

# Soil Drainage: The key to a successful Giant

By: Ron Wallace

As we are all well aware, pumpkin plant roots must breathe. Oxygen is necessary for plant growth and nutrient absorption through the mineralization and breakdown of organic matter.

Roots get oxygen from the air that fills voids between soil particles called pores. When soils retain too much water, or restrict movement, the result can be root suffocation, leading to root death.

A good well-drained soil has about half its volume in actual soil solids; the other half is air space. If your soil seems to stay wet for long periods of time, it could be for several possible reasons. Including:

High water table

Soil compaction

Clay soil

Hardpan, Caused by many years of plowing the same land. This layer can be 10-12 inches below the surface. (Usually the depth of the bottom of the plow.)

How to do a basic drainage test:

Dig a hole about 1-ft deep. Fill with water and allow it to drain completely. Immediately refill the hole and measure the depth of the water with a ruler. 15 minutes later, measure the drop in water in inches, and multiply by 4 to calculate how much water drains in an hour.

Less than 1-inch per hour is poor drainage. 1-6 inches of drainage per hour is normal for most soils. Soils that drain more than 6-inches per hour may need additional compost and amendments.

Things you can do to improve soil drainage:

**Add organic matter:** If you are trying to get a heavy soil to drain better or a sandy soil to retain water and nutrients organic matter is the key ingredient. Remember if using finished compost, it is necessary to have it tested before adding it directly to the soil. Improperly made composts can lead to many disease problems. You also want to make sure your compost pH is in line with your soil. Depending on the time of application, you could also add (depending on your soil) Grass clippings, mulched leaves, peat moss and well rotted manure to your soil. If you have a heavy clay soil do not add SAND. Sand and clay mixed together make cement!

**Make raised beds:** Fred Macari from Greene RI has successfully grown pumpkins over 1,300 pounds in raised beds. The

drainage possibilities in a raised patch are obvious, but making sure that the plants do not dry out requires a well mulched soil and a little extra care. Timers for periodic watering can help raised bed patches stay watered.

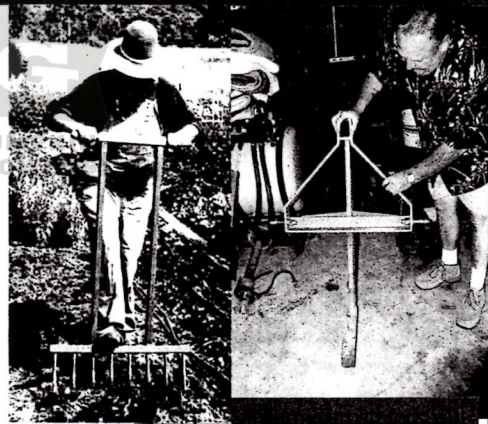
**Subsoiling:** If your garden is compacted from man made problems i.e. excessive tillage, heavy equipment ECT. You can purchase a single shank subsoiler for around \$150. Hooked up to the



back of a tractor, this subsoiler will break up any hardpan compacted layers.

**Drainage tiles:** If your soil drains so poorly that the above-mentioned ways are not practical or

will not work, you can also add drainage tiles to the bottom of your patch. Some growers have successfully buried large 4" diameter PVC pipes with lots of holes in them, about 18" underground, and were able to drain excess water to a hold or lower ground level off to the side of the patch.





# Tissue testing: How to, when and why

By Ron Wallace

As the evolution of our hobby continues, much is now known about soil nutrient levels and what we should strive for when building a soil. On the contrary we have very little information on "in season" tissue testing. In the beginning there was not enough soil test results for our specific crop (giant pumpkins). Remember a soil lab bases it's averages and recommendations on what the lab usually sees for results. The University of Massachusetts is the local lab of choice here in New England. Over time they have seen enough results from our patches that they are now better suited to give recommendations based on our crop needs. If we are going to continue with taking our hobby to the next level, it is in my opinion that we need to obtain a larger database on tissue tests and educate ourselves on what to do with the results.

## Why tissue test?

One of the questions I often hear when looking at a soil test versus a tissue test is: "I have plenty of that nutrient in my soil, so why does the tissue test indicate I have a problem?" A soil analysis indicates the relative availability of nutrients in the soil for crop use. Plant tissue analysis will let us know what nutrients have been or are being absorbed by the plant. Later in this article I will show an example of the tissue test results from our patch last year. Another question I hear regarding tissue testing is "My plants look great and are right on schedule, it looks like they need nothing". Growing vines to support your pumpkin is one thing, but that can all change when the pumpkin starts the "sink effect" on the plant. Growing 20-40 pounds a day will put undo stress on your pumpkin plant. Combine that with environmental effects and you have a good recipe for disaster. As we are well aware a weak plant can lead, to not only a smaller pumpkin, but invite disease problems as well. Ever notice that most of the problems associated with our plants/pumpkins happen during peak growth? You can also encounter "Hidden Hunger" This is when your plant will show no visual symptoms of a deficiency, but will have a direct outcome on your final weight.

