these will have to be sown in late summer or fall.

Cover crops can be tilled into the soil just before the plants go to flower, or the greenery can be cut off at ground level and laid on the soil to act as mulch. The growing season for some cover crops is as short as 8 weeks, and you can generally plant immediately after the cover crop has been cut or worked into the soil.

Types of Cover Crops:

Some crops can be considered both summer and winter crops, but it is best to check with a local expert to find which will be most effective for your climate. Seeds can be obtained cheaply from online seed companies such as Johnny's Selected Seeds (<http://www.johnnyseeds.com/Home.aspx>), High Mowing Seeds (<http://www.highmowingseeds.com/organic-cover-crop-seeds.html>), and Pinetree Garden Seeds (<https://www.superseeds.com/>).

A few cover crop possibilities for:

Summer

Buckwheat
Italian rye
Clover
Alfalfa
Hairy Vetch
Millet
Soybeans

Winter

Oats
Winter Rye
Hairy Vetch
Field Peas
Clover



Hairy Vetch

http://www.seedssofchange.com/images/enewsletter/issue_37/covercrop_hairyvetch.jpg

Harvesting and Storage Tips

So you have successfully planted your vegetable and fruit garden, and spend all summer watering and weeding. Now you have an incredible variety of fresh produce, and you need to harvest it before animals and insects get to it! But how do you know exactly when to pick a cucumber, and how are you even going to eat all those potatoes?! This page will give you the knowledge you need to harvest fruits and vegetables correctly, and a series of storage techniques will help you enjoy your bounty year-round.

Harvesting

Knowing when to harvest your crops can not only help you enjoy the tastiest, most nutritious foods possible, but can also minimize the loss of produce to bugs, disease, or animals. There are a few basic harvesting tips to know that will help you make the most of your bounty.

What You Need, When You Need It

Generally, ripe fruits and vegetables will do better spending a few extra days in the garden than in your fridge. If you do not absolutely have to harvest, don't - produce loses valuable nutrients from the moment it is harvested, so you want to give it the shortest possible trip to your (or someone else's) plate.

Handle with Care

The fruits of your labor will fare the best when treated with care during the harvest process. Even produce that seems tough, such as onions, pumpkins and potatoes, will hold up best if they are treated with care. Rough handling can cause bruises, which will lead to spoilage and compromised taste.

Bigger Is Not Better

In gardening, "bigger is better" is usually not the case. Many vegetables, like eggplant, zucchini and beans, will become tough and lose flavor the longer they stay on the vine. If you want to grow a 20" zucchini to win a prize at the state fair, fine. But check seed packets for recommended fruit size to ensure the tastiest vegetables.

Beat the Heat

And the sun, for that matter. The best time to harvest is early in the morning, before the sun has come out. Produce will not have absorbed any of the day's heat, and will store much better. Leafy greens are particularly susceptible to heat and sunlight, and if you harvest large quantities in the heat of the day they may begin to wilt before you can even get them inside.

Easy Does It

When harvesting from a bush, vine, or tree, it is useful to remember that ripe fruits will almost literally fall into your hands. If you have to give more than a gentle tug to a melon, cucumber, tomato, or berry, it probably is not ready to be picked. To test yourself, try pulling on a fruit you know is not ripe, and compare that to a ripe one. With practice, you could almost harvest blindfolded!

Save the Tomatoes!

Winter is approaching quickly, and you still have tomatoes on the vine...but don't let it faze you. Make sure you

harvest any tomatoes that are mature, and have begun to turn from green to yellow. These mature tomatoes can be wrapped in newspaper and ripened inside. As long as you keep a careful eye on their progress, you will not have to lose any of your favorite crop.

Storage

Before the days of supermarkets and refrigerators, people had to devise creative ways to store produce from the summer harvest so that they would have enough to eat all year long. And because the foods you harvest from your garden have more flavor and nutrition than anything you can buy in the store, knowing a few storage techniques will help you extend the benefits of your garden into the winter months. Only the highest quality fruits and vegetable should be stored - eat any bruised or damaged produce when it is fresh. Different types of vegetables and fruits require different storage techniques, so it is useful to familiarize yourself with a few.

Canning

Another old-fashioned storage technique, canning has been around since the early 1800s. Canning alters the taste of fruits and vegetables somewhat, and canned foods have fewer nutrients than fresh ones. Canning requires some special, yet inexpensive equipment, and involves heating foods to kill any bacteria, and then storing these foods in sterile, air-tight containers. Different foods require different temperatures for processing, and it is worth reading a book on canning methods before you get started.

Best fruits and vegetables:

Apples, apricots, asparagus, green beans, lima beans, beets, carrots, cherries, corn, peaches, pears, peas, plums, potatoes, pumpkins, summer squash, winter squash, tomatoes



<http://en.wikipedia.org/wiki/Canner>

Drying

If you have ever eaten raisins or sun-dried tomatoes, you know how good dried fruits and vegetables can taste. Carefully dried foods can preserve much of the original nutrients of produce, and drying also concentrates sugars for an extra-sweet flavor. If you live in southern states, chances are that you have the climate needed to dry produce in your own garden - hot, dry, and somewhat windy weather is ideal for outdoor drying. Fruits and vegetables should be laid flat on an elevated piece of screen or mesh to allow for air circulation. For those of us not lucky enough to live in a sunny climate, drying can be accomplished in an oven set to a very low temperature, or in a special drying machine.

