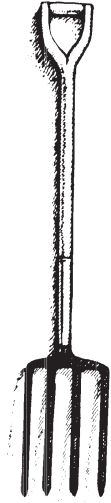


The Vegetable Garden

H.C. Harrison



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Gardening is a universal hobby. A vegetable garden can provide nourishing food, healthful exercise and profitable leisure for people of all ages.

Vegetable plants, like other living, growing things, have certain requirements. They need a good fertile soil, water, sunlight and protection from their enemies. The successful gardener knows these requirements and carefully fulfills them at the right time.



Planning the garden

Plan your home garden carefully—this saves time and labor. With a garden plan on paper, you'll get the most produce from the space available. Finish the plan by early February so you have time to order seeds and start plants for transplanting on time.

Your finished garden plan—like the one shown on page 3 for a 15- x 25-foot garden—should indicate

- (1) what crops you're going to grow
- (2) the number of plantings of each crop
- (3) when and where each planting occurs, and
- (4) the distance between crop rows.

A list of seeds and plants needed for the vegetable garden and a planting schedule follow the sample plan. Select cultivars for your garden from the list on pages 5 and 6. You can also determine the amount of seeds and plants needed for a larger or smaller garden from information in the Planting Guide on page 20.

Choose the right garden spot

Vegetables grow best in full sunlight in a loose, fertile, well-drained soil that has plenty of organic matter. Choose a level spot for your garden away from trees and shrubs; stay at least 50 feet from black walnut or butternut trees to avoid walnut wilt on tomatoes and other sensitive crops.

Avoid planting on sloping areas when possible. But if you do till these areas, plant rows across the slope to prevent excessive water runoff and erosion. Otherwise, the direction of rows makes little difference in the growth and yield of crops.

The garden's size depends on how much space is available, how many people the garden will feed, and how you cultivate and arrange the crops. Reduce the work of preparing the soil and controlling weeds by using as small an area as possible.

A fence around the vegetable garden may help keep out rabbits and other garden pests, but it has several disadvantages. Fence rows take up room that could mean more vegetable plants, and harbor weeds and certain insects and diseases. A fence may also be a nuisance if you use power tools to prepare the soil.

Select crops your family likes

To begin your garden plan, consider the family's likes and dislikes and your garden space before deciding on crops and varieties. The Planting Guide will help. It suggests how many seeds or plants you'll need for each family member to have fresh produce, plus produce for canning and freezing. It also shows how much space the plants need.

Next, arrange crops carefully on paper. Try to grow the plants in the smallest space possible. Remember, the larger the garden, the more time you will spend weeding. Don't include sweet corn in a garden smaller than 600 square feet, because it takes up a lot of space for its yield.

Place perennial crops such as asparagus, rhubarb, and winter onions along the north edge of the garden to prevent shading of smaller annual plantings. These crops stay in the same place for several years and should be placed where they will not be in the way or damaged when you prepare the soil.

Plant perennial crops in rows, away from a fence or garden edge, and allow enough space between rows and plants for good growth and easy care. Be sure the area is free of quackgrass before planting.

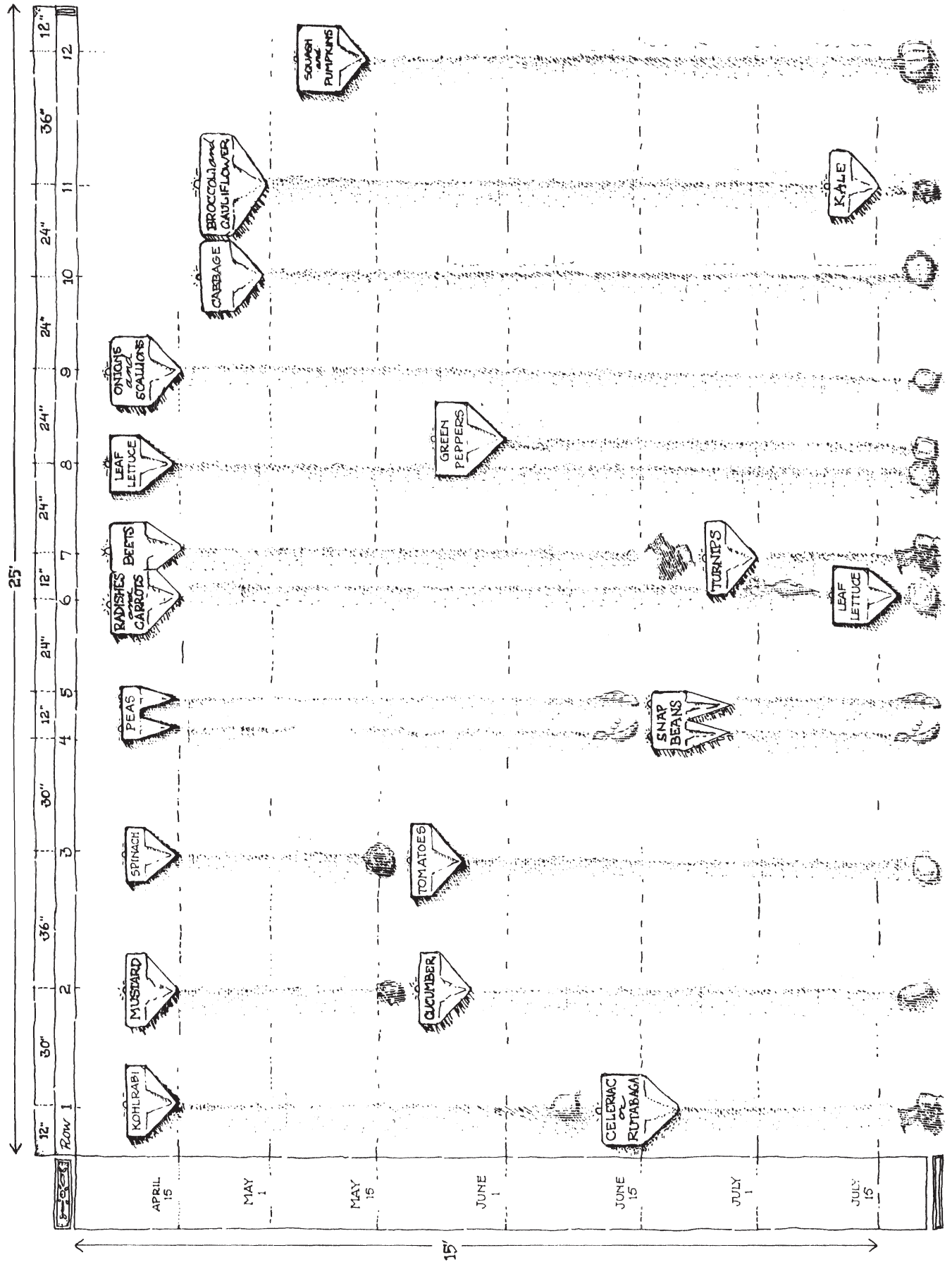
Plant short rows

Short rows across the garden have many advantages. There is only one crop in each row so gardening is easier—the plants go in at the same time, grow at the same rate, and need the same space. For many crops, a 15-foot row at any one planting is all you'll need. If you need more, plant extra rows.

Some crops, like sweet corn, pollinate better if you plant four or more rows together. Several short rows planted at one time are especially helpful with this crop.

Locate and mark both ends of rows with numbered stakes as soon as the soil is ready for planting.

Plan for a vegetable garden (15 x 25 feet)





Practice intensive cropping

With intensive cropping all space is used by crops throughout the growing season. Thus, this gardening method saves space. You plant crops that grow fast and are used quickly between rows of slower growing crops or in the same row as crops that you start later or that grow slower.

For example, you can plant early radish and spinach in the same row that you'll later put late beet, late carrot, Chinese cabbage, cucumber, or tomato. Tomato plants are often set in the row before the early crop is all harvested. Cucumbers, if transplanted or seeded in hills, can be planted in the same way. You can also plant early, quick-growing crops like radish, spinach, and leaf lettuce between rows of cucumber, pumpkin, squash, or tomato.

The garden plan on page 3 shows three methods of intensive cropping.

In row 1, two crops are grown in the same row (kohlrabi followed by rutabaga or celeriac). The rutabaga or celeriac are planted as soon as the kohlrabi are harvested.

In row 6, two crops are grown together in the same row (carrots and radishes). Carrot and radish seeds are planted in the garden at about the same time, but the radishes germinate faster and are harvested before the carrots need the space. Leaf lettuce is seeded in this row after the radishes and carrots are harvested.

In row 8, pepper transplants are placed beside the lettuce after it has germinated but before it is harvested.

Intensive cropping takes diligent crop management, including an increased need for plant nutrients and water as well as careful weeding, thinning, and mulching.

Follow a planting schedule

A planting schedule will help you get your vegetables in on time. Here is a schedule for the 15- x 25-foot garden. The planting dates are about right for southern Wisconsin, but the weather may change them somewhat.

If you live in central Wisconsin or along the lower lakeshore, plant about 1 week later than indicated. Plant approximately 2 weeks later in northern Wisconsin. The growing season in northern Wisconsin will sometimes be too short to allow succession planting.