## How and when to sample:

Samples need to be taken prior to fruit set (late June till the end of the first week in July). If there are no noticeable problems, I will take 10-20 leaves from our patch. The leaves sampled need to be the ones near the end of the growing tip of the plant (main vine). Leaf size at this stage is usually twice the size of my hand. If I notice a plant that is lagging and showing signs of weakness, I will test that plant separately from the rest. When removing the leaves make sure you have a sharp sanitized knife. I use rubbing alcohol to sanitize between cuts.

After cutting, rinse the leaves thoroughly with cool tap water to remove any chemicals, fertilizers and soil particles. Then place them on clean paper, to air-dry. Once dried carefully place leaves in a paper bag and send next day mail to your plant tissue-testing lab. Be careful when packaging not to contaminate the leaves with any foreign material. Most tissue labs have a questionnaire you can print on-line and return with your sample. Tissue analysis with nitrogen costs \$20.00 at the University of Massachusetts. When comparing our 2006 and 2007 tissue test results, the glaring difference on the results is our uptake of calcium; and to a lesser extent Magnesium (Mn) and Manganese (Mg).

<http://www.umass.edu/plsoils/soiltest/>. The University of Massachusetts sufficiency range for pumpkins is as follows:

Macro-nutrients	Micro-nutrients	Knowing our soil contains about 2800 ppm on Calcium, there was a problem as to why the plant was not taking it up at a sufficient level. I first thought of all the lime we had to use in 06 to correct our new soil. Could this be the reason for the 06 increased amounts of calcium and magnesium? We also have a
%	ppm	
N 4.00-6.00	Fe 50-200	
P 0.60-0.70	Mn 50-250	
K 3.00-5.00	B 25-75	
Ca 1.20-2.50	Cu 7-25	
Mg 0.30-2.50	Zn 20-200	

problem in New England with low levels of manganese, so this was nothing new to me. So why such a change from

2006 Wallace Patch	
Tissue Test Results	
N 4.30	Fe 175
P 0.71	Mn 139
K 4.54	B 35
Ca 5.86	Cu 13
Mg 1.28	Zn 58

2007 Wallace Patch	
Tissue Test Results	
N 4.84	Fe 192
P 0.76	Mn 28
K 4.85	B 27
Ca 0.46	Cu 8
Mg 0.34	Zn 48

2006? In our SNGPG December newsletter I explained how we subsoiled a bit deeper in the spring of 07 than we did in 06. That extra 6-inches or so brought up some clay. Our soil base is mostly sandy loam. When you mix clay and sand together, you get cement!

By the time we had noticed our soil was a bit compacted (Late May) I started the argues task of breaking up the compacted clods by using a pitch fork and inserting it into the soil at approximately 8-inches and pulling backwards, breaking up any compaction. The clods were big, weighing more than 5 pounds or so. You could actually see the layer of sand and clay. The soil clods texture was also sticky. Not a very good soil structure for nutrient recycling. I had to do this several times, to aerate the soil. After a few weeks, you could start to see the results. The breaking of the "crust" allowed the soil to aerate and break down to resemble its look and texture of 06. This compaction led to our poor calcium and nutrient movement within the vascular system of our plant. It no doubt had a big effect on our 07 results, as I feel we left some considerable "weight on the table".

In conclusion: are the sufficiency ranges listed for pumpkins sufficient enough for our usage? I would tend to think no. As I mentioned earlier, we are at the infancy stage of tissue testing and we simply need more results to draw a conclusion as to what is "enough". It would have been very interesting to see results from the Jutras, Young and McKie plants last year. If you decide to tissue test in 08, please feel free to send me the results at years end, at 860 Plainfield Pike; Greene, RI 02827. Collecting this data along with the weight of your pumpkin may reveal one more "cog in the wheel" towards 2,000 pounds!



## A New World Record of 126.5" 2006 Long Gourd Season

I remember the first time I had seen a long gourd. It was about 12 years ago at Pezza Farm and Garden Center. They had some gourds from Italy that were drying out and had packets of seeds for sale. I was amazed at how big they were and decided to try growing them in our garden. We managed to grow some that were about 3' to 4' long and used them for fall decorations that year.

I went to the NEPGA summer picnic tour two years ago and saw how long gourds should be grown. There were long gourds hanging from a trellis at Bob Duffy's patch, nice and long and straight. I thought I would like to try growing them like that.

