

IT'S ALL IN THE NUMBERS: *Reading a Fertilizer Label*

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If you've ever gone to your local lawn and garden or farm supply store to purchase fertilizer, you may have been one of those people standing in confusion, scratching your head because of all of the selections. If you're like most of us you eventually grab a bag and go on your way, not really knowing what you just purchased.

Reading and understanding the elements of a particular fertilizer is intimidating, but with a little knowledge you'll look like a pro the next time you buy a bag of fertilizer.

What is N-P-K?

The three numbers on the front of a fertilizer bag represent the three primary ingredients contained in the mixture; all plants need one or more of these nutrients in varying degrees.

The first number represents **Nitrogen (N)**. All plants need nitrogen; it helps plants develop vibrant green **foliage**. The second number represents the amount of **Phosphorous (P)** in the mixture, one of the elements essential for plant growth. Phosphorous helps plants develop strong **root systems**. Finally, the third number stands for the amount of **Potassium (K)**, commonly referred to as "potash." It is also one of the primary elements for plant growth. Potassium helps plants develop beautiful, **colorful flowers**. The nutrient needs for different crops vary. For example, green leafy crops need two-to-four times as much nitrogen as potassium. Vegetables that produce fruit need more phosphorous. Rather than

catering to each of these individual needs, use a well balanced, slow-release fertilizer that contains a fairly equal amount of nitrogen, phosphorous, and potassium.

Additionally, there are two items on the label that are important to understand: the guaranteed percentages of nutrients claimed by the manufacturer (the guaranteed analysis) and the materials the fertilizer is made from (derived from.)

The "guaranteed analysis" tells the percentage of each nutrient in the fertilizer, while the second lets you know the source of the nutrients.

In the "derived from" section, the actual materials used in formulating the fertilizer are listed. Knowing what fertilizer is made of, and the characteristics of its components, helps you to better evaluate its value to you and its suitability for your particular situation.

What's in the Number?

All fertilizers have three numbers on the label which indicate the fertilizer analysis, or "percentage by weight" of nitrogen, phosphorus, and potassium, in that order.

A 50-pound bag of fertilizer labeled 20-10-5 would contain 20% nitrogen (10 pounds), 10% phosphorous (5 pounds), and 5% potassium (2.5 pounds). See the chart below.

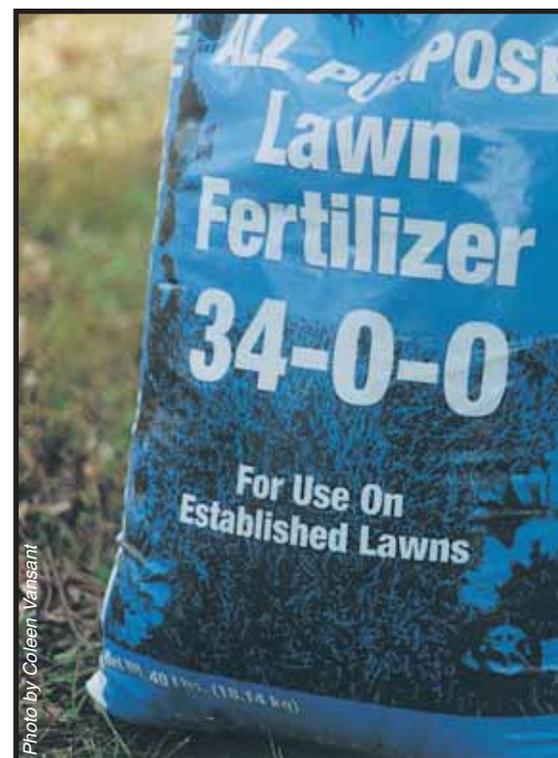


Photo by Coleen Vansant

A 50 POUND BAG OF 20-10-5 FERTILIZER =
20% nitrogen (.20 X 50 lbs = 10 lbs)
10% phosphorous (.10 x 50 lbs = 5 lbs)
5% potassium (.05 x 50 lbs = 2.5 lbs)

This product would be considered a “complete” fertilizer because all three nutrients are available. An “incomplete” fertilizer would have a label like 0-0-60, 46-0-0, or 0-20-20, since one or more of the elements is missing.

The higher the numbers on the bag does not necessarily mean a better product. It does mean the fertilizer will dissolve more quickly in water than one with lower percentage indicators. The quick solubility means that a good amount of the applied fertilizer is wasted, because it either leaches into the subsoil or runs off.

Fertilizer Ratio

Fertilizer ratio indicates the relative amounts of nutrients to each other. A 10-10-10 fertilizer is a 1-1-1 ratio, and a 20-10-5 fertilizer is a 4-2-1 ratio. You want to consider your needs when looking at the ratio. Example: vegetable gardens usually call for a 1-2-2 ratio, which would be something like a 5-10-10 or

10-20-20 fertilizer. Trees like a 2-1-1 ratio, which would be a fertilizer such as 10-5-5 or 20-10-10. Lawns usually call for a 3-1-2 fertilizer, such as 30-10-20.

High analysis fertilizers (those with larger numbers on the label) should be applied at a lower rate to yield the same results. For example, 5 pounds of a 20-20-20 fertilizer would yield the same amount of nutrients as 10 pounds of a 10-10-10 fertilizer.

Other Things to Consider

Fertilizer is available in two types – liquid and granular. Liquid fertilizers are fast-acting and require application every 2-3 weeks. Most are concentrates, mixed with water prior to application by a sprayer or watering can.

Granular fertilizers are applied dry and must be watered in. They are normally applied by hand or mechanical spreaders. They are produced in two different formulas, quick release and slow release. Quick-release fertilizer usually lasts for three to four weeks, depending upon the temperature and amount of rainfall.

There are two primary types of slow-release fertilizers, also known as water-soluble nitrogen (WSN) or field grade fertilizers. Sulfur coated lasts for about 8 weeks. Polymer coated lasts about 12 weeks.

Natural or Not?

Organic fertilizers come from plant and animal sources. These fertilizers have a slower release of nutrients as they need to be decomposed by soil microorganisms. They are a lot easier on plant roots. Harder to find than inorganic fertilizers and often more expensive, the best organic fertilizers are cottonseed meal, bone meal, manure, and chicken litter.

Inorganic fertilizers are inexpensive and are the most frequently used type for

trees. Inorganic nitrogen-based tree food sources are sodium nitrate, ammonium nitrate, and ammonium sulfate. General purpose fertilizers are usually complete with N-P-K. When using these fertilizers, be careful not to overdo. Inorganic fertilizers can come in slow-release, liquid, or water-soluble for foliar application.

To find out what is synthetic and what is natural, read the ingredients and check the percentages. If the numbers on the package equal 20 or more, there is a good chance it is synthetic. If the numbers are less than 20, the product is usually natural.

Be Safe

Excess product runoff from fertilized areas has to go somewhere. It can affect the water table or run off into nearby areas and have an impact on the local water supply or nearby stream.

Always follow the package directions in regard to proper attire, application procedures, and safety precautions.

Tips

1. Before purchasing fertilizer, have a soil test done to determine your fertilizer needs. Contact your local Extension Office for information on soil testing.
2. There is no “one size fits all” fertilizer. Fertilizer choice depends on the type of plant grown.
3. Decide what plant response you want to occur (foliage, roots, or flowers).
4. Apply the fertilizer only if your desired response is likely.
5. Fertilize only as necessary to give the desired response.
6. Observe fertilizer application to see if it gave you the response you want.
7. Always read the label and follow the manufacturer’s directions and recommendations. ♻️



Sources:

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- <http://www.lowes.com/FertilizerGuide.html>