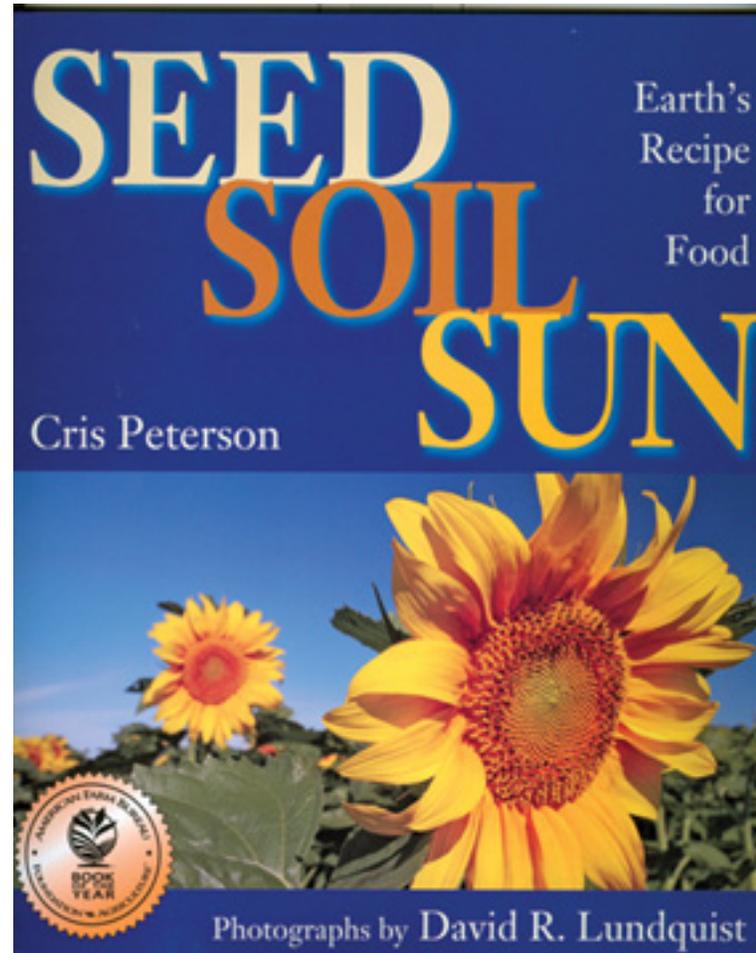


vegetables



Site Requirements

- 8 hours full sun
- Close to water
- Deep, well drained and uncontaminated soil



New site preparation

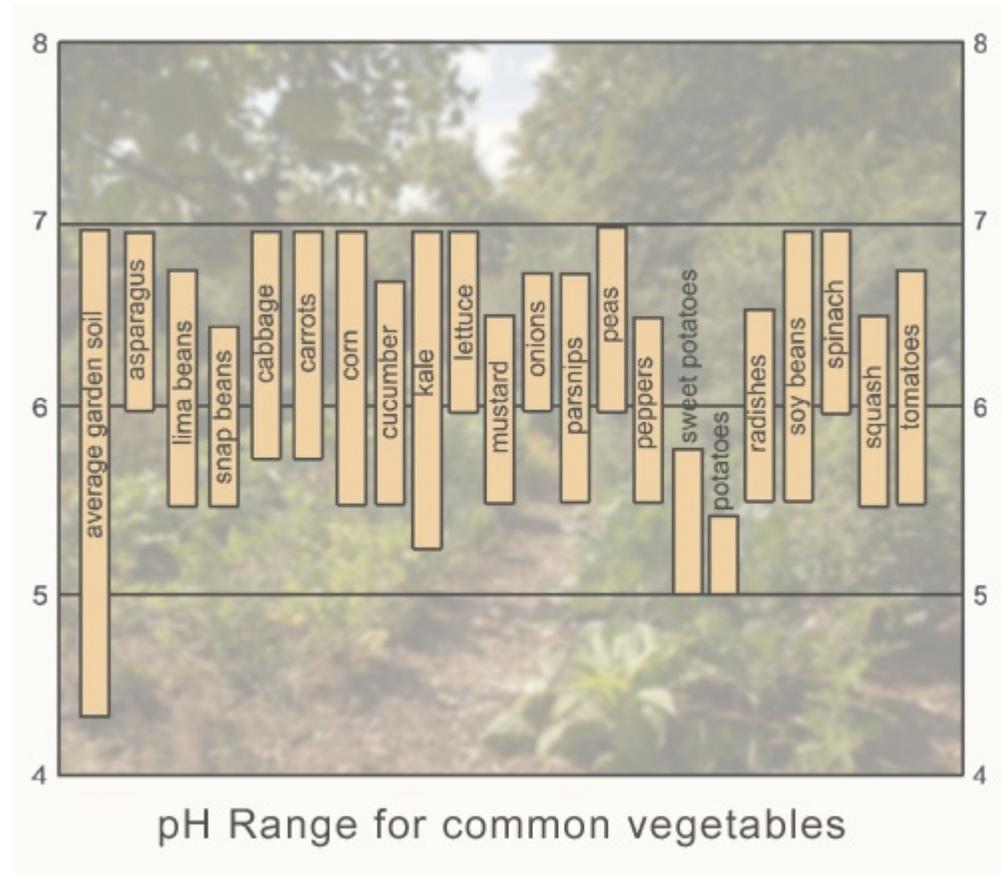
- Begin year ahead if possible
- Kill existing foliage
 - Glyphosates
 - Remove sod
 - Black plastic
- Remove dead plants, weeds, and rocks
- Till 2 or 3 times
- Add fertilizer based on soil test.
 - Lime
 - Organic matter

'Double digging' A Bed



Soil pH

- pH level for most vegetables should be 6.5
- Need to be dug 12 " deep
- Clay soils hold too much water
- Modifiers for clay soil
 - peat moss
 - compost
 - organic matter
 - composted manures
- Modifiers increase
 - earthworms, air space
 - and nutrient reserves



Fertilizers

- Add fertilizer based on soil testing
- Lime & organic matter best added in fall
- Use only well composted manure.
- Dig or till all fertilizers into the turned soil.



Fertilizer Components

N:P:K

Nitrogen - Helps stem and leaf growth.

Deficiency reduces growth and yellows the leaves.

Phosphorus - Helps seedlings and flowering- shoots & roots.

Potassium- Helps with fruit formation and photosynthesis.

Aids in disease resistance.

Manure is best used as soil conditioner not as the only source of fertilizer.

Fertilizers

