

# Landscape Fertilizers



Advanced Fertilizer Topics for  
Master Gardeners

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# Fertilizer Terms

- Fertilizers can contain one or more nutrients
- Most fertilizers are sold as **blends**
- The fertilizer **grade** is the % by weight of N, P & K
  - Example: 10-5-5 = 10% N, 5% P, 5% K
- A **complete** fertilizer contains N, P & K

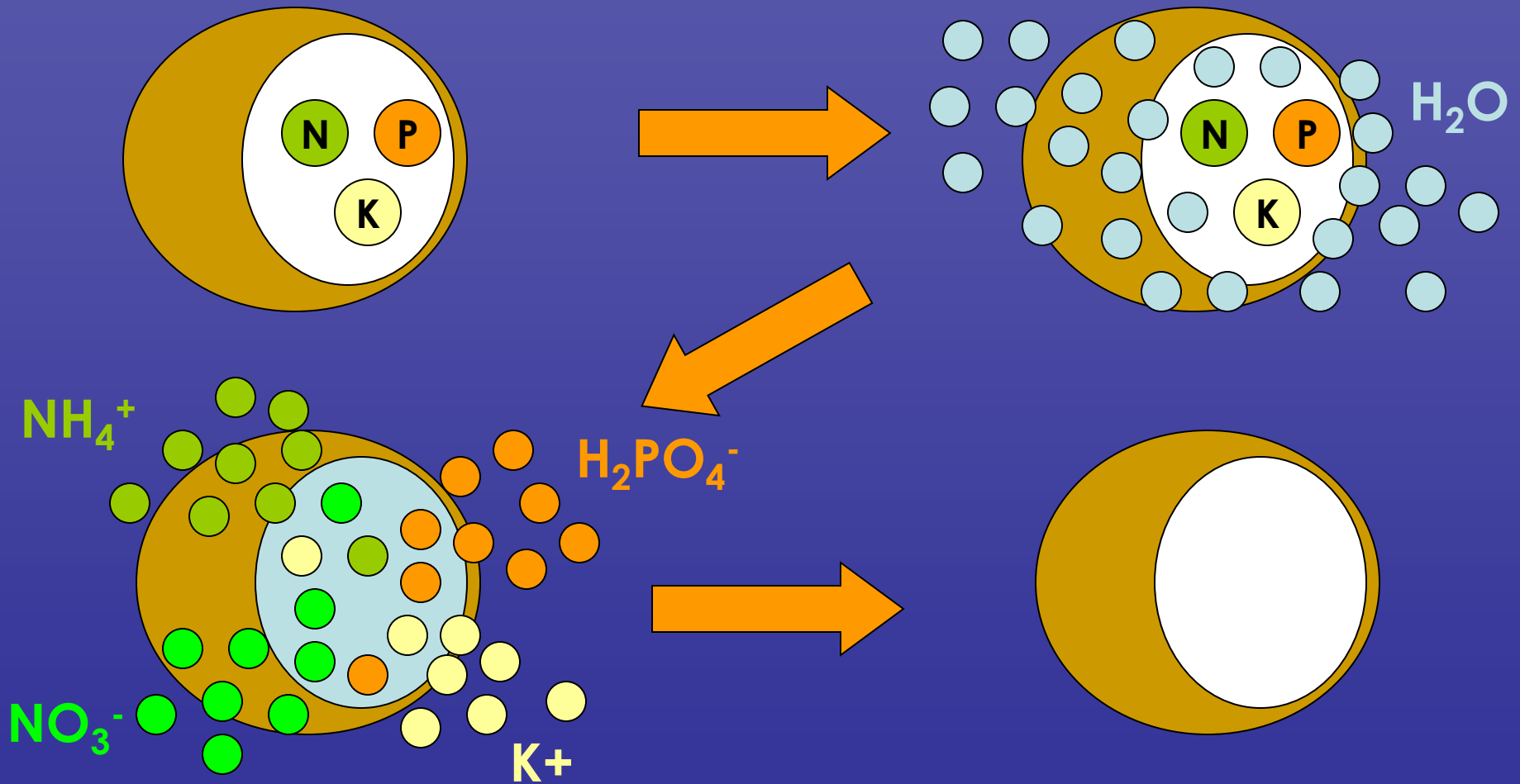
# Fertilizer Terms

- Variable physical & chemical properties
- Inorganic or Synthetic fertilizers - Mined or synthesized from inorganic materials
- Organic fertilizers - Derived solely from the remains or a by-product of an organism.

