

How to Read a Fertilizer Label *(continued)*

Lawn King Granular Lawn Fertilizer 17-23-6	
Ammonium Sulfate with Coated Urea Guaranteed Analysis	
Total Nitrogen (N)	17%
Available Phosphate (P ₂ O ₅)	23%
Soluble Potash (K ₂ O)	6%
Sulfur (S)	20%
<p>Directions: Uniformly spread 3 ¾ lb of product per 1,000 sq.ft. Water well immediately after application. Repeat every 4 to 8 weeks. Do not apply near water, storm drains, or drainage ditches. Do not apply if heavy rain is expected. Apply this product only to your lawn and clean up any product that spills onto surfaces other than your lawn.</p> <p>Caution: Keep this product out of reach of children and pets. Wash hands with soap and water after handling product. Avoid contact with eyes and mouth. If product gets in eyes, rinse with water for 15 minutes.</p>	
Net Wt. 35 lbs. Manufactured by: Super Nutrient Source, USA	

Tall Trees Tree and Shrub Fertilizer 11-15-9	
Continued Release Spikes Guaranteed Analysis	
Total Nitrogen (N)	11%
Available Phosphate (P ₂ O ₅)	15%
Soluble Potash (K ₂ O)	9%
Boron (B)	0.02%
<p>Directions: Pound spike into soil at least 2 feet away from the tree trunk and under the drip line of the tree's branches. Apply spikes once in the spring and once in the fall when the soil is moist. Store spikes in a sealed plastic bag in a dry area. Store unused spikes in a sealed, plastic bag.</p> <p>Caution: Keep this product out of reach of children and pets. Wash hands with soap and water after handling product.</p>	
Contains 15 Spikes Manufactured by: Trees R Us, USA	

How to Read a Fertilizer Label *(continued)*

Super-Gro Water Soluble All Purpose Plant Food 8-12-4	
Guaranteed Analysis	
Total Nitrogen (N)	8%
Available Phosphate (P ₂ O ₅)	12%
Soluble Potash (K ₂ O)	4%
Copper (C)	0.15%
Directions: Add one tablespoon of product to one gallon of water and mix thoroughly. Reapply every 7 to 10 days. Caution: Keep this product out of reach of children and pets.	
Net Wt. 4 lbs. Manufactured by: The Nutrient Connection, USA	

a. According to the three labels listed above which one has the highest percentage of:

- Nitrogen? _____
- Phosphorus (phosphate)? _____
- Potassium (potash)? _____

b. Name three other substances besides nitrogen, phosphorus, or potassium that can be found in fertilizers. _____

4. You have been applying Super-Gro fertilizer to your tomato plants and watering them appropriately. You are disappointed when large brown spots appear on the base of each red tomato. Your local nursery expert says your tomato plants are lacking calcium. Could you use Lawn King or Tall Trees fertilizer to provide calcium to your tomatoes or should you come up with another method? Explain your reasoning.

5. All fertilizer labels have a warning or caution section. These sections inform you on how to properly store the fertilizer and if any protective clothing or eyewear should be used when handling the fertilizer. What do all three of these labels say in the warning section?

How to Read a Fertilizer Label *(continued)*

6. Natural fertilizers are also used commercially. Animal manures are one example of a natural fertilizer and contain many of the same nutrients as chemical fertilizers. Manures also include organic material that improves soil quality, helps prevent soil erosion, and increases the ability of the soil to hold water. The release of nutrients is slower with animal manure than with a manufactured fertilizer. Animal manure is also more labor intensive to apply than manufactured fertilizer. The following table contains information about four types of manure. It shows how many pounds of each nutrient are contained in one ton of animal manure.

Nutrients in One Ton (2,000 lbs.) of Manure			
Type of Manure	Percentage of N	Percentage of P₂O₅	Percentage of K₂O
Chicken	1.6	0.9	0.4
Dairy Cattle	0.6	0.3	0.6
Turkey	2.0	2.0	2.0
Swine	0.5	0.3	0.5

- a. What type of animal manure contains the most:

- Nitrogen (N)? _____
- Phosphorus (Phosphate P₂O₅)? _____
- Potassium (Potash K₂O)? _____

- b. If you were to buy a bag of chicken manure what would the three numbers on the label be?

What would the three numbers be on the bag of cattle manure? _____

Generally, which have higher percentages of N, P, K; manufactured fertilizer or animal manures?

- c. What is at least one advantage to using animal manure over manufactured fertilizers?

- d. What is a disadvantage of using animal manures over manufactured fertilizers?
