



Texas Home Gardening Guide:

Home gardening continues to grow in popularity. One of every three families does some type of home gardening, according to conservative estimates, with a majority of gardens located in urban areas. Texas gardeners can produce tasty, nutritious vegetables year-round. To be a successful gardener requires following a few basic rules and making practical decisions.

Garden Site:

Although many urban gardeners have little choice, selecting a garden site is extremely important. An area exposed to full or near-full sunlight, with deep, well-drained, fertile soil is ideal. The location should be near a water outlet and free of competition from existing shrubs or trees. By modifying certain cultural practices and crop selections, almost any site can become a highly productive garden.

Crop Selections:

As a home gardener, one of your first major decisions is deciding what vegetables to grow. Table 1 lists crops suitable for small and large gardens. Raise vegetables which return a good portion of nutritious food for the time and space required. Vine crops such as watermelons, cantaloupes, winter squash and cucumbers require large amounts of space. Locating the garden near a fence or trellis may allow for growing vine crops in less space. Plant according to family needs and resist over planting any particular vegetable, although surpluses may be preserved.

Table 1. Home Garden Vegetables			
Small Garden Vegetables		Large Garden Vegetables	
Beets	Green beans	Cantaloupes	Potatoes
Broccoli	Lettuce	Cauliflower	Pumpkins
Bush squash	Onions	Collards	Southern peas
Cabbage	Parsley	Cucumbers	Sweet corn
Carrots	Peppers	Mustard	Sweet potatoes
Eggplant	Radishes	Okra	Watermelon
English peas	Spinach		
Garlic	Tomatoes		

Proper variety selection is an important key to successful gardening. The wrong variety may not produce satisfactory yields regardless of subsequent care and attention. Contact your local county Extension agent for varieties which are well adapted to your area of Texas. Try new varieties and hybrids, but limit plantings.

If your garden is not in an area receiving full or near-full sunlight, try leafy crops such as leaf lettuce, mustard, and parsley. Table 2 indicates vegetable crops which do well in full sunlight and those that tolerate partial shade.

Table 2. Light Requirements of Common Plants		
Require Bright Sunlight		
Beans Broccoli Cantaloupes Cauliflower Cucumbers	Eggplant Okra Onions Peas Peppers	Potatoes Pumpkin Squash Tomatoes Watermelons
Tolerate Partial Shade		
Beets Brussels sprouts Cabbage Carrots	Collards Kale Lettuce Mustard	Parsley Radish Spinach Turnips

Garden Plan::

A gardener needs a plan just as an architect does. Careful planning lessens gardening work and increases returns on labor.

Long-term crops require a long growing period. Plant them where they won't interfere with care and harvesting of short-term crops. Plant tall-growing crops where they will not shade or interfere with growth of smaller crops. Plant vegetables such as okra, staked tomatoes, pole beans, and sweet corn on the garden's north side to avoid shading lower-growing crops such as radishes, leaf lettuce, onions, and bush beans. Group crops according to the rate of maturity. Table 3 indicates the relative maturity rate of various vegetable crops. By grouping vegetables according to maturity rate, one crop can be planted to take the place of another as soon as it is removed. Try to plant crops totally unrelated to the previous crop. For example, follow early beans with beets, bush squash, or bell peppers. Crop rotation helps prevent diseases and insect buildups.

Table 3. Maturity Rate		
Quick (30-60 Days)		
Beets Bush Beans Leaf lettuce	Mustard Radishes Spinach	Summer squash Turnips Turnip greens
Moderate (60-80 Days)		
Broccoli Cabbage, Chinese Carrots Cucumbers	Green onions Kohlrabi Lima beans, bush Okra	Parsley Peppers Tomatoes, cherry
Slow (80 Days or More)		
Brussels sprouts Bulb onions Cabbage Cantaloupes	Cauliflower Eggplant Garlic Irish potatoes	Pumpkins Sweet potatoes Tomatoes Watermelon

When to Plant:

Consult the table on pages 6 and 7 for information regarding recommended spring and fall planting times for home vegetable gardens in your area. Usually home gardens can be planted 10 days to 2 weeks earlier than commercial fields because of the protection offered by existing buildings, trees, and shrubs. Proper planting time is important if maximum quality and production are expected. Figures 1 and 2 (inside back cover) indicate average dates for first and last freeze (32 degrees F.) for Texas and can be used with the center table to determine optimum planting dates.

Soil Preparation:

Many garden sites do not have deep, well-drained, fertile soil which is ideal for vegetable growing. Thus, soils must be altered to provide good drainage and aeration. If the soil is a heavy clay, the addition of organic matter or sand may be highly advantageous.

Apply 1 to 2 inches of good sand and 2 to 3 inches of organic matter to the garden site surface and turn under in late winter or early spring to improve the soil's physical quality. Work on the soil's physical condition over a period of time rather than trying to develop desirable soil in a season or two. Make periodic additions of organic matter in the form of composted materials, peanut hulls, rice hulls, grass clippings, or other organic matter. Turn the soil to a depth of 8 to 10 inches -- the deeper the better. Gypsum improves soil structure and drainage. Add gypsum at the rate of 6 to 8 pounds per 100 square feet where the soil is a tight, heavy clay.