# Fertilizer Definitions

- **Water soluble:** Fertilizer material that will dissolve in water and are immediately available for uptake by plant roots.
  - The terms *water soluble* and *quick-release* are synonymous.
- **Slow- or controlled-release:** Fertilizers that will release nutrients slowly over a period of time.

# How Polymer Coated Fertilizers Work



# The Fertilizer Label

**Water Soluble All Purpose Plant Food 24-8-16**

**GUARANTEED ANALYSIS**

Total Nitrogen (N) .....	24%	Derived from Ammonium Sulfate, Potassium Phosphate, Potassium Chloride, Urea, Urea Phosphate, Boric Acid, Copper Sulfate, Iron EDTA, Manganese EDTA, Sodium Molybdate, and Zinc Sulfate. Information regarding the contents and levels of metals in this product is available on the internet at: <a href="http://www.regulatory-info-sc.com">http://www.regulatory-info-sc.com</a> .
3.5% Ammoniacal Nitrogen		
20.5% Urea Nitrogen		
Available Phosphate (P <sub>2</sub> O <sub>5</sub> ) .....	8%	
Soluble Potash (K <sub>2</sub> O) .....	16%	
Boron (B) .....	0.02%	
Copper (Cu) .....	0.07%	
0.07% Water Soluble Copper (Cu)		
Iron (Fe) .....	0.15%	
0.15% Chelated Iron (Fe)		
Manganese (Mn) .....	0.05%	
0.05% Chelated Manganese (Mn)		
Molybdenum (Mo) .....	0.0005%	
Zinc (Zn) .....	0.06%	
0.06% Water Soluble Zinc (Zn)		

- The fertilizer **ratio** is the relationship among the grade
  - A 10-5-5 fertilizer has a ratio of 2-1-1

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Available Phosphate (P <sub>2</sub> O <sub>5</sub> ) .....	8%	
Soluble Potash (K <sub>2</sub> O) .....	16%	<b>KEEP OUT OF REACH OF CHILDREN</b> <b>MANTENER FUERA DEL ALCANCE DE LOS NIÑOS</b>
Boron (B) .....	0.02%	
Copper (Cu) .....	0.07%	
0.07% Water Soluble Copper (Cu)		
Iron (Fe) .....	0.15%	
0.15% Chelated Iron (Fe)		
Manganese (Mn) .....	0.05%	
0.05% Chelated Manganese (Mn)		
Molybdenum (Mo) .....	0.0005%	
Zinc (Zn) .....	0.06%	
0.06% Water Soluble Zinc (Zn)		

3.5% ammonium  
+ 20.5% urea  

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24% total

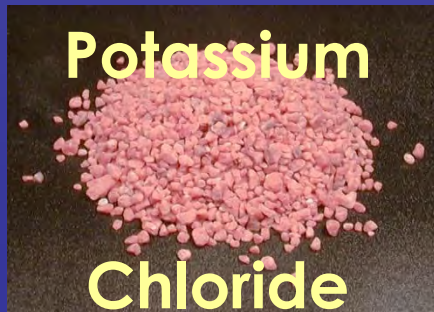


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0.15% Chelated Iron (Fe)		
Manganese (Mn) .....	0.05%	
0.05% Chelated Manganese (Mn)		
Molybdenum (Mo) .....	0.0005%	
Zinc (Zn) .....	0.06%	
0.06% Water Soluble Zinc (Zn)		





