

Fertilizer Buying Guide

Fertilizers give plants essential nutrients to survive and thrive. Learn the basics so you can choose the best fertilizer for your lawn and landscape.

Nutrients in Fertilizer

Plants need several types of nutrients. **Macronutrients** are necessary in large quantities. Those that may not be easily available in soil in the right amount are the primary nutrients you find in fertilizer:

- **Nitrogen** for plant growth, leaf development and the production of vivid, green color.
- **Phosphorous** for root growth and the creation of fruit, seeds and flowers.
- **Potassium**—sometimes called potash—for root development and resistance to drought and disease.

Secondary nutrients—oxygen, carbon, hydrogen, calcium, magnesium and sulfur—are also necessary macronutrients, but are often available in soil or air. **Micronutrients**—including boron, chlorine, cobalt, copper, iron, magnesium, molybdenum, nickel and zinc—are needed only in small amounts.

Before you shop for fertilizer, perform a soil test.

How to Read Fertilizer Numbers

Three prominent numbers on a fertilizer package—known as a NPK value, guaranteed analysis, or fertilizer grade—tell you the percentage of available primary macronutrients by weight in the package:

- **Nitrogen (N)** content is the first number. Helps with leaf development and makes your lawn green.
- **Phosphorous (P)** content is the second number. Aids in root growth.
- **Potassium (K)** content is the third number. Vital for disease resistance and root development.

A bag marked 16-4-8 contains 16% nitrogen, 4% phosphorous and 8% potassium. To determine how much of each is in the bag, multiply the percentage by the weight of the bag.

Example: For a 50 lb bag:

$$0.16 \times 50 = 8$$

$$0.04 \times 50 = 2$$

$$0.08 \times 50 = 4$$

The bag contains 8 lbs of nitrogen, 2 lbs of phosphorous and 4 lbs of potassium. The remainder is typically inert material which helps distribute the fertilizer evenly and prevent chemical burn. There may also be secondary nutrients or micronutrients in the formula.

Types of Fertilizer

You apply **granular fertilizers** dry—with a mechanical spreader or from a shaker container—and water them in. Fertilizer for lawns and gardens are often in granular form. They're easier to control because you can see how much you're using and where you're dispersing them.

There are two formulations of granular fertilizers:

- **Quick-release**—known as a water-soluble nitrogen (WSN) - fertilizers provide nitrogen to plants immediately. They generally last for 3 to 4 weeks, depending upon temperature and rainfall.
- **Slow-release** or water-insoluble (WIN) fertilizers are available in sulfur-coated varieties, which last for about 8 weeks, and polymer-coated varieties, which can last for about 12 weeks. The time estimates may vary depending upon the amount of rainfall. You don't need to apply these fertilizers as often, and they produce more even growth. In addition, burning caused by nitrogen is less of a concern with slow-release fertilizers.

Liquid fertilizers are fast-acting. Plants absorb them quickly through the leaves or roots, so you need to apply them every 2 to 3 weeks. Most are concentrated you mix with water. Some are available as hose-end bottles that create a mixture as you apply them, others you mix yourself and apply with a watering can. Liquid fertilizers work well for container plants, but you can also find liquid lawn fertilizers.

Plant food spikes are a solid form of fertilizer you drive into the soil to dispense nutrients over time. They provide a simple means to feed houseplants, trees and shrubs.

Lawn Fertilizers

Lawns have specific fertilizer requirements, depending on the season and the type of turfgrass. Read the instructions on the package carefully to make sure it's formulated for your lawn. The packaging also gives you the square footage the product will cover and spreader setting to apply it at the correct rate.

Weed and feed is a lawn fertilizer that contains weed killer for broadleaf weeds such as dandelions or grassy weeds that the product is effective against to be sure it fits your needs. Applying these products at the proper time is necessary for success. Pre-emergent, such as those commonly used to prevent crabgrass, are weed killers that you apply early in the season, before weeds germinate. They're ineffective if the weeds are already growing. Post-emergents kill actively growing weeds on contact, but don't kill weeds that haven't germinated. If you're also sowing grass seed, check the weed and feed packaging for the proper interval between applying weed and feed and sowing seed—weed control products can prevent germination or kill immature grass seedlings.

There are two other special formulations you may see. **Winterizers** are fertilizers with high levels of potassium to help cool-season lawns deal with the stress of winter. **Starter fertilizers** have high levels of phosphorous to help new lawns develop strong roots.

You can also find lawn fertilizer designed to provide insect control as it feeds.

Plant Food

Fertilizers for vegetables, flowers, trees and shrubs are often known as plant food. They're available as liquids, granules or spikes. You'll find some for general use and some specially formulated for indoor plants such as African violets and cacti, or outdoor plants such as roses, rhododendron and evergreen trees. Some plant foods include weed control. Read the label to see which weeds they are effective against. Look for packaged soil mixes that include plant food as well as elements to improve water retention and aeration.

Caution: Some plant food are not suitable for edible plants.

Organic Fertilizer Alternatives

Organic fertilizers, soil conditioners and soil additives are also available. Some of the most common are:

- **Blood meal:** a byproduct of the meat-packing industry. Steamed and dried, it's high in phosphorous.
- **Bone meal:** another byproduct of the meat-packing industry, bone meal contains calcium and phosphorous, essential elements for plant growth.
- **Fish emulsion:** a fish-processing byproduct. Mild, nontoxic and organic, fish emulsion is good for tender plants that may suffer fertilizer burn.
- **Compost:** one of the best all-around garden materials for soil improvement.
- **Composted manure:** for soil conditioning or use in the compost pile.
- **Peat moss:** an amendment that aerates and lightens heavier soils such as clay. It adds to sandy soils to reduce the leaching of nutrients.