When adding organic matter or sand to the garden site, take care to avoid introducing soil pests such as nematodes. The Texas Agricultural Extension Service provides a laboratory service to determine whether nematodes are present in soils. Contact your county Extension agent for additional information.

Never work wet garden soil. Soils containing a high degree of organic matter can be worked at a higher moisture content than heavy clay soils. To determine if the soil is suitable for working, squeeze together a small handful of soil. If it sticks together in a ball and does not readily crumble under slight pressure by the thumb and finger, it is too wet for working.

Seeds germinate more readily in well-prepared soil than in coarse, lumpy soil. Thorough preparation greatly

reduces the work of planting and caring for the crop. It is possible, however, to overdo preparation of some soils. An ideal soil for planting is granular, not powdery fine.

Fertilization:

Proper fertilization is another important key to successful vegetable gardening. The amount of fertilizer needed depends upon soil type and crops. Texas soils vary from deep blow sands to fertile, well-drained soils to heavy, dark clays underlaid by layers of caliche rock. Crops grown on sandy soils usually respond to liberal amounts of potassium, whereas crops grown on clay soils do not.

Heavy clay soils can be fertilized considerably heavier at planting than can sandy soils. Heavy clay soils and those high in organic matter can safely absorb and store fertilizer at three to four times the rate of sandy soils. Poor thin, sandy soils, which need fertilizer the most, unfortunately cannot be fed as heavily and still maintain plant safety. The solution is to feed poor thin soils more often in lighter doses. For accurate recommendations regarding fertilizer rates, contact your county Extension agent and request a soil test kit.

In general, if your garden is located on deep, sandy soil, apply a complete preplant fertilizer such as 5-10-10 or 6-12-12 at the rate of 1 to 2 pounds per 100 square feet. If your garden consists of a soil type with a high percentage of clay, a fertilizer such as 10-20-10 or 12-24-12 at 1 to 2 pounds per 100 square feet should be suitable.

After determining the proper amount of fertilizer for a preplant application, apply the fertilizer a few days before planting. Spade the garden plot, spread the fertilizer by hand or with a fertilizer distributor and then work the soil one or two times to properly mix the fertilizer with the soil. After the fertilizer is well mixed with the soil, bed the garden in preparation for planting. On alkaline soils, apply 1-20-0 (superphosphate) directly beneath the intended seed row or plant row before planting. Apply the superphosphate 2 to 4 inches beneath the seed or roots of the plant at the rate of 1 to 1-2 pounds per 100 linear feet of row. Take care to avoid banding nitrogen material directly beneath the row. Death of the seed or severe burning of the plants could result. Apply additional nitrogen as a furrow or sidedress application later in the season. For most soils, 2 to : pound of 21-0-0 (ammonium sulfate) per 100 linear feet of row, applied in the furrow and watered in, is adequate. Apply at first fruit set for crops such as tomatoes, peppers, and squash. Sidedress leafy crops such as cabbage and lettuce when they develop several sets of character leaves.

Planting:

Plant your garden as early as possible in the spring and fall so the vegetables will grow and mature during ideal conditions.

Transplanting vegetable crops wherever possible allows earlier harvesting and extends the productive period of many vegetable crops. Where transplanting is not practical or convenient, seed directly. A general rule of thumb for planting is to cover the seed 2 to 3 times its widest measurement. This is especially true for big-seeded crops such as green beans, sweet corn, cucumbers, cantaloupes, and watermelons. For smaller-seeded crops such as carrots, lettuce, or onions, an average planting depth of 2 to 3 inch usually is adequate. Seed the plants fairly thick with the intention of thinning to an optimum stand at a later date. Avoid allowing the soil to over-dry or crust during germination, but do not over water. Table 4 indicates the number of days from planting to expected emergence when properly planted.

Beans	5-10 days	Onion	7-10 days
Beets	7-10 days	Peas	6-10 days
Broccoli	5-10 days	Parsley	15-21 days
Cabbage	5-10 days	Pepper	9-14 days
Carrots	12-18 days	Radish	3-6 days
Cauliflower	5-10 days	Spinach	7-12 days
Corn	5-8 days	Squash	4-6 days
Cucumber	6-10 days	Tomato	6-12 days
Eggplant	6-10 days	Turnip	4-8 days
Lettuce	6-8 days	Watermelon	6-8 days
Okra	7-10 days		

Avoid transplanting too deep or too shallow, especially if plants are in containers such as peat pots. Deep planting often causes developed roots to abort, and planting too shallow exposes containers to the surface and causes root death from excessive drying. Some crops are easily transplanted bare-root while others are best transplanted in containers, as indicated in Table 5. When transplanting plants such as tomatoes or peppers, use a starter solution. Starter solutions may be purchased at local nurseries or can be made at home by mixing 3 to 2 cup of fertilizer such as 10-20-10 in 5 gallons of water. Use the lower rate on light, sandy soils. Apply 2 to 1 pint of starter solution, depending upon plant size, into each transplant hole before planting. This prevents the plants from drying out and provides adequate sources of fertility for young, growing plants.

