Reading and Analyzing your Fertilizer Bag

Dr. Cari Peters  Vice President  caripeters@jrpeterson.com
JR PETERS INC

Designer, Formulator, Producer and custom manufacturer of high quality fertilizer products.

“Hand’s on Horticulture”
A Family Tale In Plant Nutrition

The Peters family has come full circle in providing plant nutrition.

The Robert B. Peters Co. showed off its specialty fertilizers at The Ohio State University Short Course in 1953.
Unique blending facility located in Allentown PA
- Lean techniques used to maximize efficiency
- Highest Quality & Purity Raw Materials
  - Greenhouse grade / technical grade
  - Ensures best solubility & availability on the market
- Products made fresh
  - Quick order response time
  - Products produced and shipped as fast as 3-5 days
Peters Family System of Formulating

Over 70 Years of Lab testing tells us what plant’s respond to

Interaction with Growers & customers through the lab and on the phone

Proprietary system analyzes formula’s according to plant response.
JR Peters’ Fertilizer
The Quality Standard in Water Soluble Fertilizer

OUR PRODUCT LINES

Jack’s Pro
Jack’s LX
Jack’s FeED’s
Jack’s Classic
Jack’s Hydroponic
Oasis Hydroponic 16-4-17
Aqua Gold High Tunnel Fertilizers
Guaranteed Analysis

- Total nitrogen (N): 20%
- 0.94% ammoniacal nitrogen
- 11.96% nitrate nitrogen
- Available phosphate (PO₄): 3%
- Soluble potassium (K₂O): 1.9%
- Magnesium (Mg) total: 1.34%
- 1.34% water-soluble magnesium (Mg) total
- Boron (B): 0.02%
- Copper (Cu): 0.001%
- 0.01% chelated copper (Cu)
- Iron (Fe): 0.03%
- 0.20%
- 0.03% chelated iron (Fe)
- Manganese (Mn): 0.05%
- 0.05%
- 0.05% chelated manganese (Mn)
- Molybdenum (Mo): 0.01%
- Zinc (Zn): 0.001%
- 0.05%
- 0.05% chelated zinc (Zn)

Derived From: ammonium nitrate, ammonium sulfate, monopotassium phosphate, potassium nitrate, magnesium sulfate, boric acid, iron DTPA, iron EDDHA, iron EDTA, manganese EDTA, zinc EDTA, copper EDTA, ammonium molybdate

Name & Grade

20-3-19 Petunia FeED Plus Mg Water Soluble Fertilizer
(For Continuous Liquid Feed Programs)

CCE

Potential Acidity: 420 lb. Calcium carbonate equivalent per ton.

Mixing Instructions

<table>
<thead>
<tr>
<th>Desired N food rate</th>
<th>Injector Setting 1:15</th>
<th>Injector Setting 1:100</th>
<th>Injector Setting 1:200</th>
<th>E.C. value (in милливольт)</th>
</tr>
</thead>
<tbody>
<tr>
<td>50 ppm</td>
<td>0.50</td>
<td>3.28</td>
<td>6.75</td>
<td>0.32</td>
</tr>
<tr>
<td>100 ppm</td>
<td>1.00</td>
<td>6.75</td>
<td>13.50</td>
<td>0.64</td>
</tr>
<tr>
<td>200 ppm</td>
<td>2.00</td>
<td>13.50</td>
<td>27.00</td>
<td>1.28</td>
</tr>
</tbody>
</table>

Limit of Solubility = 4 lbs per gallon

Name & Address

Mfg. By JR Peters, Inc.
6656 Grant Way
Allentown, PA 18106
1-866-522-5752
www.jrpeters.com

Weight
While it is common to focus on the 3 big numbers of a fertilizers formula \((N, P_2O_5 \& K_2O)\), it is also important to examine the labels fine print.
Guaranteed Analysis

Derived From: ammonium nitrate, ammonium sulfate, monopotassium phosphate, potassium nitrate, magnesium sulfate, boric acid, iron DTPA, iron EDDHA, iron EDTA, manganese EDTA, zinc EDTA, copper EDTA, ammonium molybdate

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<th>Injector Setting</th>
<th>E.C. value (in mmhos)</th>
</tr>
</thead>
<tbody>
<tr>
<td>50 ppm</td>
<td>50</td>
<td>3.2</td>
</tr>
<tr>
<td>100 ppm</td>
<td>1.00</td>
<td>6.75</td>
</tr>
<tr>
<td>200 ppm</td>
<td>2.00</td>
<td>13.50</td>
</tr>
</tbody>
</table>

Limit of Solubility ~ 4 lbs per gallon

Name & Address

Mfg. By JR Peters, Inc.
6656 Grant Way
Allentown, PA 18106
1-866-522-5752
www.jrpeters.com
20-3-19
Petunia FeED
% N - % P$_2$O$_5$ – % K$_2$O

For Continuous Liquid Feed programs

P to P$_2$O$_5$ = multiply by 2.3
K to K$_2$O = multiply by 1.2
Nutrients do not exist as individual elements.

