

# Knowledge for Giant Pumpkin & Watermelon Growers

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*If the water extracted pH is less than 6.7, add 10 pounds of lime per 1000 sq. ft. If the pH is greater than 6.7 and the Ca is less than 2400 ppm, add 5 pounds gypsum. It takes up to 7 years for lime to completely dissolve. Don't expect rapid increase in pH. Remember: You're only treating the top 6 inches with lime. Gypsum will go into solution in the first year.*

## Fertilizer Recommendations:

### Phosphorus (P)

The lab suggests 2 pounds of Phosphorus per 1000 sq. ft. 11-52-0 Ammonium Phosphate is a common Phosphorous fertilizer and it contains 3% sulfur. Take the 2-pound recommendation and divide by .52 (% P in 11-52) and you get 3.88 pounds 11-52. The problem is the recommendation is P and 11-52 is Phosphate. You now need to multiply the 3.85 by 2.3. You will get 8.86 pounds of 11-52 per 1000 to get the 2-pound P recommendations.

### Nitrogen (N)

The lab recommended 3.5 pounds of Nitrogen per 1000 sq., but you should only to apply ½ pre-plant. So,  $3.5/2=1.75$  pound of N. There is 11% N in the 11-52 so take 8.86 pounds of 11-52 applied and multiply it by .11 ( $8.86 \times .11$ ) you get 0.97 pounds of Nitrogen. You are going to apply 1.75 pounds Nitrogen pre-plant, so  $1.75-0.97=0.78$  pounds N. Your pH is above 7 so you are going to use ammonium sulfate (21-0-0-24). Ammonium Sulfate contains 21% N so  $0.78/.21=3.7$  pounds Ammonium Sulfate and with the Nitrogen in the 11-52, you have 1.75 pounds Nitrogen pre-plant.

### Potassium (K)

The lab recommends 5 pounds Potassium per 1000 sq. ft. The best source for pre-plant K is 0-0-50 Potassium Sulfate. The K in 0-0-50 is K<sub>2</sub>O, not K. So  $50/1.2=K$  in 0-0-50 (42% K). You will need to apply 12 lbs. 0-0-50 to get 5 lbs. per 1,000 sq. ft.

- \* During midseason, if you notice marginal burning, add 2 pounds of 0-0-60 Potassium Chloride per 1000 sq. ft. and thoroughly water with overhead irrigation.

***Potassium was the biggest deficiency from midseason on for Ron Wallace when he hit the 2,009-pound giant pumpkin.***

### Sulfur (S)

All products suggested contain Sulfur. There is no need to add more.

### Magnesium (Mg)

The lab recommends 0.7 pounds of Magnesium. Epsom Salt is the easiest to find and it contains 10% Mg.  $0.7 \text{ pounds} / 0.1 = 7 \text{ pounds}$  Epsom Salt to apply per 1000 sq. ft. When burying the vines, always add  $\frac{1}{2}$  teaspoon of Epsom Salt. Be sure to thoroughly mix. When drenching, add  $\frac{1}{2}$  teaspoon Epsom Salt to the drench. During midseason, if you see mottling and blistering, foliar spray 1 teaspoon per plant twice a week. If you can find the product Kmag, this would satisfy the K, Mg and S needs. Add 1 teaspoon to foliar or drench per week per plant.

### Calcium (Ca)

If you are having blossom end rot or collapsing of the pumpkin, it's generally related to Calcium, Boron and Potassium. After pollination, when you're burying the vines; add 1 heaping teaspoon Gypsum, 1 level teaspoon 0-0-50 and  $\frac{1}{2}$  teaspoon borax each time. Don't forget to thoroughly mix with your mycorrhiza, peat moss and other secret amendments. Also, don't forget Taberna's Secret Formula to stimulate bacteria and beneficial fungal growth: 2 cans of beer, 2 multivitamins, 2 aspirins, then pee in the hole after waiting an hour. This is a man's thing that naturally occurs in the backyard, so if you are a gal raising giants... put your significant other to work!