Amount of fertilizers

- Garden soil has lost 1-3 lbs. of nitrogen per growing season
- Use 1-2 lbs. of dry fertilizer for every 100 ft. of row
- Leafy vegetables benefit from a side dressing of a balanced (10-10-10) fertilizer
- Vegetables grown for fruit, roots, or bulb benefit from a side dressing of a 5-10-5 fertilizer.

Timing of fertilizer application

- Fertilize seedlings grown indoors after first true leaves appear.
- Transplants benefit from the application of a starter fertilizer at planting.
- Fertilizer can be applied by side dressing to plants
 - **Apply to leafy crops after they are well established.**
 - **Fruiting crops should be side dressed after the first fruit is set.**

Commercial Non Organic Fertilizers



Crop Selection



- Check seed catalogs for crop information
 - Days to maturity
 - Determinate/indeterminate
 - Sun/shade tolerance
 - Watering preference
 - Disease resistance

Heirloom and All American Selections



Non hybridized variety
Grandma's tomatoes



Cool season crops



- Those that germinate at lower temp.
- Not injured by light frost
- Planting mid March-April
 - Peas, spinach, broccoli, onion sets, asparagus, celery, radish, spinach, turnips
- Bolt during hot temperatures-
 - Broccoli, Leaf lettuce & other greens
- Use cloches or row covers
- Cold frames