Best fruits and vegetables:

Apples, apricots, cauliflower, grapes, peaches, pears, peas, plums, tomatoes

Freezing

One of the most modern and popular types of food preservation, freezing is a great way to preserve the taste, color, and nutrients of your harvest. The only vitamins that are lost through freezing are vitamin E and B6 (vitamin C can be also lost if foods are stored for over six months), and it requires no special equipment other than freezer bags and a good freezer. It is recommended to blanch (briefly boil) most vegetables before freezing in order to remove any contaminants or bacteria, as well as preserve color. For the best results, freeze only very fresh, blemish-free produce.

Best fruits and vegetables:

Asparagus, green beans, lima beans, broccoli, cauliflower, corn, peas, peppers

Jams and Jellies

Jams and jellies are a great way to deliciously preserve produce, and the sale of these types of products can be a way to earn extra income from your garden. From sweet to spicy, jams and jellies are a popular way to enjoy summers' harvest all year long. Some vitamins are lost in the processing of jams and jellies, and the high amount of sugar added means that the products are not nearly as healthy as the real thing. But for an occasional treat, a homemade jam is a tasty way to enjoy strawberries, raspberries, blackberries, and other fruits (or even vegetables - like hot peppers!).

Best fruits and vegetables:

Apples, apricots, blackberries, cherries, figs, hot peppers, grapes, grapefruit, lemons, oranges, peaches, plums, raspberries, strawberries



Live Storage

This technique allows you preserve produce with the least amount of nutrient loss, but it only works for a few foods and in certain regions. This was one of the most common methods of storage on the American frontier, where people had no access to artificial cooling methods and had to rely on the great outdoors for their refrigeration needs. Produce is either kept in a cool area in storage containers (apples and potatoes), or is protected directly in the garden through coverings of straw or soil. For this technique to work, you have to live in a region with mild winters that still get cold enough to preserve produce (the Midwest, for example).

<http://www.energyfarms.net/files/user299/JanBaskets.jpg>

Best fruits and vegetables:

Apples, beets, cabbage, carrots, celery, garlic, onions, parsnips, pears, potatoes, pumpkins, radishes, rutabagas, winter squash, sweet potatoes, turnips

Pickling

In the U.S., the word "pickle" generally applies to the kind you find on a hamburger, which are a special type of cucumber that has a spicy, sour taste. This flavor comes from the spices and vinegars which are used to store the cucumber, not from the cucumber itself, and it is actually possible to "pickle" all sorts of vegetables (and fruits!).

Pickling requires the use of vinegar, but you can get creative with the amount of vinegar you use and the type of spices you add - from salt, pepper, garlic and dill (used for making the famous dill pickle), to sugar, cloves, and cinnamon (used for fruits such as watermelon, peaches, and pears). Try out a few recipes for pickling - you can create savory or sweet relishes, chutneys, and sauces that will change your concept of "pickle"!

Best fruits and vegetables:

Apples, beets, broccoli, cabbage, carrots, cucumbers, green beans, onions, peaches, pears, peppers, tomatoes, turnips, watermelons



http://sidewalksprouts.files.wordpress.com/2008/04/1150810521302_success.jpg

Happy Gardening!!!

Sources:

American Community Gardening Association

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Community Gardens Web Forum <http://forums.gardenweb.com/forums/commgard/>

Cornell University <http://www.hort.cornell.edu/gardening/homegardening/scene0391.html>

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http://web.mac.com/elementsintime/creatinglandscape/Elements_In_Time_-_Creating_Edible_Landscape/Entries/2008/3/15_Gardening_101:_How_to_Start_Seeds_Indoors.html

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JustFoods <http://justfood.org/cityfarms/tipsheets/>

Mother Earth's Garden <http://www.motherearthsgarden.com/preparing-to-start-seeds-indoors/>

New York Botanical Garden http://www.nybg.org/hgc_online/gardening_calendar.php

Old Farmer's Almanac <http://www.almanac.com/garden/frostus.php>

PlanTea, Inc. <http://www.plantea.com/seedstart.htm>

Rebel Tomato <http://www.communitygardenwizard.com/>

Timely Tips on Starting Seedlings at Home

<http://aggie-horticulture.tamu.edu/extension/ornamentals/seedlings/seedlings.html>

Special Consideration Crops

Asparagus	Best planted as crowns in a perennial garden, mid-April to end of May
Chives	Best planted as seeds or transplants in a perennial garden, mid-April to end of May
Garlic	Best planted as cloves in September or October
Horseradish	Best planted as root cuttings in a perennial garden, mid-April through end of May
Jerusalem Artichoke	Best planted as tubers, mid-May through early June
Perennial Herbs	Best planted as transplants in a perennial garden, mid-May through early June
Rhubarb	Best planted as crowns in a perennial garden, mid-April through end of May
Strawberry	Best planted as plants in a perennial garden throughout May