Plant Food Fundamentals

T I P S H E E T

II. Reading & Comparing Plant Food Labels

Plant foods sold in the United States generally have a label with information on the following: Grade, Net Weight, Guaranteed Analysis, Sources of Nutrients. Each of these components is explained below. When shopping for plant foods, this section is indispensable for making comparisons between seemingly similar products.

20 lb. Net Weight

XYZ Brand **5-10-5 Guaranteed Analysis**

Nitrogen.....5%
Phosphate.....10%
Potash 5%

Nutrients derived from ammonium sulfate, triple super phosphate, and potash.

Figure 1

1. The Grade

A shorthand representation of the minimum percentages guaranteed (by weight) for Total Nitrogen, Available Phosphate, and Soluble Potash, with each guarantee separated by a hyphen. In Figure 2, the grade for Plant-tone is 5-3-3, which means that it is guaranteed to contain 5% nitrogen, 3% phosphate, and 3% potash. Therefore, in a 40 lb. bag of Plant-tone, there would be 2 lbs. of nitrogen, 1.2 lbs. of available phosphate, and 1.2 lb. pack of soluble potash.

2. Net Weight

All fertilizers must be sold on the basis of net weight (not volume). When comparing products, it is often better to compare the price per pound rather than total price because the net weights often vary.

3. Guaranteed Analysis

States the minimum percentage by weight of plant nutrients claimed by the seller. If the manufacturer claims a given nutrient, it must be guaranteed in this section.

Plant-tone®
5-3-3

GUARANTEED ANALYSIS

Total Nitrogen 5.0%
0.4%. . . . Ammoniacal Nitrogen
1.6%. . . . Water Soluble Nitrogen
3.0%. . . . Water Insoluble Nitrogen
Available Phosphate (P_2O_5) 3.0%
Soluble Potash (K_2O) 3.0%
Calcium (Ca) 3.0%
Magnesium (Mg) 1.0%
0.6%. . . . Water Soluble Magnesium
Sulfur (S) 1.0%

Derived from: Hydrolyzed Feather Meal, Pasteurized Poultry Manure, Cocoa Meal, Bone Meal, Alfalfa Meal, Greensand, Humates, Sulfate of Potash, and Sulfate of Potash Magnesia.

*Contains 3.0% Slow Release Nitrogen.

Non Plant Food Ingredients:

Contains 3,804,705 colony forming units (CFU's) per lb. (253,647 CFU's per lb. of each of the following 15 species):

Acidovorax facillis
Arthrobacter agilis
Bacillus licheniformis
Bacillus megaterium
Bacillus oleronius
Bacillus pumilis
Bacillus subtilis
Bacillus thuringiensis
Marinibacillus marinus
Paenibacillus lentimorbus
Paenibacillis polymyxa
Pseudomonas alcaligenes
Pseudomonas chlororaphis
Pseudomonas putida
Rhodococcus rhodochorus

While fertilizer materials have unlimited shelf life, the beneficial microbes in this product are best used within two years of the production date (see side panel for production date). After that time their numbers may be reduced.

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Figure 2

4. Derivation Statement

The derivation statement lists the sources for the nutrients guaranteed. Look to see how many ingredients are listed. The more ingredients, the more rates of release, the better the feed. Check also to see if there are any slow release ingredients, i.e. natural organic or controlled release ingredients.

Tips for Comparing Grades:

Bigger doesn't mean better. Some consumers mistakenly believe that bigger numbers in the analysis means better plant food. However, high analysis plant foods are often wasted because the plant cannot utilize all of the nutrients immediately, and what it does not use leaches away from the soil. It is more important to look for slow release ingredients such as natural organic or controlled release that will slowly feed the plant and not leach away.

Take weight into consideration. Some consumers mistakenly believe that bigger analyses always mean more nutrients. However, because an analysis represents the percentage by weight of a given nutrient, it may not always be the case. In the table below, Espoma Organic provides more nitrogen per 1,000 square feet than two competitors products; one with a higher and one with a lower nitrogen analysis.

Figure 3

Brand	Analysis	Application Rate per 1,000 sq. ft.	Nitrogen per 1,000 sq. ft.
Espoma Organic	7-2-2	12 lbs.	0.84 lbs.
Espoma Lawn Food	18-0-3	4 lbs.	0.72 lbs.
Brand X (Natural)	3-1-5	10 lbs.	0.30 lbs.
Brand Z (Synthetic)	16-4-8	4 lbs.	0.64 lbs.

Comparison Tips:

Is there any slow release nitrogen? To determine how much of the nitrogen is slow release, add the percentage of "Water Insoluble" Nitrogen to any other "Slowly Available" Nitrogen in the guaranteed analysis. In the Plant-tone label of Figure 2, 3% nitrogen (approximately 60% of the nitrogen guaranteed) is slow release. In the XYZ brand label in Figure 1, there is no water insoluble guarantee or any other slow release claim. Therefore, this is a water soluble product that will not last long in the soil.