Ammonium Nitrate

What’s the other 58%

Ions are attached to other elements through chemical bonds.
<table>
<thead>
<tr>
<th>Nutrient</th>
<th>% in Tissue</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nitrogen</td>
<td>4%</td>
</tr>
<tr>
<td>Phosphorus</td>
<td>0.5 – 2%</td>
</tr>
<tr>
<td>Potassium</td>
<td>2 – 8 %</td>
</tr>
<tr>
<td>Calcium</td>
<td>2%</td>
</tr>
<tr>
<td>Magnesium</td>
<td>0.5 – 1%</td>
</tr>
<tr>
<td>Sulfur</td>
<td>1 – 2%</td>
</tr>
</tbody>
</table>

In a 25 lb bag of 20-20-20

- 5 lbs are from N sources
- 5 lbs are from P2O5 sources
- 5 lbs are from K2O sources
Example of plants that were fed when the injector was not pulling at the correct strength of fertilizer.
Low fertility affects plant marketability

Low fertility | Normal fertility

Used with permission from Cornell Univ. Dr. Neil Mattson
Healthy Roots ensures Nutrient Uptake
Guaranteed Analysis

F1313

- Total nitrogen (N) .......................................................... 20%
- 8.04% ammoniacal nitrogen
- 11.96% nitrate nitrogen
- Available phosphate (P2O5) ........................................... 3%
- Soluble potash (K2O) ...................................................... 19%

- Boron (B) ................................................................. 0.0200%
- Copper (Cu) .............................................................. 0.0100%
- 0.0100\% chelated copper (Cu)
- Iron (Fe) ................................................................. 0.2000%
- 0.2000\% chelated iron (Fe)
- Manganese (Mn) ........................................................ 0.0500%
- 0.0500\% chelated manganese (Mn)
- Molybdenum (Mo) ......................................................... 0.0100%
- Zinc (Zn) ................................................................. 0.0500%
- 0.0500\% chelated zinc (Zn)
Retail labels have some of the similar information usually on the back of the container.
Micronutrients

Required by plant in relatively small amounts

Availability largely controlled by pH

### Bedding Plants

<table>
<thead>
<tr>
<th>Nutrient</th>
<th>% in Tissue</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iron</td>
<td>.01 – 0.5%</td>
</tr>
<tr>
<td>Manganese</td>
<td>.01 – 0.3%</td>
</tr>
<tr>
<td>Copper</td>
<td>.009 – 0.2%</td>
</tr>
<tr>
<td>Zinc</td>
<td>.009 – 0.2%</td>
</tr>
<tr>
<td>Boron</td>
<td>.005 – .0175%</td>
</tr>
<tr>
<td>Molybdenum</td>
<td>.0002 – .005%</td>
</tr>
</tbody>
</table>
PETERS SOLUBLE FERTILIZERS

Peters Special Soluble Fertilizers are now used by more commercial growers of horticultural than any other brand. This wide acceptance by the professional growers is due, very probably, to the fact that the Peters Co. has gathered over the past 15 year period, during which time the soil-bor- rey of the Peters Co., has tested over 100,000 soil samples on actual commercial crops being grown.

All of this experience and know-how has been utilized to the fullest extent in the formulation of Peters Special formulas for the home-garden user. When you purchase a container of Peters Special fertilizer, you will find that its solubility is so complete that all of its nutrients are available to the soil's roots without delay. This will enable you to use the fertilizer without fear of it burning your plants.

1. EXCLUSIVE CHELATING FORMULA

Peters Special Soluble Fertilizers contain an exclusive chelating formula that will prevent precipitation or settling out of the fertilizer, nor will it clog or block the sprayer or irrigation line. This is particularly important in the home garden area where a spray or irrigation system is used.

2. TRACE ELEMENTS

All Peters Special Soluble Fertilizers contain all of the accepted elements as well as all of the trace elements in a perfectly balanced ratio for the best plant growth. With conventional type soluble fertilizers, some elements are not available to the plant because they are not in a form that can be readily absorbed by the roots.