Seeds and plants needed for a
15- x 25- foot garden

| | |
|----------------------------------|--------------------------------|
| Beans: 2 packets | Onions: 32 plants |
| Beets: 1 packet | Peas: 1/3 pound |
| Broccoli: 5 plants | Peppers: 10 plants |
| Cabbage: 11 plants | Potatoes: 1 1/2 pounds |
| Carrots: 1 packet | Radishes: 1 packet |
| Cauliflower: 8 plants | Rutabagas: 1 packet |
| Celeriac: 30 plants | Scallions: 2/5 pound |
| Cucumbers: 1 packet | Snap Beans: 3 ounces |
| Chinese Cabbage: 1 packet | Spinach: 2 packets |
| Kale: 1 packet | Summer Squash: 1 packet |
| Kohlrabi: 1 packet | Tomatoes: 8-10 plants |
| Leaf Lettuce: 2 packets | Turnips: 1 packet |
| Mustard: 1 packet | Winter Squash: 1 packet |

Cultivars (varieties)

This list of adapted cultivars and hybrids is from Extension publication *Vegetable Cultivars and Planting Guide for Wisconsin Gardens* (A1653). This publication is revised annually and is available from your county Extension office.

The Planting Guide (page 20) gives days to first harvest for each crop. With crops started in the garden—such as bean and carrot—this means the number of days from seeding to first harvest. When you set plants out—such as early cabbage or tomato—it means the number of days from transplanting to first harvest. Cabbage, sweet corn, and pumpkin are listed in order of earliness; the others are listed alphabetically.

Several cultivars carry resistance or tolerance to one or more diseases. This information can be found in most seed catalogs.

- ASPARAGUS—All-male hybrid:** Jersey Giant, Jersey Knight.
Open-pollinated: Mary Washington.
Specialty: Purple Passion.
- BEAN—Bush, green:** Blue Lagoon, Bush Blue Lake 274, Bush Romano, Contender, Derby, Flevaro, Greencrop, Hystyle, Labrador, Provider, Venture.
Bush, lima: Henderson, Thorogreen.
Bush, wax: Cherokee, Goldcrop, Goldrush, Pencil Pod (yellow).
Pole: Blue Lake, Goldmarie, Kentucky Blue, Kentucky Wonder, Kentucky Wonder Wax, King of the Garden (lima), Romano, Trionfo (purple).
Soybean: Black Jet, Butterbean.
- BEAN, SPECIALTY—Dry:** Coco-rubico, Jacob's Cattle, Midnight Black Turtle, Vermont Cranberry.
Filet: Dandy, Jade, Nickel, Triumph de Farcy.
Purple: Royal Burgundy, Sequoia.
Other: Dark Red Kidney, Scarlet Runner.
- BEET—Big or Tall Top (for greens),** Chioggia (striped), Cyndor, Detroit Dark Red, Golden Beet, Kestrel, Lutz, Moneta (monogerm), Pablo (baby beets), Red Ace, Ruby Queen.
- BROCCOLI—**Decathlon, Emperor, Green Belt, Green Comet, Green Valiant, Packman, Premium Crop, Raab (cutting), Romanesco Minaret (sprouting).
- BRUSSELS SPROUTS—**Captain Marvel, Jade Cross, Prince Marvel.
- CABBAGE—Standard:** Bravo, Dynamo, Gourmet, Jersey Wakefield, Stonehead, Wisconsin Golden Acre.
Sauerkraut: Cheers, Hinova, Krautman.
Specialty: Perfection, Red Danish, Ruby, Savoy Ace, Savoy Express, Savoy King, Sombrero (red).
- CARROT—Main Crop:** Apache, Bolero, Cheyenne, Danvers, Enterprise, Healthmaster, Ithaca, Kuroda, Navajo, Nelson, Red Cored Chantenay, Scarlet

Nantes, Sugarsnax 54, Sweetness II, Sweet Rocket, Triple Play 58.

Specialty: Bolina, Little Finger, Minicor, Thumbelina.

CAULIFLOWER—Alverda (green), Chartreuse II, Polar Express, Silver Cup 45, Snowball Y, Snow Crown, Snow King, Violet Queen.

CELERIAC (root celery)—Brilliant, Mentor, Prague.

CELERY—Golden: Golden Self-Blanching.

Green: Summer Pascal, Utah 52-70.

Leaf: Amsterdam Fineleaf.

CHARD—Green: Fordhook Giant, Large White Ribbed.

Red: Charlotte, Rhubarb.

Multi-color: Bright Lights

CHICORY (for winter forcing)—Witloof.

CHINESE CABBAGE—Blues, Michihli (seed after June 20), Springtide.

COLLARD—Champion, Flash, Georgia, Vates.

CORN, MINI EARS—Cutie Pink and Blue, Laser, Little Indian Mini, Little Jewels.

CORN, ORNAMENTAL—Fiesta, Indian Summer, Rainbow, Red Stalker, Strawberry, Trinkets, Wampun.

CORN, POP—Ipop 12, Little Boy Blue, Pretty Pops Laser, Ruby Red, Shaman's Blue, White Cloud.

CORN, STANDARD SWEET (listed from earliest to latest)—Jubilee, Silver Queen (white).

CORN, SUGARY ENHANCER SWEET (listed from earliest to latest)—Yellow: Sugar Buns, Parfait, Applause, Kandy Plus.

White: Celebration, Frosty, Alexis, Fantasia.

Bicolor: Blaze, Native Gem, Rapport, Bon Appetit TSW, Extase II, Trinity, Wizard, Temptation, Yankee Gem, Bojangles, Early Ambrosia, Luscious, Ambrosia, Brocade, Mystic, Jackpot, Serendipity, Colonial, Double Play, Charmed, Precious Gem, Providence, Accord.

Red: Sweet Scarlet.

CORN, SUPERSWEET (listed from earliest to latest)—Yellow: Saturn, Impulse, Sweet Ear, Punchline, Bandit, Morning Star, Flagship II, Super Honey Bantam, Mirai 002.

White: How Sweet It Is, Tahoe, WWS 1921, WSS3681, WSS9870.

Bicolor: Jumpstart, Fantasy, Confection, Candy Corner, Radiance, 277A, Madonna, Topnotch, 278A, A-Mazingly Sweet, Polaris, Bicolor Saturn, Starship II, Mirai 301B, Indian Summer.

CORN, TRIPLESWEET (has sugary enhancer and supersweet kernels)—Honey Select (yellow).

CUCUMBER—Burpless: Orient Express, Sweet Slice, Tasty Green.

Pickling: Arabian, Colt, County Fair, Cross Country, Jackson, Lafayette, MacArthur, Patton, Regal, Royal.

Slicing: Armenian, Dasher II, Diva, Fanfare, Marketmore 76, Marketmore 86, Raider, Salad Bush, Speedway, Sugar Crunch, Sweet Success.

Specialty: Lemon.

EGGPLANT—Miniature: Bambino.

Oval: Black Beauty, Dusky, Kiko, Megal, Neon, Purple Rain, Rosita, Santana, Zebra.

Oriental: Agora, Bride, Ichiban, Machiaw, Millionaire.



ENDIVE—Escarole: Broadleaf Batavian, Florida Deep Heart, Full Heart Batavian.

Green curled: Salad King.

GROUND CHERRY (also called husk tomato)— Goldie

KALE—Dwarf Blue Curled Vates, Lacinto, Ornamental, Redbore, Red Russian, Squire, Tuscan, Vates.

KOHLRABI—Gigante, Grand Duke, Purple Vienna, Early White Vienna.

LEEK—American Flag, Blue Solaize, Giant Musselburg, Otina, Pancho, Rikor.

LETTUCE—Batavia: Loma, Nevada, Sierra.

Butterhead: Buttercrunch, Pirat, Red Riding Hood.

Leaf: Baby Oak, Brunia (red oakleaf), Fanfare, Lollo Rossa, Oakleaf, Prize Head, Red Fire, Red Sails, Royal Red, Ruby, Salad Bowl, Simpson Elite, Waldmann's.

Romaine: Freckles, Parris Island Cos, Rosalita, Rubens.

MELON—Exotic: Amy.

MUSKMELON—Angel, Athena, Delicious 51, Earlidew (honeydew), Earligold, Earliqueen, Earlisweet, Eclipse, Esteem, French Orange, Gold Star, Harper, Iroquois, Passport (green interior), Saticoy, Sweet 'n Early.

MUSTARD—Green Wave, Southern Curled.

OKRA—Annie Oakley II, Cajun Delight.

ONION—Sets (largely for green onions): Ebenezer.

Seeds and transplants: Copra, Hustler, Red Burgermasters, Spartan Banner 80, Super Star.

Seeds and transplants (mild, may not keep all winter): Candy, Fiesta, Mars, Mercury, Superstar, Sweet Sandwich, Walla Walla, Yellow Spanish.

PARSNIP—All-America, Model.

PEA—Standard (need to be shelled): Alaska, Alderman (tall), Early Frosty, Freezonian, Green Arrow, Laxton's Progress #9, Mr. Big, Novella II (semi-leafless), Wando.

Edible pods (snow): Dwarf Gray Sugar, Mammoth Melting Sugar (tall), Oregon Sugar Pod II (dwarf).

Edible (snap peas): Sugar Daddy (dwarf), Super Sugar Snap (tall).

Cowpea (southern): Pink-eyed Purple Hull.

PEPPER—Hot: Anaheim College, Ancho 101, Delicias, Early Jalapeño, Habañero, Hero, Mucho Nacho, Mulato Isleno, Red Habañero, Señorita, Super Cayenne, Super Chili, Tiburon.