Warm Season Crops



- Plant after danger of frost, middle of May to first of June.
- Cucumber, pumpkins, snap beans, sweets corn, sweet potatoes, cantaloupe and squash **seeds** will rot if planted in cold, damp soil.
- Eggplant, peppers, tomatoes, and basil **plants** will be killed by frost

Reading a Seed Packet



- Check planting date.
 - Starting seeds indoors
 - Starting seeds in garden
- Length of growing season
- Size of plant
- V=resistant to Verticillium wilt
- FF =resistant to Fusarium wilt
- N= nematode resistance
- T= resistant to tobacco mosaic

Crop Rotation

- To reduce disease pressure, rotate crops as needed
- Plants in the same families tend to have the same diseases and pest problems
- Rotation of vegetable plants benefits the soil by varying nutrient demands
- For easy crop rotation, grouping vegetables by families is a good idea

Families of vegetables

- Nightshade family: eggplant, pepper, tomato, and potato
- Gourd family: pumpkin, squash, cucumber and melons
- Mustard family: cabbage, kale, broccoli, collards and radish
- Goosefoot Family: beets, Swiss chard, spinach
- Parsley Family: carrot, fennel, parsley, celery, parsnips
- Legume Family: all beans and peas.

Cultural Practices



Starting seeds indoors

- Timing of seed starting is critical. See chart on pg. 10-19 of MG book.
- Use potting mix in clean containers. Fill containers and place on trays.
- Wet soil, place seeds on wet soil, cover seeds with loose soil.
- Cover seed plantings with plastic until the seeds germinate, then remove plastic.
- Water seedlings from below

Vegetables Started from Plants

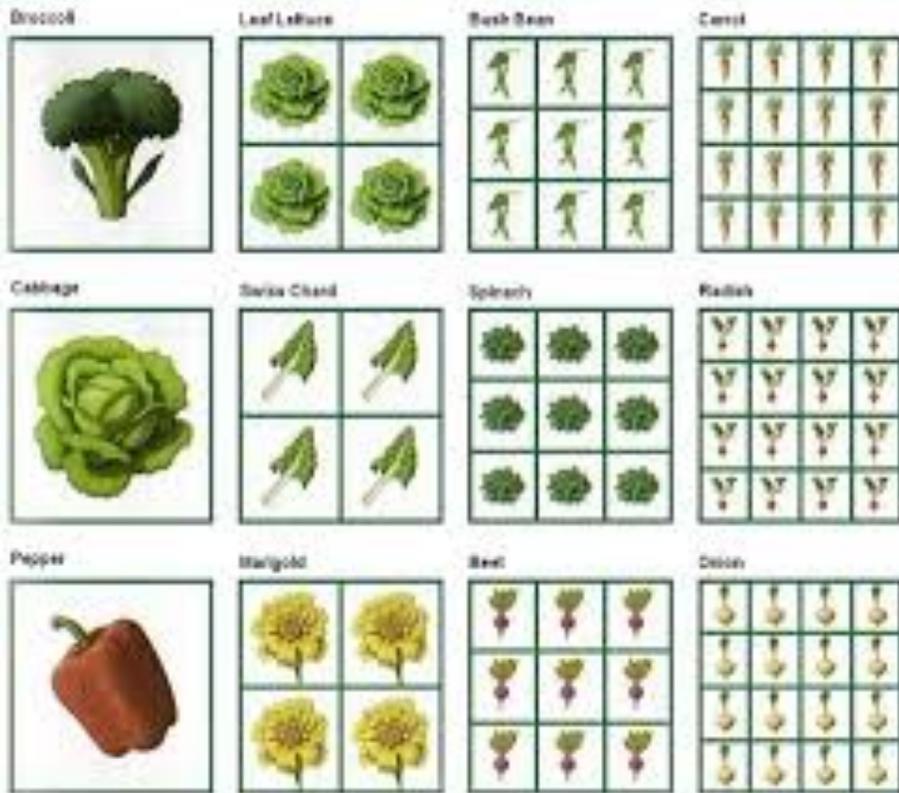
Vegetables Start	Move Plants to Coldframe	Set Plants in Garden	Days to Maturity from Setting Plants	Planting Distance in inches		Estimated Yield per 100 of Row	
				In the Rows	Between Rows		
Broccoli	Feb. 20	March 15	April 1	80	18	24	50 lbs.
Brussels sprouts ..	June 1-10	None	July 1 1	20	24	24	50 lbs.
Cabbage, early	Feb. 20	March 15	April 1	50	15	24	180-240 lbs.
Cabbage, late	May 15-June 1	None	July 15	75-80	18	30	
Cauliflower	June 1-10	None	July 15	100	24	30	45 heads
Celery, early	Feb. 1	None	April 20	90	6	24	200 stalks
Celery, late	April 15	May 15	July 1	110	6	24	
Eggplant	March 20	April 15-20	May 15**	80-90	24	36	150 fruit
Lettuce, head	Feb. 20	March 1	April 1	60	12	24	50 lbs.
Tomatoes	April 1	April 20	May 15	50	24	36	250 lbs.
Peppers	March 20	April 10	May 15	70	18	24	300 peppers
Sweet Potato	April 10	None	May 20	120	12	30-36	