3. COMPLETELY WATER SOLUBLE

At normal rates of application, Peters Special Soluble Fertilizers are completely water soluble and do not require any additional water to dissolve them. The complete water solubility of Peters Special Soluble Fertilizers is their biggest advantage over other fertilizers. By using Peters Special Soluble Fertilizers, you can be assured of a complete solubility that is not found in other fertilizers.

4. HIGHEST PURITY AND EXCLUSIVE BLEND

Only the highest grade technical materials are used in the formulation of Peters Special Soluble Fertilizers. Laboratory control over the manufacturing process ensures that the fertilizer is pure and contains all the nutrients that are necessary for plant growth. Peters Special Soluble Fertilizers are completely water soluble and do not require any additional water to dissolve them.

NITROGEN - SPURWAY

NITRATES (NO3) F E

PHOSPHORUS (P)

AMMONIUM (NH4) F E

POTASSIUM (K)

TOTAL AVAILABLE NITROGEN AS NITRATES (NO3), SPURWAY

0-25 ppm Too low, feed Nitrogen immediately.
25-50 ppm Your lawn will grow Nitrogen at 20 ppm.
50-60 ppm Good level, will take Nitrogen at 10 ppm.
60-100 ppm Excellent, enough for heavy use.
100-200 ppm High level, no feeding needed for 2 weeks.

TOTAL AVAILABLE NITROGEN AS NITRATES (NO3), SPURWAY

0-25 ppm Too low, feed Nitrogen immediately.
25-50 ppm Your lawn will grow Nitrogen at 20 ppm.
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The Evolution of Water Soluble fertilizers
1947-1962

- Peat-Lite Special formulations were introduced
  - High Nitrate
  - Higher trace element package
  - 15-16-17
  - 15-11-29
  - 1980 = 20-10-20 Peat-Lite
The micronutrient concentration in “Peat Lite” and “General Purpose” formulas expressed as percent (%) and parts per million (ppm).

<table>
<thead>
<tr>
<th>Fertilizer Formula</th>
<th>% B</th>
<th>% Cu</th>
<th>% Fe</th>
<th>% Mn</th>
<th>% Mo</th>
<th>% Zn</th>
</tr>
</thead>
<tbody>
<tr>
<td>20-20-20 GP</td>
<td>0.0068</td>
<td>0.0036</td>
<td>0.05</td>
<td>0.025</td>
<td>0.0009</td>
<td>0.0025</td>
</tr>
<tr>
<td>20-20-20 Peat-Lite</td>
<td>0.02</td>
<td>0.01</td>
<td>0.10</td>
<td>0.05</td>
<td>0.01</td>
<td>0.05</td>
</tr>
</tbody>
</table>

**PPM of Individual Nutrients in a 100 ppm N Total Nitrogen Solution**

<table>
<thead>
<tr>
<th>Fertilizer Formula</th>
<th>B</th>
<th>Cu</th>
<th>Fe</th>
<th>Mn</th>
<th>Mo</th>
<th>Zn</th>
</tr>
</thead>
<tbody>
<tr>
<td>20-20-20 GP</td>
<td>0.034</td>
<td>0.018</td>
<td>0.25</td>
<td>0.125</td>
<td>0.005</td>
<td>0.013</td>
</tr>
<tr>
<td>20-20-20 Peat-Lite</td>
<td>0.10</td>
<td>0.05</td>
<td>0.50</td>
<td>0.25</td>
<td>0.05</td>
<td>0.25</td>
</tr>
</tbody>
</table>
**Guaranteed Analysis**