Sweet: Acapulco, Antohi Romanian, Bianca (ivory), Big Bertha, Big Red, Blushing Beauty, Buran, Chocolate Beauty, Early Cal Wonder, Edino, Elisa, Figaro, Gourmet, Gypsy (yellow), Islander, Ivory, King Arthur, Lilac Bell, Lipstick, Mavros (black), Merlin, North Star, Secret, Super Heavyweight, Valencia, Yankee Bell.

Specialty: Apple, Fooled You, Giant Marconi, Sweet Banana Supreme.

POTATO—Early: Dark Red Norland, Superior (white).

Midseason: Atlantic (white), Goldrush (russet), Ranger Russet, Red Pearl, Russet Norkotah.

Late: Red Pontiac, Russet Burbank, Snowden (white), Yukon Gold (white skin, yellow flesh).

Specialty: French Fingerling (red skin, yellow flesh), German Butterball (yellow)

PUMPKIN (listed from earliest to latest)—

Miniature: Wee Be Little, Baby Boo, Spooktacular, Jack Be Little, Munchkin, Baby Bear, Trickster.

Medium: Autumn Gold (carve), Jack of All Trades, Spirit (carve, cook), Small Sugar (cook), Casper (white; cook, craft), Fairytale (cook, craft), Cinderella (cook, craft), Trick or Treat (naked seed, carve), Neon (carve), Ghostrider (carve), Orange Smoothie (cook, craft).

Large: Appalachian, Aspen, Big Autumn, Mother Lode, Howden, Connecticut Field, Gold Strike, Gold Rush, Jumpin' Jack, Sorcerer.

Giant: Prizewinner, Atlantic Giant

RADISH—April Cross (winter type), Cherry Belle, Early Scarlet Globe, French Breakfast, Round Black Spanish (winter type), Snow Belle, White Icicle.

RHUBARB—McDonald, Valentine.

RUTABAGA—American Purple Top, Laurentian.

SALSIFY—Mammoth Sandwich Island.

SPINACH—Long Standing Bloomsdale, Melody, New Zealand ("summer spinach"), Olympia, Tye.

SQUASH, FALL—Amber Cup, Burgess Buttercup, Butternut Ultra, Early Butternut, Eastern Rise, Emerald Bush Buttercup, Jarradale, Lakota, Minigreen Hubbard, Mini Orange Hubbard, Mooregold, Pasta (spaghetti), Sunshine, Sweet Mama, Waltham Butternut.

Acorn: Carnival, Cream of the Crop, Heart of Gold, Table Ace, Table Gold, Table King, Table Queen.

Delicata-type: Cornell's Bush Delicata, Delicata, Sugar Loaf.

SQUASH, SUMMER—Early Prolific Straightneck, Papaya Pear, Peter Pan, Scallopini, Seneca Butterbar, Sunburst, Sundance, Tromboncino.

Zucchini: Chiefini, Clarimore, Eight Ball, Gold Rush (yellow), Grezini, Jaguar, Spineless Beauty.

SWEET POTATO—Centennial, Jet, Vardaman.

TOMATILLO (garden huckleberry)—Purple, Toma Verde.

TOMATO (h=heirloom)—Early: Daybreak, Early Girl, First Lady, Miracle Sweet, Siletz, Sunstart, Sweet Cluster, Wayahead.

Maincrop: Aunt Ginny's (h), Bandy Boy, Better Boy, Big Beef, Big Boy, BHN 444 (VFF hybrid), Boondocks (h), Brandywine (h), Campbell 1327, Celebrity, Floramerica, Heinz 1350, Husky Gold, Husky Red, Jet Star, Pink Girl, Pruden's Purple (h), Red Brandywine (h), Striped German (h), Ultrasweet, Yellow Brandywine (h).

Paste or salsa: Debaro, Italian Gold, Roma VF, Sheriff, Tuscany, Viva Italia.

Small-fruited: Gardener's Delight, Jolly, Juliet, Orange Pixie, Small Fry, Sugar Lump, Sugar Sun, Super Sweet 100, Sweetie, Sweet Million, Tiny Tim, Yellow Pear (h).

TURNIP—Purple Top White Globe, Tokyo Cross.

WATERMELON—Golden Crown (yellow rind, red flesh), King-of-Hearts (seedless), New Queen, Orange Sunshine, Royal Jubilee, Sugar Baby, Sweet Beauty, Sweet Favorite, Yellow Baby, Yellow Doll.

Seeds

Planting superior cultivars is a first step toward successful gardening. Planting high quality seeds is also important. Good seeds will be inexpensive in the long run; poor seeds are costly at any price. Plant disease-resistant cultivars when available.

Select good seeds

Seeds or plants of recommended new cultivars can sometimes be difficult to find. Those not available from local seed stores or plant growers may be ordered from retail catalog suppliers. Have seeds on hand by mid-February, especially those for growing early transplants. Delaying may mean you won't get seeds for choice cultivars, or that seeds intended for transplanting will not get started on time.

Store leftover seeds carefully

Place unused seeds in a closed container and store them in a refrigerator or other cool, dry place. Don't save onion, parsley, parsnip, and sweet corn seeds for more than one year unless refrigerated; then plant more thickly because germination will be reduced. Other good quality vegetable seeds generally will sprout very well the third season, and if you sow somewhat thicker, may be used until four or more years old. Discard questionable seeds or test a sample ahead of planting time.

If you collect seeds from your garden

Saving seeds from many vegetables grown in the home garden is often not advised. Home-saved seeds of some crops may carry disease; cultivars of cross-pollinated crops may be badly mixed; and seeds from hybrids do not breed true. Biennial vegetables such as beet, cabbage, carrot, onion, and rutabaga must be stored over winter and transplanted outdoors the following spring for seed production. However, there is increasing interest in heirloom varieties, most of which are open or self-pollinated. Seeds that usually can be successfully collected include bean, lettuce, pea, pepper, and tomato.

Transplants

Certain vegetables are usually grown from plants started indoors. This results in earlier crops, longer harvest, and sometimes better quality produce.

Commonly transplanted vegetables include broccoli, cabbage, cauliflower, celery, eggplant, head lettuce, onion, parsley, pepper, sweet potato, and tomato. Other crops sometimes grown from transplants include Brussels sprouts, cucumber, muskmelon, okra, pumpkin, squash, and watermelon.

If you buy plants locally or order from a catalog seed company, try to get the cultivars you want and make sure they are free from insects and diseases. Place your order early so you receive the plants before the general date you'll begin planting.



Grow plants at home

With proper care, you can grow vigorous, healthy vegetable plants at home. You can grow plants in the house, in a poly house, in tunnels, in a hotbed, or start plants in the house and later transfer them to a cold frame.

A hotbed is a small, covered structure with some form of artificial heat—such as electricity. A covered window-well heated with air from a warm basement is one type of hotbed.

A cold frame is similar to a hotbed but without artificial heat. A cold frame protects plants by trapping heat from the sun during the day and holding it overnight.

You should not place plants in a cold frame until they are several inches tall, and the weather should be milder with night temperatures at least in the upper 20s. In addition, you should raise the tops or lids of cold frames during the day if temperatures reach 50°F.

Control damping off

A major problem growing plants indoors is that they often get damping-off, or seedling rot, unless started in a disease-free growing mixture. Overwatering, too much heat, not enough space, or too little light can result in this disease.

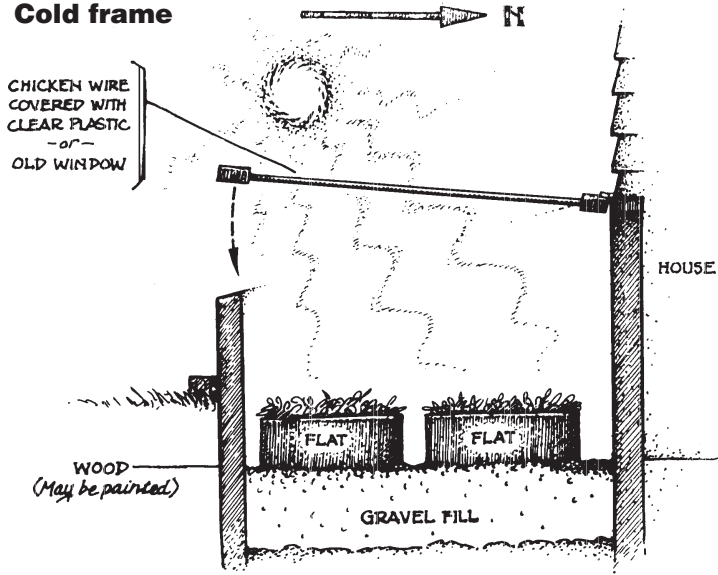
You can avoid damping-off by: (1) using a disease-free growing mixture (2) buying fungicide-treated seeds, and (3) careful watering.