Note: The planting dates are for normal seasons in central Ohio. Spring planting dates will be about 2 weeks earlier for southern Ohio, and 2 weeks later for northern Ohio.

*Adjust row spacing as necessary to accommodate equipment used for cultivation.

** Or after danger of frost is passed.

Plant spacing



- Square-Foot gardening
- Divided by strings & posts.
- Marking of 12" by 12" squares
- Reduces thinning by exact planting
- Designed to grow only as many plants as a person needs.
- Check Mel Bartholomew's book Square Foot Gardening

Raised Bed Gardening



Raised Beds

Reasons for Raised Beds:

- Poor drainage too difficult to remedy
- Soil too sandy or clay
- No available space except rooftop or patio
- Handicapped accessible

Advantages of Raised Beds

- Soil warms earlier in spring
- Soil has good drainage
- Cultivation easier because of loose soil
- Higher yield than in traditional garden bed

Vertical Space



Vertical spaces comes in many forms: trellises, cages, stakes, tepees, twine, and nearby fences.

Vertical grown crops can be placed closer together.

Spacing Bean seeds 5" apart and trained upward need less space to grow than bush beans.

More Vertical Space



Tomatoes are usually grown in cages or on stakes to keep the fruit off the ground and enable more plants to be placed in an area. This will help to keep the fruit solid and firm instead of rotting on the ground and less disease pressure because of the better air circulation.

Planting Seeds Outdoors



- Seed packet information will describe proper depth and spacing of seeds
- Cover seeds lightly with soil
- Water sparingly but keep soil moist
- Watch for true leaves to appear



- Watch the seedlings for the appearance of true leaves.
- When true leaves form, thinning of plants can proceed
- Transplant seedlings on a cloudy day or late in the afternoon
- Transplants should be placed at the same planting depth
- Water transplanted seedlings

Planting vegetable plants in the garden





- Lay out your garden with strings and cages before you plant
- If tomato or broccoli plants are spindly, plant them in trenches so that only the top few inches of the plants are above the soil.