<table>
<thead>
<tr>
<th>Nutrient</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total nitrogen (N)</td>
<td>20%</td>
</tr>
<tr>
<td>Ammonium nitrogen</td>
<td>0.04%</td>
</tr>
<tr>
<td>Nitrate nitrogen</td>
<td>11.9%</td>
</tr>
<tr>
<td>Available phosphate (P2O5)</td>
<td>3%</td>
</tr>
<tr>
<td>Soluble potash (K2O)</td>
<td>19%</td>
</tr>
<tr>
<td>Magnesium (Mg)</td>
<td>1.3400%</td>
</tr>
<tr>
<td>Water-soluble magnesium (Mg)</td>
<td>0.2000%</td>
</tr>
<tr>
<td>Boron (B)</td>
<td>0.0100%</td>
</tr>
<tr>
<td>Copper (Cu)</td>
<td>0.0100%</td>
</tr>
<tr>
<td>Chelated copper (Cu)</td>
<td>0.0100%</td>
</tr>
<tr>
<td>Iron (Fe)</td>
<td>0.0200%</td>
</tr>
<tr>
<td>Chelated iron (Fe)</td>
<td>0.0200%</td>
</tr>
<tr>
<td>Manganese (Mn)</td>
<td>0.0500%</td>
</tr>
<tr>
<td>Chelated manganese (Mn)</td>
<td>0.0500%</td>
</tr>
<tr>
<td>Molybdenum (Mo)</td>
<td>0.0100%</td>
</tr>
<tr>
<td>Zinc (Zn)</td>
<td>0.0100%</td>
</tr>
<tr>
<td>Chelated zinc (Zn)</td>
<td>0.0100%</td>
</tr>
</tbody>
</table>

**Derived From Statement**

Derived from: ammonium nitrate, ammonium sulfate, monopotassium phosphate, potassium nitrate, magnesium sulfate, boric acid, iron DTPA, iron EDDHA, iron EDTA, manganese EDTA, zinc EDTA, copper EDTA, ammonium molybdate

**Name & Grade**

*20-3-19 Petunia FeED Plus Mg Water Soluble Fertilizer (For Continuous Liquid Feed Programs)*

**CCE**

Potential Acidity: 420 lb. Calcium carbonate equivalent per ton.

**Mixing Instructions**

<table>
<thead>
<tr>
<th>Desired N (ppm)</th>
<th>Injector Setting</th>
<th>E.C. Value (mmhos)</th>
</tr>
</thead>
<tbody>
<tr>
<td>50 ppm</td>
<td>3.28</td>
<td>6.75</td>
</tr>
<tr>
<td>100 ppm</td>
<td>6.75</td>
<td>13.50</td>
</tr>
<tr>
<td>200 ppm</td>
<td>13.50</td>
<td>27.00</td>
</tr>
</tbody>
</table>

Limit of Solubility: 4 lbs per gallon
Manganese (Mn) .................................................. 0.0500%
 0.0500% chelated manganese
Molybdenum (Mo) ............................................. 0.0100%
Zinc (Zn) ...................................................... 0.0500%
 0.0500% chelated zinc

Derived from: ammonium nitrate, potassium phosphate, potassium nitrate, boric acid, magnesium sulfate, iron EDTA, manganese EDTA, zinc EDTA, copper EDTA, ammonium molybdate

Potential Acidity: 401 lb. Calcium carbonate equivalent per ton

Manufactured by: J.R. Peters, Inc., 6656 Grant Way, Allentown, PA 18106
  Toll Free: 1-866-522-5752

Derived from Statement
Calcium Carbonate Equivalent

Manganese (Mn) ................................................................. 0.0500%
  0.0500% chelated manganese
Molybdenum (Mo) ............................................................. 0.0100%
Zinc (Zn) ................................................................. 0.0500%
  0.0500% chelated zinc

Derived from: ammonium nitrate, potassium phosphate, potassium nitrate, boric acid, magnesium sulfate, iron EDTA, manganese EDTA, zinc EDTA, copper EDTA, ammonium molybdate

Potential Acidity: 401 lb. Calcium carbonate equivalent per ton

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Different formulas alter root zone pH

Formula's can be acidic, neutral or basic
Why is pH so important?

- pH effects nutrient solubility
- pH effects plant ability to take up nutrients
pH can Rise and Fall according to the Raw material choices

**Acidic Raw Materials:**
- Urea Phosphate
- Ammonium Nitrate
- Ammonium Phosphate

**Basic Raw Materials:**
- Calcium Nitrate
- Magnesium Nitrate
- Urea & Ammonium (NH4-N) results in pH decrease

- Nitrate (NO3-N) results in pH increase

Figure by Dr. Neil Mattson, Cornell University
Phosphorus Sources to lower pH

Extremely acidic when concentrated. Often chosen to help keep materials in solution without precipitating out.

