



*Gardeners Helping Gardeners Succeed*

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# All About Fertilizing Basics

For all gardeners, knowledge of fertilizers—and how to apply them effectively—is as crucial to vigorous plant growth as knowing a plant's hardiness zones. So, in the interest of growing healthy plants, what follows is a brief discussion of the why, what, how, and when of applying these multivitamins.

## Why Plants Need Fertilizers

All of the nutrients essential to plant growth are present in the soil or are floating in the air; however not all plants can access the key nutrients found there. In some cases, the nutrients aren't naturally there to begin with or have been leached out over time. For these reasons, we, the diggers of the dirt and keepers of the garden, must replenish, replace, or help release those elements that are beyond the reach of our plants.

The three essential elements that all plants need are nitrogen (N), phosphorus (P), and potassium (K), the proportions of which are stated as numbers on a fertilizer package. For instance, a general-purpose fertilizer labeled 20-20-20 means that each chemical element—N, P, and K—contributes 20 percent by weight to the total formula (the remaining 40 percent is composed of inert materials and trace elements). The element percentages are offered in varying proportions to suit different fertilizer needs. If you are looking to **boost flowers**, you want a mix like 15-30-15, which is high in **flower-developing phosphorus**. If you want to **green up your lawn**, choose a mix like 25-6-4, which is **high in nitrogen**. Many fertilizers are formulated for plants like roses, bulbs, or vegetables. Check the label for the N-P-K ratio, as you may be able to use a general fertilizer with close to the same nutrient percentages but at a lower cost.

In addition to N-P-K, most fertilizers contain traces of other elements important to plant health. Some trace elements are more important than others, but each nourishes a plant in its own way. The main trace elements in fertilizers are calcium, magnesium, iron, copper, manganese, zinc, molybdenum, boron, and sulfur (you can usually purchase these items (known as 'simples', individually, as well). If any of these elements are lacking in a plant, it may show characteristic deficiency symptoms. An iron deficiency, for instance, causes chlorosis (yellow leaves with green veins), which is easily corrected with a dose of chelated iron.

There is quite a variety of fertilizers available today, both organic (plant and animal derived) and inorganic (chemically derived). While the majority is commercially produced inorganic fertilizer, there are a few options for the organic gardener. Many rely on the old standbys—animal manure and compost—which, although organic and good for soil building, actually contain few nutrients. **For flower and fruit development, bone meal with a high phosphorus count is the organic of choice, while blood meal is a good source of nitrogen.**

## Time Fertilizing Wisely To Avoid Waste

Knowing when to fertilize is as important as using the right fertilizer. If you don't apply the fertilizer at a time when the plant can use it, there's no point in doing it. Most perennials, annuals, vegetables, and lawns will reward you handsomely if fed with a **balanced granular fertilizer in early spring**. Avoid fertilizing before the spring showers, however, or you will be throwing your money away because the nutrients will simply leach out of the soil. **Annuals** like to be fed an additional three or four times during the growing season with a high-phosphorus, water-soluble fertilizer, while **lawns** benefit from a second granular application in early fall.

Trees and shrubs, especially those that flower, also like a dose of a balanced granular fertilizer in spring and another in fall. Late fall is also a good time to fertilize bulbs, especially if you are planting them for the first time; a teaspoon of bone meal added to each bulb hole will generally be sufficient.

Roses have insatiable appetites. To keep them fat and happy, feed them with a soluble fertilizer every seven days during their blooming season.

Feed only well-established plants: fertilizing seeds or tiny seedlings will cause fertilizer burn.

Just remember, these guidelines on feeding are just that—guidelines. Read the package directions before scattering both food and caution to the wind.