Plant in inexpensive containers

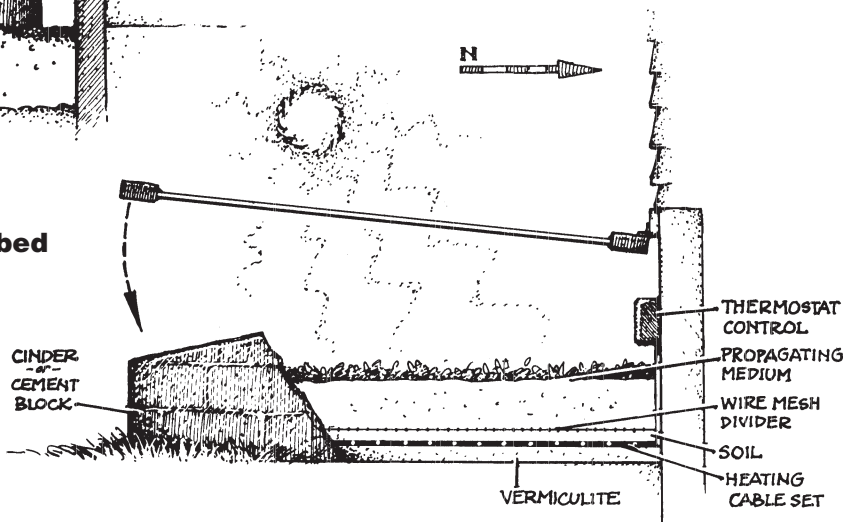
Fiber or plastic trays with or without separate compartments, and wooden boxes or flats are commonly used for starting vegetable plants. These containers are convenient, inexpensive, and easy to get or make. You can also use flower pots, berry boxes or other containers. Cubes, discs, or pots made from peat work well for starting cucumber, melon, pumpkin and squash, because the roots of these plants should not be disturbed at transplanting time.

In most cases, you can plant crops that have the same growth requirements together in one flat. For example, use one flat for broccoli, head lettuce, cabbage and cauliflower, and another flat for starting tomato and pepper.

Cold frame



Hotbed



Containers should be about 2½ to 3 inches deep. The wooden flat commonly used by greenhouse plant growers is about 2¾ inches deep, 14 inches wide, and 20 inches long. Smaller boxes or plastic trays—about 2½ inches deep, 10 inches wide and 12 inches long—work better for the home gardener.

Narrow cracks or small holes in the bottom of containers ensure good drainage. Put a sheet of newspaper beneath the containers to keep soil from falling through cracks in wooden boxes. Then fill each container with clean, moderately fertile growing mixture, making it level and firm.

You can also purchase cell packs that are open on the bottom, allowing air pruning of the roots. This helps prevent plant roots from becoming “pot bound” or circling around the inner edge and bottom of the pot.

Use good growing mixture

You can make a good growing mixture by using equal parts of potting soil, peat or compost, and perlite or vermiculite. An alternative growing mixture is the commercial soil or soil-less mixtures available at garden centers. However, soil-less mixtures have no nutritional value so you must add a water-soluble fertilizer once the seeds germinate. You must also thoroughly wet the soilless mixes before planting your seeds.

Place seeds in trenches about ¼ to ½ inch deep and 1½ to 2 inches apart, depending on seed size. A good rule of thumb is to plant the seed 2 to 3 times deeper than the seed’s diameter. You can make trenches easily and to an even depth with a piece of thin board rounded on one edge and just long enough to reach across the inside of the container.

Sow the seeds fairly thinly for most crops—8 to 10 per inch (or 2 in each compartment)—and cover with the growing mixture. Water thoroughly by putting the container in a shallow pan so water soaks in from the bottom. If you add water from the top, place a cloth over the container to prevent washing.

After you’ve watered the seeds, cover the container with a piece of window glass, cloth, paper, plastic, or other material to prevent drying and set in a warm place (about 75° to 80°F). As soon as seedlings begin to appear, take off the cover and shift the container to a cooler place (about 65° to 70°F) where there is plenty of light. Water only when needed to keep seedlings from wilting.

Thin out or move seedlings

When seedlings are large enough to handle (or as soon as the first true leaves start to grow), thin them carefully or lift and reset them in a slightly moist growing mixture in other containers. You can even put them directly in a hotbed.

Onions are the exception. Leave onion seedlings in the original container until time for planting outdoors. As the weather becomes warmer, take seedlings outside at least part of the day. You can leave them outside all day as soon as danger of frost is past. Also, remove coverings from hotbeds or cold frames as the weather warms up.

When you transplant the onions, clip the tops back to about 3 inches to keep the plants from falling over and becoming crooked. Space seedlings at least 2 inches apart, and water them.

The garden soil

A good garden soil is deep, loose, fertile, well drained, slightly acid and has a lot of organic matter (decayed plant and animal material). Because most garden soils don’t meet all these requirements, good gardeners always try to improve their soil.

Garden soils range from almost pure sand to the more ideal sandy loams to silt loams and clays. Each soil type has both good and bad characteristics.

While sandy soils are easier to work, they are generally low in organic matter. This means they do not hold moisture and plant foods well. Adding organic material is the first step toward improving sandy soils.

Heavier soils, such as the silt loams and especially the clays, usually hold water well but are harder to manage. In fact, many of these soils have too much water due to poor drainage. They also warm up more slowly in the spring.

You can improve drainage in heavier, wetter soils by using raised beds. Adding organic matter to heavier soils also improves drainage by creating more space between soil particles. This makes the soil easier to handle. Fall tilling may also help.

To keep heavier soils in best condition, work them only when the soil is a bit dry. Working heavier soils when wet causes packing and forms clods. The age-old test of firming a small amount of soil in your hand is a good way to tell if a soil is dry enough to be worked. If the firmed soil does not crumble easily when gently pressed, it is too wet to work.



Supply organic matter to the soil

To yield good crops of high-quality vegetables, garden soils need lots of plant food. Humus (decayed plant material) supplies some of these plant foods. It also gives heavier, “hard-to-work” soils a looser texture and enables sandy soils to hold more water and plant nutrients.

Most garden soils are low in humus because they’ve been cultivated year after year. As humus is used up and not replaced, soils become hard, dry out easily, and produce poor crops.

To build up the humus supply in your garden soil, use partially rotted barnyard manure, composted cow manure (available in garden centers), compost or other organic materials, or green manure crops.

If manure is available, spread a 2- to 3-inch layer over the soil surface each year.

Compost consists primarily of decaying plant materials. You can make a compost pile by placing plant refuse—such as plants from the garden, hay, straw and leaves—in 12-inch layers with 1 inch of garden soil and 1 to 2 tablespoons of commercial fertilizer sprinkled between. Make a slight depression at the top of the pile so it stays moist. Mixing once or twice during the season hastens decay. Many commercial compost bins are available to hold the plant refuse.

Compost started in early summer will usually be ready to use by late fall. Spread and plow or spade it into the soil as you would barnyard manure.

Another way to supply organic matter to garden soil is to grow a green manure crop. For example, you can sow winter rye in your garden as you harvest vegetable crops in fall. This will add humus to the soil when turned under the following spring.

For a green manure crop, seed rye at the rate of 2 to 3 pounds per 1,000 square feet by mid-September. Add a moderate amount of a complete commercial fertilizer to the rye cover crop before tilling or spading it under in spring.

You can also leave part of your garden fallow each growing season and plant it with buckwheat after danger of frost. Use 1 pound per 1,000 square feet. Let the buckwheat grow for about 6 weeks and then till it under and plant again. In southern Wisconsin, you can usually get three plantings in a growing season. Buckwheat not only adds tremendous amounts of organic matter to the soil, but it also “smothers” or outcompetes most weeds, including perennial problems like quackgrass.

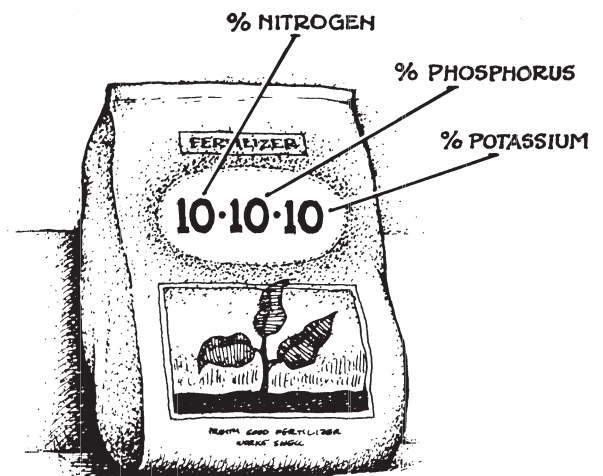
Fertilize the soil

Even if you add manure or other organic matter to the soil, you may need a complete commercial fertilizer to make sure your vegetable plants do not lack any essential nutrients.

For best results, add a commercial fertilizer mixture such as 6-6-18, 5-10-30, 5-20-20, or 6-24-24 at a rate of 1,000 to 1,500 pounds an acre (about 25 to 30 pounds per 1,000 square feet). The first number in the fertilizer mixture stands for the percentage of nitrogen, the second for phosphorus, and the third for potassium—three commonly needed soil elements.

If you don’t add organic matter to the soil, use a commercial fertilizer with more nitrogen—such as 10-10-10 or 12-12-12—at about the same rate.

A dependable soil test will tell how much fertilizer, lime, and organic matter your soil needs. Most vegetables grow best in a slightly acid soil (pH 6.0 to 6.5), so do not add lime unless a soil test indicates otherwise.



Apply fertilizers carefully

Manures, composts, and other organic matter may be spread and tilled or spaded into the soil in late fall or early spring. In the spring, you may also spread commercial fertilizer evenly over the garden and rototill or rake it into the soil.