# Practice With More Labels

**GUARANTEED ANALYSIS:**

Total Nitrogen (N)* .....	18.0%
8.6% Ammoniacal Nitrogen	
9.4% Nitrate Nitrogen	
Available Phosphate (P <sub>2</sub> O <sub>5</sub> )* .....	6.0%
Soluble Potash (K <sub>2</sub> O)* .....	8.0%
Magnesium (Mg)* .....	1.2%
1.2% Water Soluble Magnesium (Mg)	
Boron (B)* .....	0.02%
Copper (Cu)* .....	0.05%
0.05% Water Soluble Copper (Cu)	
Iron (Fe)* .....	0.20%
0.20% Chelated Iron (Fe)	
Manganese (Mn)* .....	0.06%
0.06% Water Soluble Manganese (Mn)	
Molybdenum (Mo)* .....	0.02%

Derived from: Ammonium Nitrate, Ammonium Phosphates, Calcium Phosphate, Potassium Nitrate, Magnesium Sulfate, Sodium Borate, Copper Sulfate, Manganese Sulfate, Ferrous Ethylenediamine Tetraacetate, Sodium Molybdate.

F1130

\*The Nitrogen (N), Phosphorous (P<sub>2</sub>O<sub>5</sub>), Potassium (K<sub>2</sub>O), Magnesium (Mg), Boron (B) Copper (Cu), Iron (Fe), Manganese (Mn), Molybdenum (Mo) sources have been polymer resin coated to provide 18% coated slow release nitrogen, 6% coated slow release phosphorous, 8% coated slow release potash, 1.2% coated slow release magnesium, 0.02% coated slow release boron, 0.05% coated slow release copper, 0.20% coated slow release iron, 0.06% coated slow release manganese, 0.02% coated slow release molybdenum.

**WARNING:** This product contains Boron (B) and should be used according to directions only, especially on crops sensitive to Boron (B) uptake.

**GUARANTEED ANALYSIS 15-30-15**

Total Nitrogen (N).....	15.0%
11.7% Ammoniacal Nitrogen	
3.3% Urea Nitrogen*	
Available Phosphate (P <sub>2</sub> O <sub>5</sub> ).....	30.0%
Soluble Potash (K <sub>2</sub> O).....	15.0%

Derived from: Polymer-coated Urea, Diammonium Phosphate and Muriate of Potash.

\*3.3% Slowly available urea nitrogen from coated urea.

F 1074


**WHAT THE NUMBERS MEAN**

The 15-30-15 designation refers to the percentage of primary nutrients provided.

<p><b>15</b> NITROGEN (N) <i>Nitrogen (N) the Elemental Form Stimulates Growth &amp; Encourages A Thick Green Lawn</i></p>	<p><b>30</b> PHOSPHORUS (P) <i>Phosphate, the Oxide Form of Phosphorus (P) promotes blooming and stimulates early root formation while hastening maturity</i></p>	<p><b>15</b> POTASSIUM (K) <i>Potash, the Oxide Form of Potassium (K) Improves Plant Hardiness &amp; Drought Resistance</i></p>
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**COLORBURST® Flowering Plant Food** is the easy way to help all flowering and fruiting plants get the nutrients they need to flourish. When planting new plants or when feeding established ones, simply add the recommended amount of **COLORBURST® Flowering Plant Food** to your planting area and see the results.

**COLORBURST®** contains **POLYON®** timed-release nitrogen to provide a slow, gradual feeding for your plants needs. **POLYON®** timed-release nitrogen works differently from other slow-release products. **POLYON®** timed-release nitrogen releases in response to soil temperature rather than moisture level. Other slow-release formulas release nutrients according to the amount of moisture present in the soil... the more moisture, the quicker the nutrient release... putting your plants at risk from burning. Because **COLORBURST® Flowering Plant Food** contains **POLYON®** timed-release nitrogen, your plants are fed according to their needs right from the start!