Watering

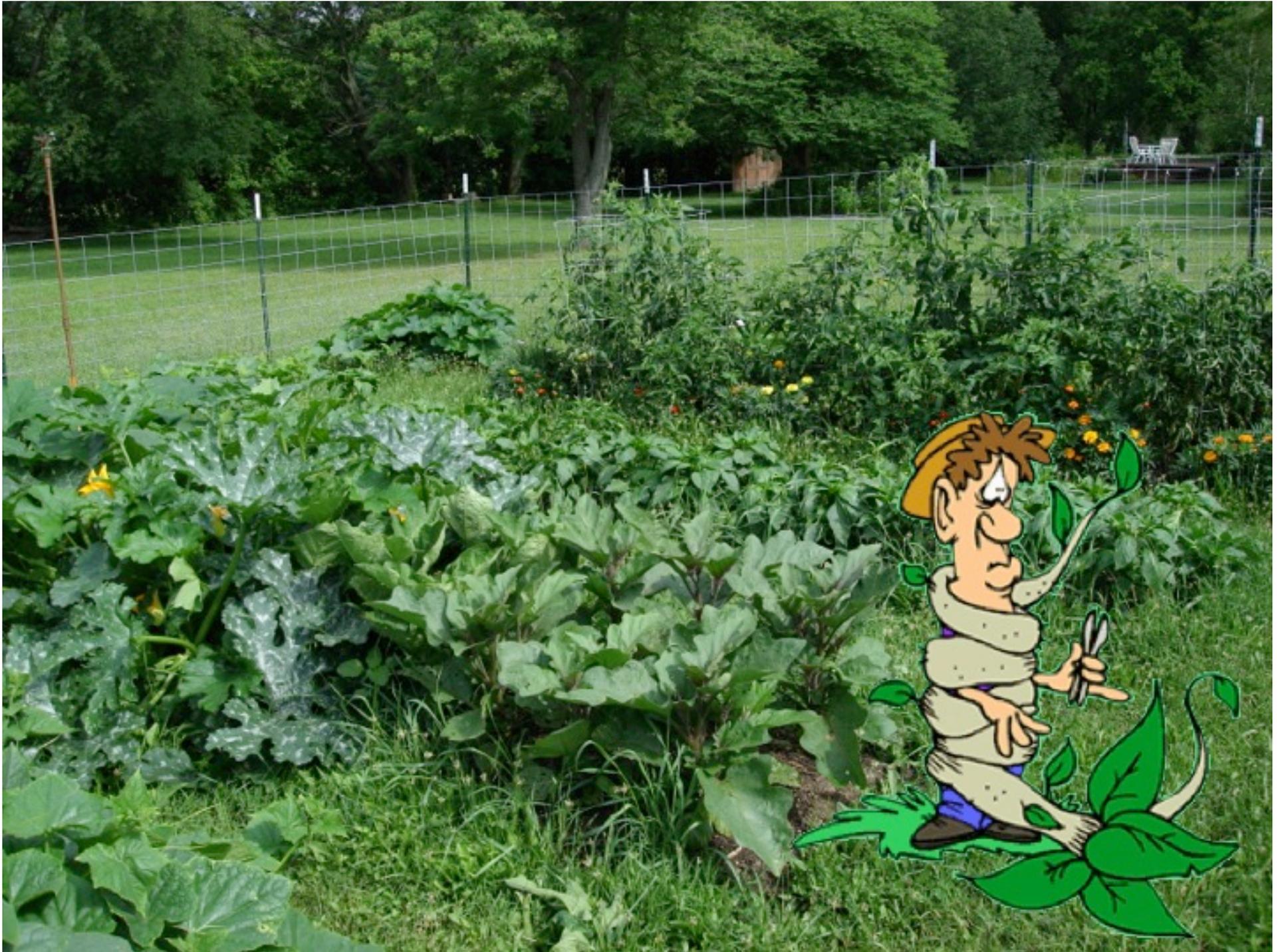


Methods of watering

- The ideal watering system delivers the water to the soil without getting the foliage wet
- Soaker hoses or hand held watering wands are the ideal watering tools
- Soaker hoses can be buried 2-4 “ deep before planting or laid on top of the soil around the plants

When to water

- When using soaker hoses, water in the heat of the day.
- If evening is the only possible time to water, avoid splashing the foliage
- Avoid frequent light watering, instead thoroughly soak the soil less frequently
- Fruit crops should not be allowed to wilt between flowering and fruit production.



Sanitation

- Remove diseased plants from the garden to prevent spread of disease
- Diseased plant material should not be composted
- Remove weeds because they compete for nutrients and water from the soil
- Weeds can be composted
- If possible, keep pets out of the garden

Mulching

- Mulching is an excellent way to control weeds and retain moisture
- Mulching materials for vegetable gardens include **herbicide free** grass clippings, straw, newspaper, well rotted compost and leaf humus
- Plants should be mulched right after planting

Questions