

Search

Search

[Home](#) | [Soil Erosion & Hydroseeding](#) | [Plant Search](#) | [Contact Us](#)

**In This Issue>>**

- Business Focus printer friendly format
- Landscaping
- Irrigation
- Close-Up Profile
- Waterscapes
- News
- People
- Product News
- Contractor Marketing
- Solutioneering
- The Drip Line
- Nightlighting
- Irrigation Connection

**Previous Issues**

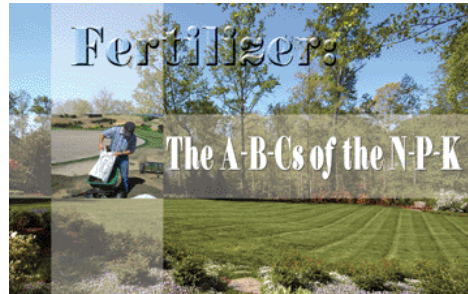
- Business Focus
- Landscaping
- Irrigation
- Close-Up Profiles
- Waterscapes

**Resources**

- Bulletin Board / Blog
- Classifieds
- Database
- Manufacturer's Reps
- Comparison Charts
- Waterscape Virtual Trade Show
- Virtual Trade Show

**Subscribe**

- Subscription Sales
- Free Registration
- Newsletter Sign Up
- Request Media Kit



by Rebecca Peterson

How did you first learn to put down pavers for a patio? To install an irrigation system? To operate a riding lawnmower? More likely than not, you learned by doing it.

While there are a variety of classes, seminars, and manuals available to teach you how to do most landscaping tasks, many contractors learn the basics through on-the-job, in-the-field training, relying on courses and training materials mainly to polish or expand their skills. For most jobs a landscape contractor is required to perform, this method of learning-through-doing is absolutely perfect. Fertilizing, however, is a different story.

Sure, it doesn't take a lot of specialized knowledge or skill to apply fertilizer—follow the instructions on the package and you're good to go. The problem lies in choosing the right package to begin with. Simply walking into a distributor and buying any old bag won't be effective; neither is choosing a certain bag because you've successfully used it elsewhere, or because that's what a competitor bought.

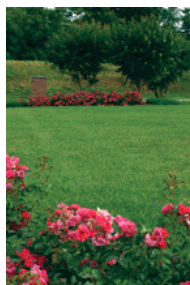
To buy the best bag of fertilizer for an application, you have to know a little bit about fertilizer—information you can't just pick up from laying it down. "A fertilization program should be based on the needs of the client and the landscape," says Keith Bowman, maintenance division manager for McHale Landscape Design, Upper Marlboro, Maryland. "It shouldn't be a cookie cutter operation."

It's not that the principles of fertilization are difficult or complicated; in fact, the basics are pretty easy. Familiarizing yourself with them will go a long way towards making a landscape look its best.

**What's in a bag?**

Fertilizer, at its most basic, is a compound given to plants to promote growth. It accomplishes this by providing the plant with certain nutrients, sufficient quantities of which may not be available to the plant in the soil. Nutrients are categorized as primary, secondary, and micronutrients.

The most important nutrients in fertilizer are the primary nutrients: nitrogen (N), phosphorous (P), and potassium (K). In order to thrive, a plant needs more of these nutrients than any other. Of these three, nitrogen is further considered the most critical.



Nitrogen is the workhorse nutrient for turf, and is most commonly associated with foliar growth and color," says Ray Buckwalter, marketing manager for Lebanon Turf, Lebanon, Pennsylvania. Nitrogen can be found in the amino acids and proteins within plants—the essential building blocks that make a plant. It is usually added to fertilizer in one of two forms, ammonium or nitrate.

Phosphorus is often associated with root growth; it is also essential in many metabolic processes throughout the plant. It's involved in the energy molecules that allow a plant cell to run, just like spark plugs help create the energy that allows your car to run. Phosphorus is usually contained in fertilizer in the form of phosphate, and is an important nutrient for plant establishment.

Finally, there's potassium. Potassium doesn't really play a structural role in plants; rather, it's associated with improved stress tolerance. "Potassium helps to regulate concentration gradients between cells. For example, it helps cells exchange sugar and keep healthy. A concentration of too much sugar in one cell can be damaging, as can too little. Potassium allows plant cells to even out these inequalities so that the plant doesn't become stressed," explains Terrance Fujimoto, acting department chair for the Plant Sciences department at California Polytechnic University, Pomona.

You may have heard potassium referred to as "potash." This is the form in which it is generally added to fertilizer. Potash gets its name from early American settlers, who burned wood in pots to create potassium-rich ash, which could then be sold.

Different fertilizers contain different amounts of each of the primary nutrients. Bags of fertilizer are generally marked with a three-number grade, or analysis. These three numbers correspond to the amount of each primary nutrient the bag contains. They tell you what percentage of the material in the bag is nitrogen, what percentage of the material in the bag is phosphorous, and what percentage is potassium. The numbers are always listed in the same order: nitrogen, phosphorous, and potassium, or N-P-K.

As an example, let's say you have a 100-pound bag of fertilizer. Its analysis is 30-20-10. This fertilizer would be 30% nitrogen, 20% phosphorus, and 10% potassium. Because 30% of 100 pounds is 30, the bag contains 30 pounds of nitrogen. Twenty percent of 100 pounds is 20 pounds, so the bag also contains 20 pounds of phosphorus, and finally, it contains ten pounds of potassium.

Of course, if you add all that up, the primary nutrients only comprise 60 pounds of the material in a 100-pound bag. This leaves 40 pounds of material unaccounted for; so what's all that? Mostly, it's carrier material—a mix of compounds that help "carry" and deliver the primary nutrients to the plants.