- Urea phosphate
- Phosphoric acid compounds
Keeping Ca & Mag in Solution

At low solution pH all nutrients can be mixed in one concentration tank without forming precipitates!
Guaranteed Analysis

Total nitrogen (N) ........................................... 20%
0.04% ammoniacal nitrogen
11.9% nitrate nitrogen
Available phosphate (P2O5) ....................... 3%
Soluble potash (K2O) ................................. 1.9%
Magnesium (Mg), total .......................... 1.3400%
1.3400% water soluble magnesium (Mg)
Boron (B) .................................................. 0.0200%
Copper (Cu) .............................................. 0.0100%
0.0100% chelated copper (Cu)
Iron (Fe) .................................................. 0.2000%
0.2000% chelated iron (Fe)
Manganese (Mn) ..................................... 0.0500%
0.0500% chelated manganese (Mn)
Molybdenum (Mo) ................................. 0.0100%
Zinc (Zn) ................................................. 0.0100%
0.0500% chelated zinc (Zn)

Derived From: ammonium nitrate, ammonium sulfate, monopotassium phosphate, potassium nitrate, magnesium sulfate, boric acid, iron DTPA, iron EDDHA, iron EDTA, manganese EDTA, zinc EDTA, copper EDTA, ammonium molybdate

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(For Continuous Liquid Feed Programs)

CCE

Potential Acidity: 420 lb. Calcium carbonate equivalent per ton.

Mixing Instructions

<table>
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<tr>
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<th>Injector Setting 1:15</th>
<th>Injector Setting 1:100</th>
<th>Injector Setting 1:200</th>
<th>E.C. value (mmhos)</th>
</tr>
</thead>
<tbody>
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<td>50</td>
<td>3.28</td>
<td>6.75</td>
<td>3.2</td>
</tr>
<tr>
<td>100 ppm</td>
<td>1.00</td>
<td>6.75</td>
<td>13.50</td>
<td>6.4</td>
</tr>
<tr>
<td>200 ppm</td>
<td>2.00</td>
<td>13.50</td>
<td>27.00</td>
<td>1.28</td>
</tr>
</tbody>
</table>

Limit of Solubility = 4 lbs per gallon

Name & Address

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www.jrpeters.com
<table>
<thead>
<tr>
<th>Nutrient</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manganese (Mn)</td>
<td>0.0500%</td>
</tr>
<tr>
<td>0.0500% chelated manganese</td>
<td></td>
</tr>
<tr>
<td>Molybdenum (Mo)</td>
<td>0.0100%</td>
</tr>
<tr>
<td>Zinc (Zn)</td>
<td>0.0500%</td>
</tr>
<tr>
<td>0.0500% chelated zinc</td>
<td></td>
</tr>
</tbody>
</table>

Derived from: ammonium nitrate, potassium phosphate, potassium nitrate, boric acid, magnesium sulfate, iron EDTA, manganese EDTA, zinc EDTA, copper EDTA, ammonium molybdate

Potential Acidity: 401 lb. Calcium carbonate equivalent per ton

Manufactured by: J.R. Peters, Inc., 6656 Grant Way, Allentown, PA 18106
Toll Free: 1-866-522-5752
Calcium Carbonate Equivalent (CCE)

- Potentially Acidic
  - The lbs (#) of calcium carbonate to neutralize 1 ton of fertilizer

- Potentially Basic
  - the lbs (#) calcium carbonate contributed per ton of fertilizer

- Measure of potential influence over time

- Not ACTIVE acidity = how the fertilizer acts in water
  - Doesn’t change water pH except for ferts with citric acid or highly acidic raw materials (urea phos, or PK acid)
Potential Acidity or Basicity of Fertilizers

- Acidic
  - 1539 lbs: 21-7-7 Acid Special
  - 415 lbs: 21-5-20 All Purpose LX
  - 166 lbs: Geranium Special 15-15-15

- Neutral
  - 0 lbs: 17-4-17 Pure Water LX
  - 10 lbs 16-4-17 Hydroponic

- Basic
  - 78 lbs 15-5-15 Ca – Mg Lx
  - 319 lbs 15-0-15 Dark Weather
  - 319 lbs 13-2-13 Plug
Potentially acidic fertilizer + Increase Efficiency

25-5-15 High Performance
- Equal micronutrient delivery
- Higher N to increase use efficiency

- Increase in %N allows you to use 20% less fertilizer.
- Like using 4 bags instead of 5 compared to 20-10-20
Fertilizer Selection depends on your Water Quality

Finding your perfect formula match means understanding what beneficial ions and what harmful ions exist in your water source.
Water analysis and recommendations from

JR Peters Laboratory

- Free Water kits and instructions
- 24-48 hour turnaround time for water test results
- Personalized recommendations for the crop cycle on nutrient choices & grower set-ups
The Blue Stuff

