



FACT SHEET 4.5

FERTILIZER: WHAT'S IN THE BAG

Once you have your soil test results and identify what nutrients your soil needs (if any) it is time to select a source for these nutrients. Both organic and synthetic fertilizers can supply your nutrient needs; however, many soil amendments, including compost and manure, offer several additional benefits that can make them a better choice.

CAUTION!

Whether you choose to use an organic or synthetic fertilizer – never exceed the application rate recommended in your soil test results or on the product label.

Since organic fertilizers need to be broken down by microorganisms in the soil, they are slowly released into the environment. This 'slow release' process naturally protects plants from overfertilization. It also supplies the nutrients plants need over a longer period of time compared to chemical or synthetic products that often lack this 'slow release' mechanism.

- This slow release process helps reduce the chance of nutrients leaching into groundwater or coming into contact with stormwater runoff, offering greater protection to nearby water resources. It can also decrease the number of applications needed annually, saving time and money.
- As organic fertilizers break down, they can help improve the soil structure by increasing its ability to retain water and promote healthy soil.
- Organic fertilizers are often renewable, biodegradable, sustainable, and environmentally friendly.

The following sample provides guidance on how to read fertilizer labels.



DID YOU KNOW?

Just one pound of phosphorus reaching a surface water can produce 10,000 pounds of algae and aquatic plants.

1. **BRAND NAME** – Lists the name of the product provided by the manufacturer.
2. **N-P-K RATIO OR FERTILIZER GRADE** – Fertilizer labels generally have 3 bold numbers prominently displayed that represent the minimum percentage by weight or proportion of the three primary macronutrients. Also known as the fertilizer grade, these numbers give the percentage of total nitrogen (N), available phosphorus (P) and water-soluble potash (K). Our sample label indicates that the fertilizer contains 3% total nitrogen, 4% available phosphorus and 2% water-soluble potash. Separated by a hyphen, these numbers are always in the same order and are often referred to as the N-P-K Ratio.
3. **GUARANTEED ANALYSIS** – States the minimum percentage by weight of plant nutrients in the fertilizer claimed by the manufacturer. The guaranteed analysis is industry standard information and, by law, is required to be provided on every commercial product. Note that the percentages generally will not add up to 100% since there are often other nutrients and filler products in the fertilizer. Fillers are inactive or inert ingredients that can include material to help prevent the fertilizer from drying out or reduce odor.
4. **DERIVATION STATEMENT** – Lists the sources for the nutrients in the guaranteed analysis. Look for natural organic sources such as manures and meals as well as controlled release ingredients that are often identified as pelletized, coated or called out as ‘slow-release’.
5. **NON-PLANT FOOD INGREDIENTS** – Identifies material in the fertilizer that are non-plant food ingredients. For organic fertilizers, this often includes a list of good bacteria. These bacteria are important to soil health and generally are not found in chemical-based fertilizers.
6. **DIRECTIONS FOR USE** – Details how to apply the fertilizer including where, when and how much. If you have completed a soil test you may find that you need less than the recommended rate on the label. Many labels will also say where and when NOT to apply the product. This may include not applying the fertilizer if heavy rain is expected or near water, storm drains or drainage ditches.
7. **STORAGE** – Provides details on fertilizer storage such as store in a dry place.
8. **PRECAUTIONARY STATEMENT** – Includes information related to safety and product warnings.
9. **CONTACT INFORMATION** – Lists the contact information for the manufacturer, registrant or distributor of the product.
10. **NET WEIGHT OR VOLUME** – Gives the net weight or volume of product in the fertilizer container or bag.

1 GROWMAX PLANT FOOD

2 **3 - 4 - 2**
(N) (P) (K)

3 GUARANTEED ANALYSIS

Total Nitrogen (N).....	3.0%
Available Phosphorus (P ₂ O ₃).....	4.0%
Soluble Potash (K ₂ O).....	2.0%
Calcium (Ca).....	8.0%
Magnesium (Mg).....	1.0%

4 DERIVED FROM

ALSO CONTAINS NON-PLANT FOOD INGREDIENTS..... **5**
xxxxx

6 DIRECTIONS FOR USE
xxxxx

7 STORAGE
xxxxx

8 KEEP OUT OF REACH OF CHILDREN AND PETS

XYZ CHEMICAL CO. **9**
123 STREET
ANYTOWN, STATE 01234
(555) 555-5555

NET WEIGHT - 4 LBS. **10**

Sample Fertilizer Label



BIGGER IS NOT ALWAYS BETTER

Fertilizers with larger numbers are often purchased by consumers with the thought that a higher N-P-K ratio means a better fertilizer. Fertilizers with big N-P-K numbers such as 30-10-15 or 18-24-12 are often synthetic in origin with much of the product wasted since plants cannot completely utilize all of the nutrients. This unused fertilizer can leach into groundwater or runoff into nearby surface water. Lower N-P-K products that are organic in origin or slow-release can feed plants slowly over time and are less likely to impact groundwater or surface water. Remember that the best fertilizer is one that is selected based on your soil test results so that it can meet all your soil and plant needs.

COMBINATION PRODUCTS

Never use combination products such as those that contain fertilizers with pesticides or fertilizers with herbicides (sometimes called 'Weed and Feed'). Although most often marketed for lawn care, combination products can sometimes be found in the general garden section in stores. If you happen to need a fertilizer along with an herbicide or pesticide, carefully select these products separately. This gives you greater control over the individual product along with how much, when and where you apply it.

SKIP THE BAG

Better yet, skip the fertilizer bag and consider using compost and/or aged animal manure instead of commercially purchased fertilizer to add nutrients to your soil. These types of materials might be available right from your own hobby farm or can often be purchased locally. Using compost or manure can recycle material and provide tremendous boosts to soil health and the living microorganisms within, as well as improve water quality by reducing the potential for erosion of excess nutrients into waterbodies.

NUTRIENT	COMMONLY AVAILABLE ORGANIC SOURCES
NITROGEN (N)	blood meal, composted chicken manure, soybean meal, cottonseed meal, alfalfa meal
PHOSPHORUS (P)	rock phosphate, bone meal, bat guano
POTASSIUM (K)	potash (of muriate or sulfate), greensand, granite dust, seaweed/kelp meal, sul-po-mag



WATER QUALITY BENEFIT

Fertilizers can be a major source of water pollution. Basing fertilizer applications on soil test results and using organic sources helps protect nearby surface waters.