Some of those 40 extra pounds could also be secondary nutrients or micronutrients. Secondary nutrients include calcium, magnesium, and sulfur. Of these, turf uses the highest quantity of sulfur.

Some micronutrients include iron, manganese, boron, chlorine, zinc, copper, and molybdenum. Iron is the most common, and is often credited with the dark green color in turf. Like iron, most of the micronutrients are metals, and serve as catalysts for various chemical reactions within a plant. Iron is a catalyst for chlorophyll to be formed.

#### Types of fertilizer

Fertilizer can basically be broken down into two major types: organic and inorganic. Both contain the primary nutrients; the difference lies in how the primary nutrients for each category are made. Organic fertilizers encompass both natural organics and synthetic organics, while inorganic fertilizers include mineral fertilizers and chemical fertilizers.

A defining characteristic of organic fertilizer is carbon. "Organic fertilizers all contain carbon. This is important to note because carbon serves as food for the microorganisms living in soil," says Greg Naffz, western sales manager for Sustane Natural Fertilizer of America, Cannon Falls, Minnesota. "Feeding the microorganisms indirectly feeds the plants, because the microorganisms help to create a higher quality soil. The higher the quality of the soil, the more plants will thrive."

Natural organic fertilizers include manure, blood meal, bone meal, and activated sewage sludge. Unappetizing as all of those may sound, these biologically-based compounds are great food for plants. The name "natural organic" pretty well sums them up—they are created through totally natural means.

Synthetic organic fertilizers, on the other hand, are manufactured under factory or laboratory conditions. However, the end result is still an organic, biological compound. An example of a synthetic organic would be urea. It occurs naturally in living organisms, but can also be created in a laboratory from inorganic materials.

Under the inorganic umbrella, mineral fertilizers are made out of materials that have been mined, in a mining operation. Examples would be rock phosphate and limestone. While limestone is technically a calcium source, it is most commonly used to reduce soil acidity, a serious problem in some parts of the country.

Chemical fertilizers are the fertilizers that you're probably the most familiar with. These are created entirely out of manufactured or chemically-synthesized compounds, and include ammonium nitrate and potassium sulfate.

Because chemical fertilizers can be created in a lab, and manipulated to achieve whatever specifications necessary, they typically have the highest analyses. In other words, chemical fertilizers usually contain high amounts of the three primary nutrients. On the other end of the spectrum, natural organic fertilizers typically contain much lower amounts of the primary nutrients. Because of this, both have their own advantages and drawbacks.



Because chemical fertilizer has such a high analysis, less of it has to be applied to have a beneficial effect on a property. It also tends to be less expensive than organic fertilizers.

However, while you do have to apply more organic fertilizer to achieve a beneficial effect, this is an advantage in and of itself. Many chemical fertilizers are used by plants very quickly, immediately releasing their nutrients. Organic fertilizers, on the other hand, are generally slow-releasing. They break down and release nutrients over a period of time. Therefore, since you have to apply more organic fertilizer, and because it releases nutrients slowly, using organic fertilizer means fewer fertilizer applications. This can represent a significant labor savings.

Another factor that can affect your choice of an organic fertilizer over a chemical fertilizer is

the environment. Environmental friendliness is a growing movement among American consumers. Many are concerned about chemical fertilizer's tendency to run off lawns and pollute the water supply.

Establishing yourself as a contractor who specializes in organic fertilizers can give you a good public image, and attract more business from eco-conscious customers. It can also help you comply with the increasingly strict stormwater runoff regulations being seen in many cities and states around the country.

"Every year, we're seeing more and more clients requesting an organic fertilizer program, in spite of the higher expense," says Bowman. "In our region, people are particularly worried about polluting Chesapeake Bay, so that motivates many customers to go organic."

#### The test

If the purpose of fertilizer is to provide plants with the nutrients that the soil may lack, then the real problem is in knowing what nutrients the soil is deficient in. Even the plants themselves may not be reliable indicators—while some deficiencies are common enough that they are easy to visually recognize, others are rarer and may be nearly impossible to identify.

This is where soil testing comes in. "It's easy to brush off the importance of soil testing—mainly because a thorough analysis can cost \$50-\$75—but being able to pinpoint the precise needs of soil is priceless. Soil testing is the backbone of any truly effective fertilization program," says Michael Frlot, plant health care supervisor for Stay Green, Santa Clarita,

California.

A good soil testing laboratory won't just send you a piece of paper with a bunch of numbers and abbreviations printed on it, but instead will actually recommend a fertilization program for you to follow. With help like that, effective fertilization couldn't be easier. It helps the plants in your clients' landscapes bloom, and grows your profits right alongside them.



[Previous](#) | [Next](#)

---

#### RELATED RESOURCES

---

**Topic:** Landscaping

**Articles & Archives:**

- [Hydroseeding: Better! Faster! Stronger!](#)
  - [Rev Your Engine: Maximize your mower](#)
  - [The Power of Color](#)
  - [Armor that Rocks: The First Line of Defense](#)
  - [Case Study: The JobClock System](#)
- 

---

#### Comment Box

You must sign in to post

Username

Password

No Blogger account? [Sign up here.](#)

Copyright © 2007 Irrigation and Green Industry All rights reserved. | [Legal Terms](#) | [Console Login](#)  
P: 818-342-3204 | F: 818-342-0731 | [webmaster@igin.com](mailto:webmaster@igin.com)  
6925 Canby Ave, Suite 102 Reseda California 91335