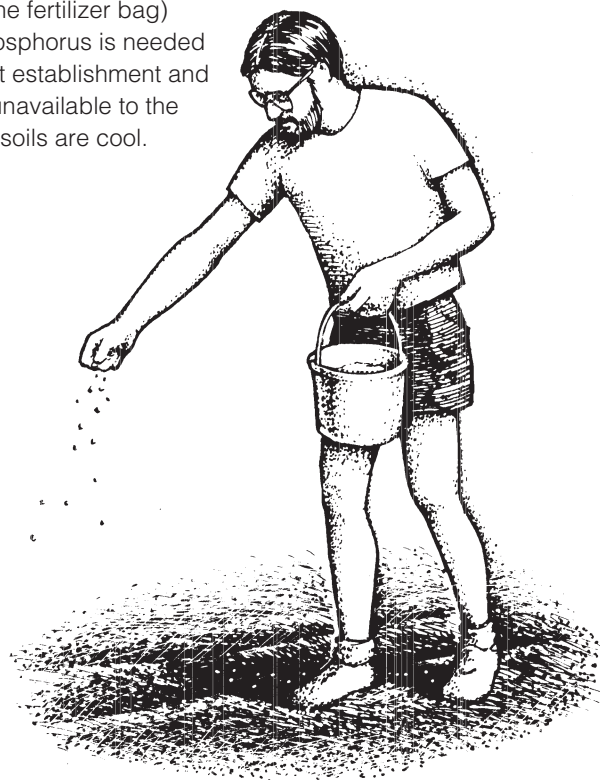
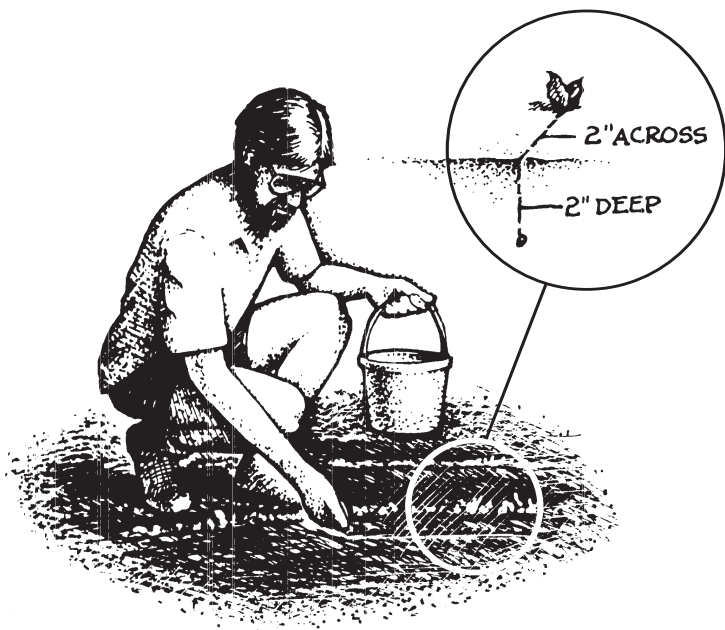
If you turn the soil in the spring, spread manure or other organic matter and about two-thirds of the commercial fertilizer over the soil and till or spade it into the soil together. Make sure you use only well-rotted manure or compost in the spring. Next, spread the remainder of the commercial fertilizer and rototill or rake it into the soil after plowing.

In most cases, it is more practical to spread, or broadcast, all fertilizers or organic matter used to improve a home garden. Side-dressing, or putting fertilizer along the row to the side of the plants, is used mainly to increase yields of leafy vegetables and fruiting vegetables like pepper, sweet corn, and tomato that use soil nutrients quickly. Side-dress these vegetables later in the season, especially on sandy and sandy loam soils.

If you apply commercial fertilizers at planting time, don't let the dry fertilizer touch seeds or plant roots. Put small amounts of fertilizer in bands beside the row—2 inches from the row and 2 inches deep—or around plants or hills. Or, dissolve fertilizer in water and add it as a liquid.

You can apply liquid fertilizers as starter solutions at planting time and also for side-dressing later in the season. Just dissolve 1 to 2 tablespoons of a complete, water-soluble commercial fertilizer—such as 8-32-16—in 1 gallon of water. Water each plant at transplanting time with about ½ pint of this liquid. Be sure the fertilizer is dissolved and the solution well mixed to avoid burning. A starter fertilizer is usually high in phosphorus (the middle number on the fertilizer bag) because phosphorus is needed for quick root establishment and is relatively unavailable to the plants when soils are cool.

Furrows or bands



Broadcasting



Prepare garden soil

Unless there is a chance for serious erosion, it's best to first plow or spade garden soil in the fall. Fall turning keeps the soil in good condition so it dries out and warms up earlier in spring. Fall turning also helps get rid of insects and diseases that overwinter in or on the soil.

Before planting, you need a fine, loose, level, weed-free seedbed. In farm gardens and many larger gardens that are plowed and prepared for planting with power tools, this is relatively easy. But if you don't use power tools, you can get the same result by preparing the garden soil with a spade or spading fork and a rake.

No matter how you prepare the soil, never work the soil when it is too wet. Be sure you completely incorporate manures or other refuse. You should also change the depth you plow or spade slightly each season to avoid forming a hardpan. Most garden soils produce well when worked to a depth of 6 to 8 inches, but this varies with the soil.

Good garden soils—especially the lighter soils and even heavy soils if well supplied with organic matter—need not be prepared completely each season. Deep, thorough preparation every second season is often enough.

In seasons when deep plowing or spading is not done, loosen the surface soil with a hoe, rake, or wheel hoe for easy seeding and transplanting. Follow with normal, shallow cultivation to keep the soil free of weeds and in good physical condition.

Garden tools and equipment

The right garden tools not only save time and work, but they make gardening easier and more enjoyable. You need only a few tools if you choose them carefully and use them in the right way and at the right time.

Choose tools carefully

Tools for preparing the soil

It is fairly easy to get a fine, loose, level seedbed with power tools. If you don't use power tools, prepare the soil with a spade or a spading fork and a rake. Use a spading fork for turning most soils. A long-handled spade works better for turning under sod or organic matter.

Tools for seeding

At seeding time you need a hoe, a rake, a garden line with a sharpened stick at each end, and a measuring tape or yardstick. Use the hoe to loosen soil, open trenches and cover seeds. A rake smooths the soil and covers seeds. A garden line drawn tightly just above the soil helps you set straight rows, and the measuring tape or yardstick enables you to properly space rows and plants.

Tools for setting plants

Most tools used in seeding can also be used to set plants. Use either a hoe or trowel to make holes and trenches for plants. A putty knife also comes in handy to separate and move plants growing in boxes or cold frames. Both the trowel and putty knife should be strong and fairly narrow.

Tools for killing weeds

Use a rake—one with straight teeth—to get rid of weed seeds that are just sprouting or tiny weeds. A wheel hoe—especially with a thin cutting blade—is an excellent weed control tool. It will help you clean out weeds quickly with little work. Wheel hoes with teeth are harder to push, don't kill weeds as well, and can damage crop roots if they cultivate deeply.

Tools for pest control

If you so choose, you can apply insecticides to your garden with a duster or sprayer. Dusting is simpler in most cases, but spraying often gives better results because it covers foliage better. You can also use barrier methods for crops with high insect pressure such as cabbage or broccoli. Floating row covers are one example. Probably the most effective preventative for insect control is a vigorous crop—one that has adequate fertility, proper plant spacing, and a well-drained soil.

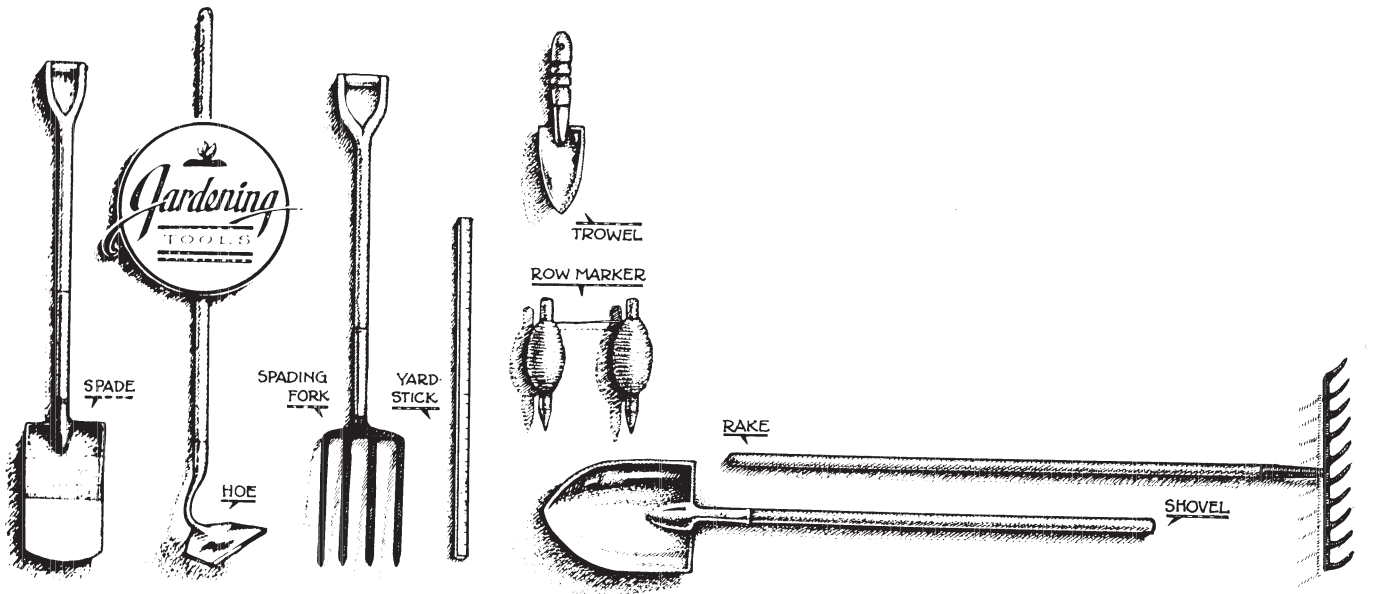
Take care of tools

Tools save you time and work, but only if you keep them in good condition. Clean tools each time you use them, and store them in a dry place.