At the winter seminar in Ontario, Canada, I sought out Al Eaton for information. Al had been growing long gourds and I knew he could get me started. He was more than happy to give me some seeds and some tips on how to grow them. He explained how growing long gourds are much less time consuming than growing pumpkins. They need very little room to grow and you are not constantly burying vines and weeding. Al mentioned that germinating long gourd seeds may be a little bit harder than pumpkins and gave me some "practice" seeds to try first. I cut the very tip off, filed the edges and soaked them overnight in warm water. I placed them in a damp paper towel and placed them in a plastic bag in an 80 degree cabinet for three days. At that point you could see a small root starting to protrude from the seed. I placed them in 8" pots and set them on a warming mat. In three days they were up.

My soil prep was done in early April in an old 20' x 20' vegetable garden that I hadn't used in about 4 years. I added 2 yards of cow manure, 2 yards of compost, one bag of gypsum and ½ bag of lime in a raised bed about 12' long and 4' wide at the edge of the garden. I put ½ cup each of mycorrhizal fungi and dry blood in a 2' radius on each planting hole. They received a foliar spray of seaweed and a soil drench of Neptune Harvest Fish and Seaweed weekly. My spraying schedule was the same as my pumpkins.

I started my seeds on the first of May and put them in my pumpkin greenhouse soon after they were up. I transplanted them in the garden in early June and left them in a greenhouse throughout the month of June. My son and I built the trellis on the 4<sup>th</sup> of July. We used 12' long 2 x 4's for legs 46" on center and 12' long 2 x 6's for rafters. We stapled 4' wide 6"x 6" cattle fencing up one side and over the top of the trellis. Our finished trellis

was 12' x 12' x 12' which supported 3 long gourd plants. By now our plants were 6' to 7' long and growing very fast. By the end of July they completely covered the trellis. They were 25 feet long and were 100 sq. each. I pruned them to four feet wide. I started to pollinate the gourds.

Long gourds flower at night covering the trellis with hundreds of white flowers. I hand pollinated at around 9 p.m. with a miners' flashlight strapped to my forehead. That way I have both hands free to do my pollinating as I stood on a 6' step ladder. By holding the female long gourd flower upright, I gently tapped some pollen grains onto the stigmas. I had 100% pollination rate and by the second week in August started to cull to the 5 best growing gourds which were about 3' long at that time.



My wife and I went out to southern Oregon to the PGVG summer patch tour and had a great time. Seeing all the growers and their patches was a great experience. What a beautiful part of the country. I would like to thank my very good friend Steve Sperry for taking care of my pumpkins and long gourds while we were away. The gourds must have grown 30 to 42 inches the week we were gone!

As the long gourds started to get heavy, I realized that I needed to support them. I learned this the hard way one night when I heard a thump while working in the pumpkin patch. One of the gourds had broken off the trellis. I tied the rest of them around the top with some old nylon hosiery fastened to the trellis. I placed pieces of garden hose around the wire above the gourds to keep the wire trellis from cutting them. When the gourds were about 8' long, I drove stakes into the ground on either side of each gourd, placed foam padding and tied the gourd to the stakes to keep it from swaying. We measured daily from about three weeks on, and when they stopped growing, we harvested them.

Before we cut the gourd off the vine, I made a support board from two pieces of wood 1"x4" x 11" long screwed together at a 90 degree angle. We stood it up against the gourd and used stretch rap tape to hold it firmly to the boards. Then I cut the stem. What a relief to get it down in one piece!

I would like to encourage anyone who enjoys gardening to someday give long gourds a try. I think you will be truly amazed at how much fun they can be. There is a great article about growing long gourds by John and Chris Lyons that is a must read. You can find it on the GVGO web site. I would like to thank them for all the info. It certainly was a great help to me!

Joe Jutras



# Organic Gardening and Giant Pumpkins

By: Matt DeBacco

## Matt Bio

*About the author: Matthew DeBacco (age 23) lives in Rocky Hill Connecticut, and has been a member and contributing writer for the CTGSPGA and SNGPG for many years. He has been growing Giant Pumpkins for 6 years. He graduated with a Bachelor of Science degree in Pathobiology and Horticulture at University of Connecticut, and is currently studying for a Masters Degree in Agronomy at UConn. Matt is also a new SNGPG Director. Welcome to the group Matt!*

Growing in a large scale pumpkin field is a great way to try out some organic methods because there will be high pressure from insects and disease. A problem that I personally had was that it was a 53 minute commute to a field that had no water or electricity. Knowing that the common pests were going to be present, a plan for organic control was developed.

