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# EASY GARDENING...SOIL PREPARATION

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The soil is a storehouse for nutrients, organic matter, air and water plants need to grow. Soil also supports plants by providing a place to grow.

Properly prepared and cared for soil can be improved each year and will continue to grow plants forever. Uncared for soil will soon become suited only for growing weeds.

## Soil Types

Texas gardeners must work with many different soils. Some are very sandy. Some are sticky clay and others are rocky and shallow.

Sandy soils do not hold enough water; in windy areas blowing sand can injure vegetables. Clay soils hold too much water and do not allow enough air to enter the soil.

Vegetables need a deep and well-drained soil with adequate organic matter. Good garden soil with proper moisture will not form a hard ball when squeezed in the hand. It also should crumble easily when forced between the fingers. It should not crack or crust over when dry. See figure 1.

**Figure 1**

## Soil Improvement

Almost all garden soils can be improved. Soil additives are materials added to soil to improve its production. They are added to build up soil organic matter or to make soil more workable. Organic matter:

- Loosens tight clay
- Helps sand hold more water
- Makes soil easier to dig
- Adds some nutrients

Some common organic matter additives are:

*Plant materials* – leaves, straw, grass clippings. Work into the soil several months prior to planting. Most gardeners add them during the winter.

*Manure* – add dry well ahead of planting. Fresh manure can damage plants. About 30-40 pounds of dry manure per 100 square feet usually is enough.

*Compost* – made of decayed plant materials. Work into the soil prior to planting.

*Sawdust* – compost before adding to the garden.

*Green manure* – rye or oats. Plant in the fall and plow or spade under in the spring. These cannot be used if a fall garden is planted.

Do not add more than a 3-inch layer of organic material.

Most heavy clay soils benefit from the soil additive, gypsum. It adds some nutrients and helps make clay soil more workable. Spread about 3-4 pounds of gypsum per 100 square feet over garden soil after it has been dug in the winter. Work it into the soil or allow to wash in by rainfall.

Add sand to clay soil to make it more workable. Add organic material with the sand. Mix 2 inches of clean sand and 3 inches of organic material, such as leaves, with the soil. Do this during the winter.

## Tilling Soil

The soil should be tilled as deeply as possible, at least 8-10 inches. Deep tilling loosens soil and lets vegetable roots go deeper. Turn each shovelful of soil completely over. See figure 2.

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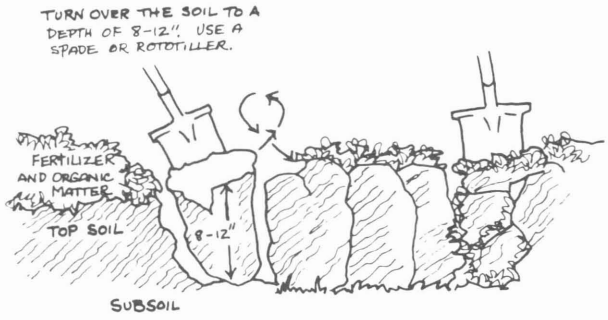


**Figure 2**

Till soil when it is moist, but not wet. Working soil when too wet can cause it to become rough. Spade the soil in the winter to prepare for spring planting. Winter temperature and moisture help mellow soil. This is especially important if the soil is being worked for the first time.

Add organic matter each year during soil preparation to build and maintain the soil. Be sure all plant material is turned under the soil. If organic material is added before planting a fall garden, it should be well-rotted such as compost.

Prior to planting time the soil should be raked clean and leveled. Remove all sticks, rocks and other material.

## Row Preparation

In most Texas areas vegetables should be planted on raised beds. See figure 3. Raised beds:

- Allow water to drain away from plant roots
- Provide furrow for irrigation
- Allow air to enter soil
- Help plants through periods of high rainfall

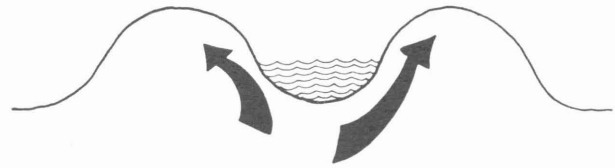

**Figure 3**

If the garden is large enough, make rows 36 inches apart. Where space is a problem, some vegetables can be planted in rows closer than 36 inches, but more care is required during growing season.

Straight beds are nice but not necessary. In small gardens worked with a hoe, rake or other hand tools, straight beds are not as important.

If the garden is large and worked with a rototiller or garden tractor, the rows should be made as straight as possible.

Use a shovel or rake to pull the soil up into beds 8-10 inches high. Pack beds or allow them to settle prior to planting. Before planting, level the top of the bed and widen it to about 6-8 inches. Plant on top of the bed. See figure 4.

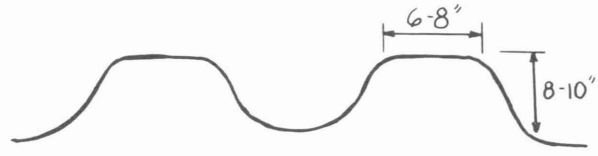


**Figure 4**

After completing the steps required to properly prepare soil for planting, gardening might seem anything but "easy." With proper soil preparation, gardening will get "easier" every year.



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