A wooden scraper or putty knife removes soil from metal parts. You can also wash the soil off, if you dry metal parts thoroughly. If tools do get rusty, soak rusted parts in kerosene for a few hours and scour them with a wire brush or oiled rag dipped in fine sand.

Keep tool handles smooth by using fine sandpaper from time to time. Also keep hoe blades sharp.

Thoroughly clean garden tools before you store them in a dry place for the winter.





Planting the garden

The Planting Guide (page 20) gives approximate dates to begin planting vegetable gardens in southern Wisconsin. Gardeners living in central Wisconsin should generally plant about 1 week later than the date listed, and those in the north should plant about 10 to 14 days later.

Plant in warm, moist soil

The soil type, drainage, and the degree and direction of slope of your garden affect the actual outdoor seeding dates. Seeds need a warm, moist soil and plenty of air for quick sprouting. So you can begin planting sandy soils or other well-drained soils earlier than other soil types—especially those sloping to the south—because they generally dry out and warm up faster in spring.

Do not sow too deeply

Gardeners often plant vegetable seeds deeper and thicker than they should. If you use only good “live” seeds and plant them carefully, you will need fewer seeds and less thinning.

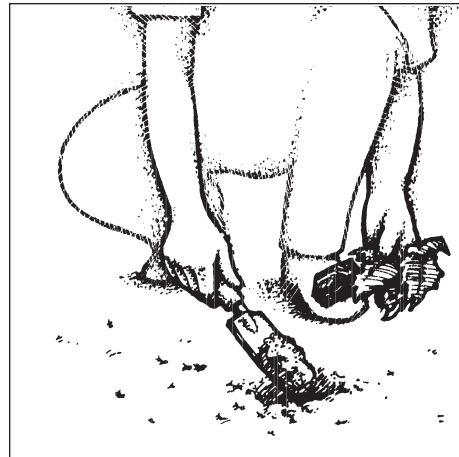
The Planting Guide tells how deep and how thick to plant seeds. You can sow seeds deeper in sandy soils than in heavier soils, and deeper in late spring when soil is warmer than in early spring when soil is cold.

Plant seeds in soil that is smooth, loose and free from clods and weeds. Freshly prepared soil will generally need only a light raking. Later in the season or in heavier soils, you may need a hoe, hand cultivator, or wheel hoe to loosen the soil before smoothing it with a rake.

Make seed trenches an even depth using the corner of a hoe blade or with the end of a hoe handle. Use the hoe blade when making deeper trenches for bean, onion sets or plants, pea, potato, and sweet corn. The end of the hoe handle works well for making shallow trenches for small seeds.

Setting plants with moist soil on roots

- Remove surface soil.
- Open the hole.
- Set the plant and firm moist soil snugly about the roots.
- Fill the hole with loose soil, leaving a slight hollow about the stem.



Mechanical seeders generally are not practical in small home gardens. Just drop large seeds from your fingers and plant small seeds right from the seed packet. Sometimes placing small seeds in a salt shaker with some rice will help you plant them more evenly.

Plant seeds evenly and use the back of a rake or hoe to cover the seeds with moist soil. Firm the soil tightly about the seeds with a rake while leaving the surface fairly loose.

Add water to seed trenches in dry soil

Sometimes the soil will be very dry when you seed—especially when beet, carrot, Chinese cabbage, turnip, and other vegetables are sown in July for fall harvest. To provide needed moisture for sprouting, fill the seed trench with water and let it soak into the soil before planting. Careful covering with fine

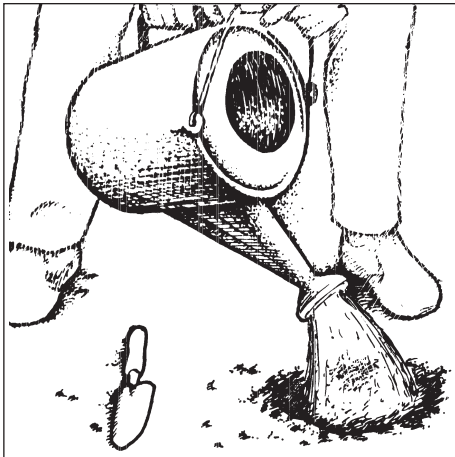
soil should bring fast sprouting. In addition, you can soak larger seeds—such as pea, pumpkin, squash, and sweet corn—in water for an hour or so before planting.

Cover rows seeded during dry weather with a mulch of lawn clippings, peat moss, compost, vermiculite, or perlite to hold moisture. You can also use paper or boards, but the covering must come off at the first sign of sprouting so seedlings get plenty of light.

Plant in rows

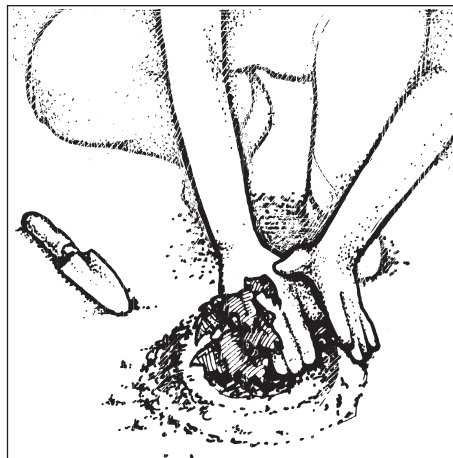
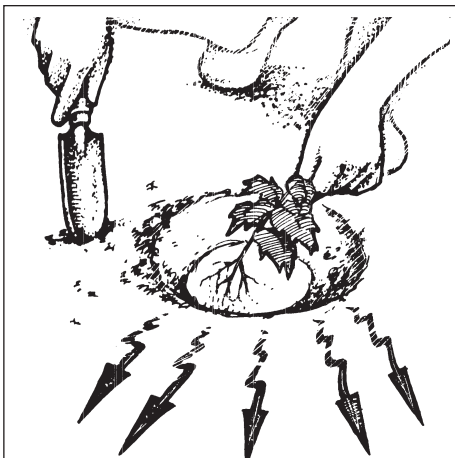
Vegetables such as vine crops are sometimes planted in hills instead of rows. However, in a well-kept garden, yields are best when seeds are planted in rows.

Planting vegetables in raised ridges or beds is a good idea when soil is heavy and has poor drainage.



Setting plants with little soil on roots

- Fill hole with water.
- Place plant in water.
- Allow the water to soak into the soil.
- Firm moist soil about the wet roots, then fill the hole with loose soil.





Set plants carefully

Because transplanting slows plant growth, the rate at which a healthy vegetable plant recovers and starts growing rapidly depends upon how carefully you set it out.

The Planting Guide gives dates to set early plants in southern Wisconsin. The guide also indicates how deep to plant. But remember that the kind of plant and the soil type, moisture, and temperature will make a difference.

The best times for transplanting are late afternoons or cloudy days to reduce wilting. You can also reduce wilting by taking off one or two lower leaves from cabbage, broccoli, cauliflower, head lettuce, eggplant, pepper, and tomato plants.

Begin by giving lots of water to plants an hour or more before transplanting time. This means you won't need to water as you set out the plants if the soil is relatively moist. Take plants carefully out of containers with a block of soil attached to the roots.

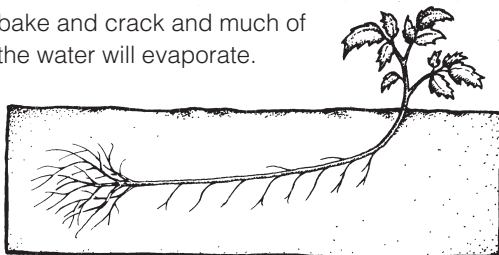
Roots must stay on all transplants. You can "trench in" tall tomato plants so the tops are only a few inches above the ground, but don't remove the tip of a plant or you'll delay fruiting.

As when seeding, a tight garden line just above the soil will help you set plants in straight rows. Make holes with a trowel or hoe in a deep, loose, freshly prepared soil.

For plants with moist soil on their roots—remove the surface soil from the spot where you will set the plant, open the hole, set the plant, firm moist soil snugly about the roots, and finish filling the hole with loose soil. Leave loose soil in a slight hollow around the stem.

You should water plants with little or no soil on their roots when you transplant them—especially if they have been pulled for some time. The best watering method is to fill the hole or trench with water, place the plant in the water, and allow the water to soak into the soil. Then, firm moist soil about the wet roots and finish filling the hole with loose soil.

Do not press soil firmly against plant stems. Also, do not water the surface after the plant is set, because the soil will often bake and crack and much of the water will evaporate.