### Micronutrients

When pre planting, it's best to use Metallic Sulfate materials. It's been found that sulfated forms of micronutrients retard onset fungal diseases.

### Zinc (Zn)

The lab recommends 2 oz. of Zinc per 1000 and you are using Zinc Sulfate which contains 36% of Zn.  $2 / .36 = 5.6 \text{ ounces}$  Zn to apply per 1000.

### Manganese (Mn)

The lab recommends 1.5 oz. of Manganese. Manganese Sulfate is 24% Mn.  $1.5 / .24 = 6.3 \text{ oz.}$  per 1000.

### Copper (Cu)

The lab recommends .7 Copper. Copper Sulfate contains 25% Cu.  $0.7 / .25 = 2.8 \text{ oz.}$  Copper Sulfate per 1000.

### Boron (B)

If Boron is recommended, it's best to foliar or drench with 1 tablespoon of Borax. When burying the vine, don't go over  $\frac{1}{2}$  tablespoon of Borax.

*In season when you're applying micronutrients, use chelated products. Some examples are amino acid chelates, or citric acid chelates. I suggest buying individually and not taking the shotgun approach. Fancy EDTA materials are fantastic but very poor for foliar application. EDTA is stable at any pH for 2 months in soil. These materials are prone to leeching. Giant pumpkin and melon growers tend to water heavily and may leach expensive chelated below the effective root zone. The amino acid and citric acids are readily absorbed by plant tissue. It also wouldn't hurt to add 1-teaspoon product to vine burial mix.*

## Soil Report on 1S (Soil Solution):

Test 1 is a complete soil test using Western University's extraction methods. These methods are designed for Western soils that mostly tend to have pH's greater than 7. These methods were developed by Colorado State.

Giant pumpkin and watermelon growers have the best results with a soil pH between 7.2-7.8. The Soil Solution test emulates exudates that are given off by the plant roots to stimulate bacteria and fungi to release nutrients into the Soil Solution.

Roots only obtain nutrients from the Soil Solution. The complete soil test (Test 75) measures the extractable nutrients that is potential to the roots, Soil Solution testing (Test 75S) measures the nutrients the roots can see.

The soil solution gives you a heads up for problems in season. In the left column are the answers from the previous page. On the right are the Soil Solution test numbers that are available to the roots from the extractable nutrients.

When you see recommendations, it indicates these nutrients could be your limiting factors preventing you from maximum weight and quality from your fertilizer program. Remember plants get their oxygen from the roots. Oxygen must be present for most nutrients to be assimilated by roots. **KNOW YOUR WATER**

The numbers in the **SHOULD BE** column are higher than during the growing season because there are no roots present giving off organic acids. They are as follows:

<b>ELEMENT:</b>	<b>SHOULD BE:</b>
Phosphorus (P)	2 lbs.
Potassium (K)	15 lbs.
Calcium (Ca)	9 lbs.
Magnesium (Mg)	2 lbs.
Zinc (Zn)	85 g
Copper	56 g
Manganese (Mn)	85 g
Boron (B)	28 g

### Pounds in Soil Solution

During growing season to get a pumpkin greater than 2500 pounds and watermelon greater than 250 pounds the following must be in the Soil Solution

Nitrogen- decreases to 3 pounds by August 10

Phosphorus: >2 all season

Potassium: > 8 all season

Sulfur: >1 all season

Calcium: >3 all season

Magnesium: >1 all season

### Grams in Soil Solution

Zinc: >80 all season

Manganese: >50 all season

Copper: >15 all season

Boron: >28 all season

Iron is generally not an issue if you use acid residue fertilizers.



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Program Pre-Paid Discount	<u>-\$316.00</u>
<b>PROGRAM TOTAL</b>	<b>\$325.00</b>

**Please Submit Payment With 1<sup>st</sup> Sample**

Sample Collection Schedule: July 1<sup>st</sup>, July 15<sup>th</sup>, August 1<sup>st</sup>, August 15<sup>th</sup>, & September 1<sup>st</sup>.

**INDIVIDUAL PRICES**

Complete Soil	50.00	Tissue Test	44.00
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