JR PETERS INC
Specialty Crop Fertilizers

Petunia Feed 20-3-19

Poinsettia Feed 15-4-15 + Ca, Mg

Poinsettia Feed 17-5-19 + Mg

Fall Pansy Feed 17-3-19

Spring Pansy Feed 15-2-20

Mum Feed 22-5-16
<table>
<thead>
<tr>
<th>Form</th>
<th>% Iron</th>
<th>pH ranges</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fe EDTA</td>
<td>13%</td>
<td>Availability decreases above pH 6.3</td>
</tr>
<tr>
<td>Fe DTPA</td>
<td>11%</td>
<td>Availability decreases just above pH 7</td>
</tr>
<tr>
<td>Fe EDDHA</td>
<td>6%</td>
<td>100% available between pH 4-9</td>
</tr>
</tbody>
</table>

Each product contains increased levels of iron, derived from three chelate sources (EDDHA, EDTA and DTPA) to keep it available over a wide range of pH values.
Mixing Instructions

<table>
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<th>Desired N feed rate</th>
<th>Injector Setting</th>
<th>E.C. value (mmhos)</th>
</tr>
</thead>
<tbody>
<tr>
<td>50 ppm</td>
<td>1:15</td>
<td>.50</td>
</tr>
<tr>
<td></td>
<td>1:100</td>
<td>3.38</td>
</tr>
<tr>
<td></td>
<td>1:200</td>
<td>6.75</td>
</tr>
<tr>
<td>100 ppm</td>
<td>1:15</td>
<td>1.00</td>
</tr>
<tr>
<td></td>
<td>1:100</td>
<td>6.75</td>
</tr>
<tr>
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<td>13.50</td>
</tr>
<tr>
<td></td>
<td>1:200</td>
<td>27.00</td>
</tr>
</tbody>
</table>

Limit of Solubility = 4 lbs per gallon
Mixing mistakes

Fe
Ca++
Mg++
Fe+P
Ca+P
Mg+P
Mixing Mishaps

- Materials that cannot be mixed in concentrate

- Calcium – Sulfur
  - CaNO₃ with Epsom salts, sulfate micros, battery acid

- Calcium – Phosphorus
  - 20-20-20 with 15-5-15 in concentrate
  - Exception when using materials that lower pH
  - Urea phosphate, citric acid.
A Few Words about Dye

Indicator that solution contains fertilizer – not a way to determine strength of the solution

- Factors that can affect color of the fertilizer in the bag
  - Raw materials
  - Environmental conditions when made
  - Age of Product
  - Transportation and storage of product

- Best way to monitor strength of solution = EC
If it costs less is it a better deal?

Urea can be ok?

- A less expensive form of Nitrogen
- When used in the right balance with other forms of N it can be ok
- Urea is easier on plant uptake when used in the warmer temps.
- Less potential to damage root zone

Stay away from

- Muriates (Chlorides)
  - Excess Cl competes with NO3 in the root zone
- Soda (Sodium)
  - Excess Na competes with Ca, Mg and K
- Agricultural Grade materials
  - Higher grade raw materials are the most soluble – look for technical grade

Micronutrients

- Sulfated versions of micronutrients are soluble when used at the right pH range (5 – 6.0)
- Chelated versions of Micros are more stable over a larger range of pH (5 – 6.5+)
  - May be more expensive

Derived from: ammonium nitrate, potassium phosphate, potassium nitrate, boric acid, magnesium sulfate, iron EDTA, manganese EDTA, zinc EDTA, copper EDTA, ammonium molybdate

Potential Acidity: 401 lb. Calcium carbonate equivalent per ton
JR Peters takes pride in our family reputation

Innovative products and blends that are on the cutting edge of fertilizer technology
Retail line only available to independent garden centers

Same high quality ingredients as Jack’s Professional

Professional chelated micronutrients essential for performance in the garden
Sunny Season Produce – designed for warm season fruit and vegetable crops grown in the field or high tunnels

- 15-20-28 Grow & Bloom
- Low Phos Grower 21-8-18
- Finisher 7-15-30

Proven yield increases over standard traditional agricultural fertilizers
Hydro FeED Complete Formulas
  - Part A and B Systems

Hydro Boost
  - Easy to use supplements

Oasis Hydroponic 16-4-17
  - 1 bag formula for rapid successful propagation of lettuce and herbs

1kg & 25 lb bag sizes
The Science behind BETTER Plant Performance
Three Generations of Peters marking 68 years of producing the highest quality fertilizers!

Dr. Cari Peters
Vice President
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JRPetersInc