When you set onion or celery seedlings, you can fill the trench with water and let it soak into the soil. Set the plants quickly by placing the seedlings against one side of the wet trench and press soil from the other side firmly against the roots with the back of a hoe or rake.

Thin plants early

Normally, you'll sow vegetable seeds thicker than needed to ensure an even stand. Therefore, you need to thin plants so they can grow fast and evenly. Most crops should be thinned soon after sprouting. One of the most common gardening mistakes is not thinning plants early so they are properly spaced.

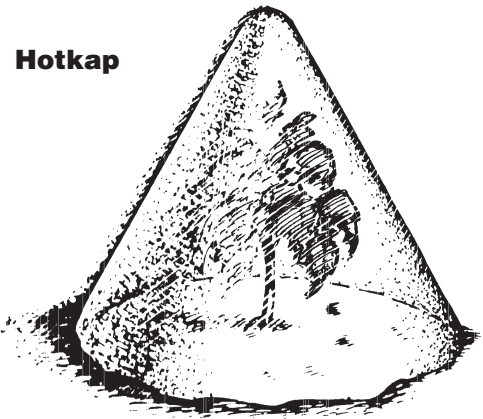
Thin all crops soon after sprouting or as soon as the first true leaves appear. You can delay thinning beets for greens, chard, leaf lettuce, mustard, onions from sets, spinach, and turnips for greens, because you'll eat the plants you take out.

Early thinning is especially important with beets for roots, carrots, Chinese cabbage, endive, head lettuce from seed, onions from seed, leek from seed, parsnips, radishes, rutabagas, salsify, and turnips for roots. The Planting Guide tells how far different crops should be spaced after thinning.

Remove plant protectors when seedlings are ready

There are several products on the market that you can use to protect transplants or fragile seedlings from frost. These include hotkaps, clear plastic tunnels, various types of "floating" row covers, and water-filled teepees.

Hotkaps are small "tents" placed over individual plants. They are made of wax paper or clear or frosted plastic.



Hotkap

The tunnels are made of clear plastic that may be solid, slitted, or perforated. Wires or hoops are needed to support the plastic. Many of the tunnels and row covers can be hinged with PVC pipe for easy access.

Floating row covers are various types of white, porous materials that are laid over the crops and anchored with soil to prevent them from blowing away. No hoops are needed. As the plants grow, they push up the covers. These also make effective barriers against insect and animal pests.

Wall O'Water is a water-filled teepee which protects plants from cold by night and shields them from excess heat by day.

Hotkaps need to be removed or opened at the top as soon as seedlings need more light and ventilation, and the danger of frost is past. However, you can leave plastic tunnels and floating row covers over plants for up to 6 weeks. Be sure to closely watch heat buildup under plastic tunnels, especially if they are not slitted or perforated. You may need to open them during the day and close them at night. All row covers need to be removed at flowering for insect-pollinated crops.

Cut-out milk cartons can also be used to cover plants at night, but you must remove them every day.

Garden care

Help your garden hold rain water

Helping your garden hold rain water is often a better and cheaper plan than watering it. During most seasons there is enough rain, but it does not always come at the right time. However, you can take some steps to hold rain water in the soil where plants can get it:

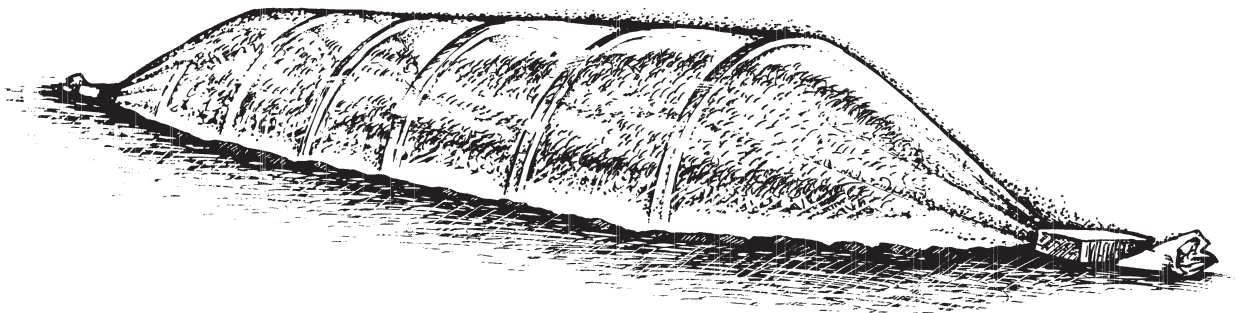
- Keep a good supply of organic matter (well-rotted manure or compost) in the soil—this will hold water.
- Keep down the weeds—stop them before they start or they'll use water that should go to your vegetable plants.
- Thin out crop plants that aren't needed—they will use water, too.
- Apply mulch appropriately.

If you water your vegetable garden, remember that a heavy even watering now and then is better than many light waterings. Use a hose and a good quality lawn sprinkler and water early in the day. You can use a soaker hose under plastic or organic mulches.

Floating row cover



Plant tunnel





Controlling insects

Clean up all garden plants in fall to help control garden insects. If insecticides are needed, use a good duster or sprayer and follow label directions carefully.

Check Extension publication *Managing Insects in the Home Vegetable Garden* (A2088), available from your county Extension office. This publication advises how and when to dust or spray plants. It also suggests ways to control insects using organic or cultural practices and explains the insect life cycle. With a greater understanding of how the insect lives, you will be better equipped to control it.

Many cultural techniques such as use of row covers, aluminum foil mulch, beneficial insects, and color attractants can significantly decrease pest pressures. You should also remember that certain crops will have more insect pressures than others.

Controlling plant diseases

You can prevent plant diseases from occurring as well as control diseases that do occur if you remove diseased refuse and spray or dust susceptible plants. Use resistant cultivars whenever possible to avoid diseases. Remember, too, that a vigorous, well-cared-for crop is better able to withstand disease and insect pressures than is a neglected one. Space your plants so that air can freely circulate and never water the foliage in the evening.

You should always get rid of diseased garden refuse—such as plant stalks, leaves, and roots—to prevent disease from spreading. Bury, burn, or put refuse in the trash for pickup.

Tomato plants can be susceptible to certain diseases, so give them special care. Late blight on tomato can cause serious damage, especially during cool, wet seasons and may need to be treated weekly with an appropriate fungicide. Begin treatment when the first tomato fruits are about the size of walnuts. Fungicides may also help prevent losses due to tomato leaf diseases such as septoria, anthracnose, and early blight. Check fungicide labels carefully before application.

Blight and other leaf diseases can often be adequately controlled by removal of the diseased leaves and maintenance of good air circulation around the plants. For more information, see Extension publications *Tomato Disorder: Early Blight and Septoria Leaf Spot* (A2606) and *Home-Grown Tomatoes for Wisconsin* (A1691).

Blossom-end rot is another disorder that plagues tomato plants. Deep cultivation can injure tomato plant roots and contribute to this problem. Blossom-end rot appears because there is a calcium deficiency in the plant when the fruit is being formed. Since a tomato plant gets calcium by taking in water, it's important that there is a constant water supply during the plant's first 6 weeks of growth. Usually you do not need to add calcium to the soil.

Cabbage yellows disease stays a long time in garden soil. Most cabbage varieties are now bred for resistance to this disease.

Controlling weeds

Easy, effective weed control depends mainly on timing. Weeds are easiest to control just as their seeds are germinating—before the young seedlings are established. At this stage, a careful stirring of the top inch or so of soil will make it dry out rapidly and generally control weeds. If you do this each week and as soon as the soil dries after each rain, weeds should not be a serious problem.

Once weeds get a foothold, controlling them means hard work. But if you just let the weeds grow, they crowd and shade vegetables, robbing them of water and nutrients. Thus, the most effective weeding is shallow, thorough, and timely.

Late in the season when you cultivate less frequently, it is especially important to keep weeds from seeding in or around the garden edges. Once weeds go to seed, you're fighting an uphill battle.

Avoid using chemicals

Chemicals that commercial vegetable growers use to control weeds are generally not practical for the home garden since a variety of crops are grown. However, if you do use chemicals in the garden, apply them carefully, using a separate sprayer for that purpose. Do not spray when the wind might blow the chemical on vegetable crops or other sensitive plants.

Dacthal and Preen are preemergence herbicides that you can use around most garden crops. Check label directions.



Mulch to check weeds

Mulching garden soil with straw, hay, lawn clippings, or other material is a good way to check weeds. Cover all the soil with at least 2 inches of mulch and put the mulch close to plants. Be sure the mulch is reasonably free of weed seeds, especially perennial weeds like quackgrass.

If you use an organic mulch, the soil should be warmed up enough for good plant growth. Usually this means applying the mulch around the end of June.

Mulching is especially beneficial around tomatoes. It helps keep the fruit clean by keeping it off the ground. Mulching also helps check blossom-end rot by holding a higher and more even supply of moisture in the soil.

Instead of using an organic mulch, you can cover the soil with black or clear plastic sheets. Synthetic mulches tend to keep the soil warmer than organic mulches. Thus, they work especially well on heat-loving crops such as cucumber, melon, squash, and tomato. Just make sure the soil is not too dry or too wet—since many synthetic mulches don't allow much water to penetrate or evaporate. A soaker hose or t-tape placed under plastic mulch can be a good idea.