# Soil Test Recommendations

Client Identification

Set Number: 2974 Lab Number: 54075

Crop: Woody orn / trees in the landscape

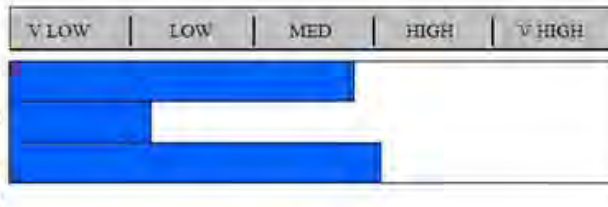
Report Date: 12-Feb-07

These interpretations and recommendations are based upon soil test results and research/experience with the specified crop under Florida's growing conditions. We do not test soil for N as there is no meaningful soil test for predicting N availability. Thus, the N recommendation was developed from research that measured response of the indicated crop to applied N fertilizer. If you expect significant nutrient release from organic sources such as crop residues or organic amendments, estimate the amount mineralized and subtract that amount from the fertilizer recommendations given below to arrive at crop needs.

## SOIL TEST RESULTS AND THEIR INTERPRETATIONS

Target pH: 6.0  
 pH (1:2 Sample:Water): 7.1  
 A-E Buffer Value: N/A

### MEHLICH-1 EXTRACTABLE



## LIME AND FERTILIZER RECOMMENDATIONS

Crop: Woody orn/trees in the landscape

Lime: 0.0 lbs per 1000 sq. ft (1 Ton = 2000 Lbs)

Nitrogen: 2.30 lbs per 1000 sq. ft.

Phosphorus: (P<sub>2</sub>O<sub>5</sub>) 0.40 lbs per 1000 sq. ft.

Potassium: (K<sub>2</sub>O) 1.40 lbs per 1000 sq. ft.

Footnotes are printed wherever applicable. These footnotes are an integral part of fertilization recommendations. Please read them carefully.  
 See Footnote(s): 650 653 654

Print Date: 14-Feb-07

Page 1 of 2

- Annual Recommendations (per 1000 sq. ft)
  - 2.3 lbs N
  - 0.4 lbs P<sub>2</sub>O<sub>5</sub>
  - 1.4 lbs K<sub>2</sub>O

# Apply N at 2.3 lb 1000 ft<sup>-2</sup>...

Fertilizer Grade (Ratio)	P Applied	P Surplus or Deficit	K Applied	K Surplus or Deficit
24-8-16 (3-1-2)	0.76 lb	+0.36 lb	1.15 lb	-0.25 lb
15-9-12 (1.67-1-1.33)	1.35 lb	+0.95 lb	1.76 lb	+0.36 lb
15-30-15 (1-2-1)	4.6 lb	+4.2 lb	2.3 lb	+0.9 lb
18-6-8 (3-1-1.33)	0.76 lb	+0.36 lb	1.76 lb	+0.36 lb
26-2-11 (13-1-5.5)	0.18 lb	-0.22 lb	0.42 lb	-0.98 lb

# What About Organic Fertilizers?

- Nitrogen is often slow release
- Microorganisms release nutrients during decomposition
- May contain micronutrients
- Typically low nutrient content



# Organic Fertilizer Labels

**Milorganite® 6-2-0 Classic**  
**Guaranteed Fertilizer Analysis**

Total Nitrogen (N).....	6.0%
0.75% Water Soluble Nitrogen	
5.25% Water Insoluble Nitrogen*	
Available Phosphate (P <sub>2</sub> O <sub>5</sub> ) .....	2.0%
Calcium (Ca).....	1.2%
Total Iron (Fe) .....	4.0%
Chlorine (Cl) maximum .....	1.0%
*5.25% Slowly available nitrogen	
Nutrients derived from: Biosolids (Activated Sewage Sludge)	
US	

<b>GUARANTEED ANALYSIS</b>	<b>12-0-0</b>
Total Nitrogen (N).....	12.0%
12.0% Water Insoluble Nitrogen*	
<b>Derived from:</b> Blood Meal.	
*Contains 12.0% slowly available organic nitrogen from blood meal.	
	<b>F1074</b>

# Summary

- Read the fertilizer label to help you make informed choices about fertilizers for your home landscape.
- Always follow UF-IFAS best management practices.
- Have your soil tested before applying fertilizers.

*Mention of trade names in this presentation is solely for providing specific information. It is not a guarantee or warranty of the products named, and does not signify that they are approved to the exclusion of others of suitable composition. Read and follow directions on the manufacturer's label.*