



EASY GARDENING...FERTILIZING

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Plants must have light, moisture and nutrients to grow. The sun provides light. Moisture comes from rainfall or irrigation. Nutrients come from fertilizers.

Fertilizer will increase plant growth only if it is the limiting factor. Plants grown in poorly drained soils, in excessive shade or in competition with tree roots will not respond to fertilizer.

Fertilizer is organic or inorganic. Organic fertilizers are made of manures, bone meal, cotton seed or other naturally occurring materials. Inorganic fertilizers are made of man-made products. They usually are higher in plant nutrients.

Buying Fertilizers

The three numbers shown on fertilizer containers are the fertilizer analysis. They indicate the percent of nitrogen, phosphorous and potassium present in the fertilizer. These figures are always listed in the same order. So, a 100-pound sack of 10-20-10 fertilizer contains 10 pounds of nitrogen, 20 pounds of phosphorous and 10 pounds of potassium. This equals 40 pounds of nutrients. The rest of the fertilizer is simply carrier or filler, such as sand, perlite or rice hulls. See figure 1. A complete fertilizer is one with all three elements.



This bag contains:
10% Nitrogen
20% Phosphorus
10% Potash or Potassium

Figure 1

Plants need nitrogen for all growth, including roots, leaves, stems, flowers and fruits. It helps give plants their green color and also is needed to form protein. A lack of nitrogen causes the lower leaves to turn yellow. Too much nitrogen kills plants.

Phosphorous is needed for cell division and to help form roots, flowers and fruit. Phosphorous deficiency causes stunted growth and poor flowering and fruiting.

Potassium is in many chemical processes required for plants to live and grow.

A potassium shortage shows up in various ways, but stunted growth and yellow color on lower leaves are common symptoms in many plants. Potassium is sometimes called potash.

Consider the cost per pound of nutrient when buying fertilizer. Generally, higher analysis fertilizers and larger containers are less expensive. For example, a 50-pound bag of 10-20-10 may not cost any more than a 50-pound bag of 5-10-5 fertilizer, but it contains twice the nutrients.

Fertilizer Selection

Most gardeners should use a complete fertilizer with twice as much phosphorous as nitrogen or potassium such as 10-20-10 or 12-24-12. These fertilizers usually are readily available through local sources.

Some soils contain enough potash for good plant growth so no more is needed.

Since slight excesses of potash will not injure plants, it usually is best to use a complete fertilizer.

Do not use lawn fertilizers on gardens. They contain too much nitrogen and many have chemicals included for lawn weed control that can injure or kill vegetables.

Some soils need lime. Lime adds calcium to the soil and makes it less acidic.

Using Fertilizer

Gardeners should have the soil tested about every 2 years. This is especially important for beginning gardeners who are unfamiliar with growing plants. The soil test shows if additional fertilizer or lime is needed.

To collect a soil sample, select a time when the soil is moist but not wet. Dig down about 4-6 inches and take a handful of soil. Do this in several different places over the garden. Place each handful of soil in a large container and mix. From this take about ½ pint of soil for the sample. See figure 2. The sample can be taken in midwinter to prepare for spring planting. County Extension agents can supply a container and tell where to send the sample for testing.

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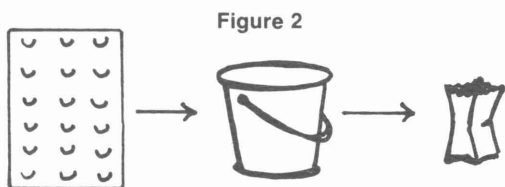
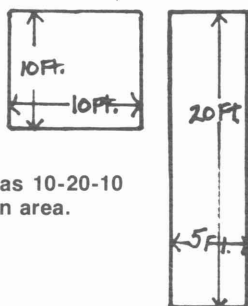


Figure 2

If the garden soil is not tested, use 2-3 pounds of fertilizer such as 10-20-10 for every 100 square feet of garden area. A plot 10 × 10 feet (or 5 × 20 feet) would be 100 square feet. See figure 3. If a garden is 30 feet long and the rows are 3 feet apart, each row is almost 100 square feet. Use 2 pounds of fertilizer if the garden is sandy and 3 pounds if the soil is mostly clay.



Use 2-3 pounds of fertilizer such as 10-20-10 for every 100 square feet of garden area.

Figure 3

Do not use too much fertilizer. This can kill plants. Two cups of most fertilizers will weigh about 1 pound. If a fertilizer has more nitrogen, use less. Two pounds of 5-10-5 fertilizer supplies as much nitrogen as 1 pound of 10-20-10.

If using organic fertilizer such as barnyard manure, spread it evenly over the garden and work into the soil. Use 20-30 pounds of manure for each 100 square feet of garden. Do not use too much. Do not use fresh manure as it can injure plants. See figure 4.

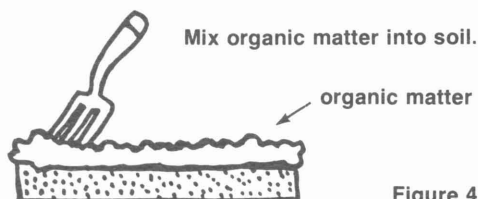


Figure 4

Methods of Applying Fertilizer

Fertilizers are applied four ways:

Broadcast before planting. The proper amount of fertilizer is spread evenly over the garden and mixed with the soil to a depth of 3-4 inches before rows are made. This method is the least likely to cause plant damage and usually is best for home gardeners.

Band or row applications. The fertilizer is applied in a strip to the side of the row before planting. See figure 5. This method requires care to prevent plant damage from roots coming in contact with the fertilizer band.

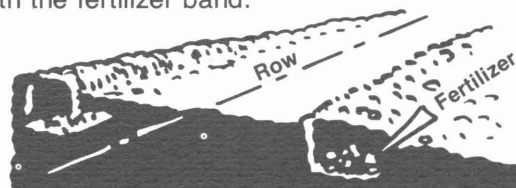


Figure 5

Starter solution. This is used only on transplants such as tomatoes, pepper, eggplants and cabbage. Mix 2 tablespoons of garden fertilizer in each gallon of water and stir well. Pour 1 cup of the mix into the hole and let it soak in before transplanting. See figure 6.

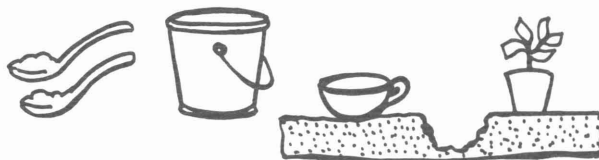
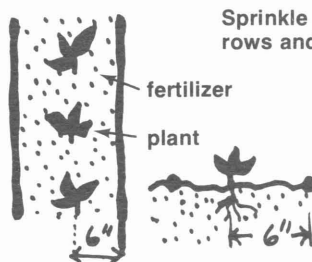


Figure 6

Application to growing plants or sidedressing. This is especially helpful on sandy soils or when rainfall is high. Fertilizer is sprinkled along the side of rows and watered into the soil. See figure 7.



Sprinkle fertilizer along the side of rows and water into the soil.

Figure 7

About ½ cup of garden fertilizer for each 10 feet of row usually is enough. *Easy Gardening* crop publications tell when and how much fertilizer to apply. Sidedressing increases the yield of most vegetables.

Fertilizing for fall gardens is very similar to spring garden fertilizing. If a fall garden follows a well fertilized spring garden, only about one-half the recommended rate is needed at planting. Apply 1-2 pounds per 100 square feet.

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