Clear plastic keeps the soil temperature warmer than any other type of mulch. This can make it especially effective in gardens in the northern part of the state. However, weeds often grow underneath clear plastic, so it is most effective only during the first 6 weeks of plant growth.

Organic gardening

The popular definition of organic gardening is growing foods naturally—without synthetic fertilizers, pesticides or herbicides.

Instead of synthetic fertilizers, you apply manures, crop residues, composts, or green manure crops. You use only natural mineral fertilizers from naturally occurring deposits to supply supplementary minerals to the soil. Resistant cultivars, cultural practices, or naturally occurring pesticides produced from plants are what you use to control diseases, insects, and weeds. And, use mulching or other cultural practices to control weeds.

Organic matter improves soils for plant growth in many ways. When organic matter is completely decomposed, it provides many mineral elements plants need. However, additional mineral elements may be needed for more balanced plant growth and higher yields, especially on sandy soils, peat and muck soils, and mineral soils that have been cropped for long periods.

Research shows that mineral elements used by plants enter the plant through the roots in water solution. Thus, regardless of their original condition or origin—natural or synthetic, organic or mineral—elements taken from the soil must be in or reduced to a water-soluble form before they can the plant can use them to manufacture food.

Unfortunately, there are only a few crops with genetic resistance to plant diseases and nematodes. Crops resistant to insects are even rarer.

Genetic resistance in a plant is often due to special chemicals they contain. Thus, these naturally occurring chemicals are “organic.” But there is no scientific evidence indicating that a plant or an animal reacts any differently to a naturally occurring chemical than it does to the same chemical synthesized in a laboratory. Likewise, there is no evidence indicating that the nutritional value of foods grown using synthetic fertilizers is any different from foods grown using organic fertilizers. However, organic fertilizers and mulches do have many environmental advantages that should not be overlooked such as reducing soil erosion and improving soil tilth.

Use gardening techniques that work for you

The best approach to home gardening is to combine the traditional techniques and organic gardening techniques that work best for you. Usually this means adding organic matter and some synthetic fertilizer to the soil, choosing disease-resistant cultivars, planting crops at the right times to avoid insect outbreaks, using cultural controls when possible, and using pesticides only when necessary.



Planting guide



| Vegetable | Planting time ^a | | Seeds or plants | | Spacing | | Days to first harvest ^c | Estimated yield per foot of row (pounds) ^d |
|-------------------|----------------------------|---------------------|---------------------|---------------------|-----------------------|-------------------------|------------------------------------|---|
| | Indoors at Madison | Outdoors at Madison | For 100 feet of row | Seed depth (inches) | Between rows (inches) | Between plants (inches) | | |
| Asparagus | | April 15 | 50 crowns | 6–8 ^b | 36–40 | 18–24 | 1–2 years | 1 |
| Bean, bush lima | | May 25 | 8 oz | 1 | 24–30 | 3–4 | 70–80 | 1/3 |
| Bean, bush snap | | May 10 | 8 oz | 1 | 18–24 | 2–3 | 50–60 | 1/2 |
| Bean, pole snap | | May 10 | 6 oz | 1 | 30–36 | 3–4 | 60–65 | 2/3 |
| Beet | | April 15 | 1–1 1/4 oz | 1/2 | 15–18 | 2–3 | 50–60 | 1/2–1 1/2 |
| Broccoli | March 15 | May 1 (plants) | 40–50 plants | | 24–36 | 18–24 | 60–70 | 3/4 |
| Brussels sprouts | | May 15 (seeds) | 1/8 oz | 1/2 | 24–30 | 12–18 | 90–100 | 1 |
| Cabbage, early | March 15 | May 1 (plants) | 50–70 plants | | 18–24 | 12–18 | 60–70 | 2 |
| Cabbage, late | | May 15 (seeds) | 1/8 oz | 1/2 | 24–30 | 18–24 | 90–100 | 2 1/2 |
| Carrot | | April 15 | 1/4 oz | 1/4 | 15–18 | 1–2 | 60–70 | 1–1 1/2 |
| Cauliflower | March 15 | May 1 (plants) | 50–70 plants | | 24–30 | 12–18 | 50–60 | 3/4 |
| Celeriac | March 15 | May 20 (plants) | 200–300 plants | 1/8 | 24–36 | 4–6 | 110 | 1 |
| Celery | March 15 | May 20 (plants) | 200 plants | 1/8 | 30–36 | 4–6 | 100–110 | 2 |
| Chard | | April 15 | 1–1 1/4 oz | 1/2 | 15–18 | 3–4 | 40–50 | 2 |
| Chinese cabbage | | June 20 (seeds) | 1/8 oz | 1/2 | 24–30 | 10–12 | 90–100 | 3 |
| Collards | | June 20 (seeds) | 1/3 oz | 1/2 | 24–36 | 12–24 | 60–85 | 2 |
| Corn | | May 10 | 4 oz | 1–1 1/2 | 30–36 | 8–10 | 65–90 | 1 1/2 |
| Cucumber | | May 27 (seeds) | 1/3 oz | 1–1 1/2 | 36–40 | 4–8 | 45–55 | 1–1 1/4 |
| Eggplant | March 15 | June 1 (plants) | 50–60 plants | | 30–36 | 18–24 | 70–80 | 1 3/4 |
| Endive | | June 25 | 1 oz | 1/4–1/2 | 18–24 | 8–10 | 90 | 1/2 |
| Kale | | June 25 | 1/3 oz | 1/2 | 24–30 | 8–10 | 50–70 | 3/4 |
| Kohlrabi | | April 15 | 8 oz | 3/4 | 15–18 | 3–4 | 50–60 | 1 1/2 |
| Lettuce, head | March 15 | May 1 (plants) | 100 plants | | 15–18 | 8–10 | 60–70 | 1/2 |
| Lettuce, leaf | | April 15 | 1/4 oz | 1/4 | 15–18 | 2–3 | 40–50 | 1/4 |
| Muskmelon | May 1 | May 20 (plants) | 34–50 plants | | 36–40 | 24–36 | 80–90 | 2 |
| Mustard | | April 15 | 1/3 oz | 1/4 | 18–24 | 2–3 | 40 | 1/2 |
| Okra | April 15 | June 1 (plants) | 50–75 plants | | 42–60 | 8–24 | 50–60 | 2/3 |
| Onion | Feb. 15 | May 1 (plants) | 300–400 | | 15–18 | 3–4 | 110–120 | 2 |
| Onion, sets | | April 15 | 3–4 lb | 2 | 15–18 | 1–2 | 40–50 | 1 |
| Parsley | March 1 | May 1 (plants) | 100 plants | | 18–24 | 6–8 | 30–40 | 1/4 |
| Parsnip | | April 15 | 1/2 oz | 1/2–3/4 | 24–30 | 2–3 | 100–120 | 1 1/2 |
| Pea | | April 15 | 1 lb | 1 | 15–18 | 1–2 | 60–70 | 1/4–1/2 |
| Pepper | April 1 | June 1 (plants) | 50–60 plants | | 30–36 | 18–24 | 60–70 | 2 |
| Potato, early | | April 15 | 9 lb | 3–4 | 30–36 | 12 | 80–100 | 2 |
| Potato, midseason | | April 15 | 9 lb | 3–4 | 30–36 | 12 | 100–130 | 2 |
| Potato, late | | April 15 | 9 lb | 3–4 | 36–42 | 12 | 130–140 | 2 |
| Pumpkin | May 1 | May 20 (plants) | 34–50 plants | | 48–60 | 24–36 | 90–110 | 2 |
| Pumpkin | | May 10 (seeds) | 1/2 oz | 1–1 1/2 | 48–60 | 24–36 | 90–110 | 2 |
| Radish | | April 15 | 1 oz | 1/2–3/4 | 15–18 | 1–2 | 25–30 | 1/2 |
| Rhubarb | | April 15 | 35 crowns | 3–4 | 48–54 | 36 | 1 year | 2 |
| Rutabaga | | June 15 | 1/8 oz | 3/4 | 24–30 | 6–8 | 100–110 | 3 |
| Salsify | | April 15 | 1/2 oz | 1/2 | 18 | 2–3 | 120 | 3/4 |
| Spinach | | April 15 | 1 oz | 1/2–3/4 | 15–18 | 1–2 | 40–50 | 1 |
| Squash, summer | | May 20 | 1/2 oz | 1–1 1/2 | 48–60 | 24–36 | 50–60 | 2 |
| Squash, fall | May 1 | May 20 (plants) | 34–50 plants | 1–1 1/2 | 72–84 | 24–36 | 90–120 | 2 |
| Tomato | April 15 | May 20 (plants) | 34–60 plants | | 36–42 | 18–36 | 65–80 | 2–4 |
| Turnip | | April 15 | 1/4 oz | 1/2–3/4 | 18–24 | 2–3 | 60–70 | 2 |
| Watermelon | | May 20 | 1/2 oz | 1 | 96 | 96 | 75–90 | 2 |

^aPlant about 1 week later along the lower lake shore and in the central part of state and about 2 weeks later in northern counties.

^bTwo inches of soil covering at planting. Gradually fill trench 6–8 inches with soil as plants grow.

^cCultivars vary greatly in time needed to reach harvest stage; extend the harvest season by planting cultivars of different maturity dates or by making successive plantings of the same cultivar.

^dEstimated yields under less-than-ideal growing conditions; actual yields will vary widely with weather, soil fertility and cultural practices.



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