Table 5. Ease of Transplanting		
Easily Transplanted		
Beets Broccoli Cabbage	Cauliflower Chard Lettuce	Onion Tomatoes
Require Care		
Carrots Celery	Eggplant Okra	Pepper Spinach
Very Difficult Without Using Containers		
Beans Cantaloupe Corn	Cucumber Peas Squash	Turnip Watermelon

Watering:

Apply enough water to penetrate the soil to a depth of at least 6 inches. For best production, most gardens require a moisture supply equivalent to 1 inch of rain a week during the growing season. Light sandy soils generally require more frequent watering than heavier dark soils. If sprinklers are used, water in the morning to allow plant foliage to dry before night. This practice helps prevent foliage diseases, since humidity and cool temperatures encourage disease development on most vegetable crops.

The use of drip irrigation to supply water is also beneficial in this regard. Additionally, this system of irrigation is the most water-use efficient available and is ideally suited for use with mulches.

Weed Control

A long-handled hoe is the best tool for control of undesirable plants in vegetable gardens. Chemical weed control usually is undesirable and unsatisfactory because of the selective nature of weed control chemicals. The wide variety of vegetable crops normally planted in a small area prohibits use of such chemicals. Cultivate and hoe shallowly to avoid injury to vegetable roots lying near the soil surface. Control weeds in the seedling stage to prevent them from seeding and re-inoculating the garden area. The use of mulch is also an effective means of weed control.

Mulching:

Mulching will increase yields, conserve moisture, prevent weed growth, regulate soil temperature, and lessen losses caused by ground rot of many vegetable crops. Organic mulches can be made of straw, leaves, grass, bark, compost, sawdust, or peat moss. Organic mulches incorporated into the soil will improve the soil tilth, aeration, and drainage. The amount of organic mulch to use depends upon the type, but 1 to 2 inches of organic material applied to the garden surface around growing plants is adequate.

In turning organic mulches under for subsequent crops, add additional fertilizer at the rate of about 1 pound per 100 square feet to help soil organisms break down the additional organic matter.

Pest Control:

Diseases and insects cause great concern among Texas gardeners. Long growing seasons with relatively mild winters encourage large insect populations. Avoid spraying when possible, but use recommended and approved chemicals if the need warrants. Exercise care when deciding which chemicals to apply. Spray only those crops which are listed on the chemical's container. When used according to manufacturer's directions and label, chemicals pose no threat to the home gardener.

Disease control is really a preventive rather than an eradication procedure. Cool, damp conditions are conducive to foliage diseases. Carefully watch your garden for symptoms of diseases. Spray accordingly, using only approved fungicides. Publications on disease and insect identification and control are available from your local Extension office.

Harvesting:

For the greatest enjoyment of your home vegetable garden, harvest vegetables when they are mature. A vegetable's full flavor develops only at peak maturity, resulting in the excellent taste of vine-ripened tomatoes, tender green beans, and crisp, flavorful lettuce. For maximum flavor and nutritional content, harvest the crop the day it is to be canned, frozen, or eaten.

Common Garden Problems

Symptoms	Possible Causes	Corrective Measures
Plants stunted in growth; sickly, yellow color	Lack of soil fertility or soil pH abnormal	Use fertilizer and correct pH according to soil test. Use 2 to 3 pounds of complete fertilizer per 100 square feet in absence of soil test
	Plants growing in compacted, poorly-drained soil	Modify soil with organic matter or coarse sand.
	Insect or disease damage	Use a regular spray or dust program.
	Iron deficiency	Apply iron to soil or foliage.
Plants stunted in growth; sickly, purplish color	Low temperature	Plant at proper time. Don't use light-colored mulch too early in the season.
	Low available phosphate	Apply sufficient phosphate at planting.
Holes in leaves; leaves yellowish and dropping, or distorted in shape	Damage by insects	Use recommended insecticides at regular intervals.
Plant leaves with spots; dead, dried areas; or powdery or rusty areas	Plant disease	Use resistant varieties, remove diseased plants when they are noticed and use a regular spray program.
Plants wilt even though sufficient water is present	Soluble salts too high or root system damage	Have soil tested by county Extension agent. Use soil insecticides, fungicides, and resistant varieties.
	Poor drainage and aeration	Use organic matter or sand in soil.
	Insect or nematode damages	Use recommended varieties and soil insecticides or nematocides.
Plants tall, spindly, and unproductive	Excessive shade	Relocate to sunny area. Keep down weeds.
	Excessive nitrogen	Reduce applications of nitrogen
Blossom drop (tomatoes)	Hot dry periods	Use mulch and water. Plant heat tolerant varieties.
	Minor element deficiencies	Use fertilizer containing zinc, iron, and manganese.

Failure to set fruit (vine crops)	Poor pollination	Avoid spraying when bees are present.
Leathery, dry, brown blemish on the blossom end of tomatoes, peppers, and watermelons	Blossom end rot	Maintain a uniform soil moisture supply. Avoid over-watering and excessive nitrogen.

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| [Average Date of Last Spring Frost](#) | [Average Date of First Fall Frost](#) |