### Insects:

Typically the Cucumber beetles are the first to make their appearance, but the exact timing can be variable. So, yellow sticky traps were set up around the plants paying careful attention to the plants at the edge of the growing area. The main goal of this was to develop a system for monitoring. It is possible to purchase yellow sticky traps that come in 50' rolls to put around your entire plant, but 2 ft. sections of this roll were used at a time and changed out as needed.

Then there is the dreaded SVB (Squash Vine Borer), which is commonly treated with systemic insecticides. But after doing some research and talking with a state Extension Educator, I experimented with pheromone traps. These are not recommended for control, but I made sure their potential effectiveness was maximized. First, since this was only a field trial for a proof of concept, one trap was placed at each end of the rectangular test plot. The theory was that this is where the SVB should enter. Second, mounting height, which should be at plant height, is important. If the trap is too high or too low the effectiveness of the trap will be decreased. Third is to make sure the pheromone impregnated rubber is fresh. The lure should last 4 weeks but make sure to not let it run out. The only problem noticed was when a new lure was put in, a few non-target bees were caught for the first few days. Using two traps, 12 SVB were caught, in 4 weeks.



To order one of these traps go to [www.greatlakesipm.com](http://www.greatlakesipm.com)

Then go to Insect Traps, then to Universal Moth Trap.

Garlic Barrier was used as a deterrent, but the sticky traps were used to determine its effectiveness. While this seemed to help, the results were not as strong as I have heard from other growers. But it is a product I plan on using next year.

Another product that I used for insect control, called Organocide, contains sesame oil and fish oil. I further enhanced the effectiveness of this product by adding a pyrethrin that is OMRI approved, called Py-Ganic, which is an organic botanical extract from the chrysanthemum. It is provided by Fertrell Organic Fertilizers [www.fertrell.com](http://www.fertrell.com). Some studies showed that when pyrethrins are added to sesame seed oil a synergistic effect occurs.

When this mixture was used, the degree of insect control seemed the greatest. With the OMRI pyrethrin used, it is important to remember that it breaks down quickly, which results in a low residual effect.

### Fungi:

I experimented with Serenade® MAX, a beneficial form of *Bacillus subtilis* (QST 713 Strain). However the results were not that impressive. I rotated with Sonota®, which has *Bacillus pumilus* (QST 2808 strain) as its active ingredient, but again I think the overall effect was minimal. What I think really helped, especially for powdery mildew control, was 40% diluted milk alternated with Compost Tea applications. Each treatment was on a 7-10 day spray schedule.

The compost tea brew consisted of Alaskan Humus and Worm Castings as the source of microbes. For a food source, a combination of Soil-Soup's nutrient solution, liquid fish, Joel Hollands Kelp, and a Fulvic/Humic acid product called TurfPro was used.

### Nutrients:

The fertilizer program is in-line with most other growers, except my fish oil was the major ingredient (92%) in my Organocide product, which also has insecticidal as well as anti-fungal properties to it. (Due to the Sesame seed oil). Water soluble kelp was used, along with some Vigor-Cal from the Agro-K program. Some nutrients also came from the compost tea, and the roots were inoculated with mycorrhizae to improve establishment as well as nutrient uptake. The above is a result of a combination of research and field trials over this past year. As the season went on, modifications were

made and hopefully, a more effective program was developed and presented above.





# What you should know about Leaf Compost and Giant Pumpkins



Giant pumpkins need a source of nutritional intake all season long. And we have found that the following organic supplement in the soil is an excellent way to keep the plants in your patch viable, for optimized root structure, and maximizing growth potential of your giant pumpkin, long gourd, or any fruit/vegetable.

And believe it or not, this stuff is available almost for free in your own back yard, or your town composting area. Its called Leaf Compost. Some SNGPG growers have seen town leaf compost piles up to 20 ft wide x 100 ft long by 15 ft high. Usually an even trade can be worked out at these town piles. Bring in your old branches, clippings, or bags of leaves to the Town Composting area, and whatever leaf compost you can shovel out is yours.

If you don't take advantage of these kinds of deals, the town or city will sell it to large companies, who haul it out, pasteurize (or cook it), bag it, and sell it back to you at a huge profit, at stores like Lowes, Home Depot, and Wal-Mart Garden Centers.



This 2 year old Leaf Compost Pile in Easton, MA was tested at U-Mass and found to be very high in P, K, Ca, Mg and nitrates.

As everyone is well aware the organic matter in your soil is very important. It influences the physical condition of the soil, water holding capacity, and temperature of the soil and especially the soil bacterial process, in the Rhizosphere, which affects the availability of minerals and nutrients to your Giant Pumpkin.

**Why compost the Leaves** If newly fallen leaves are added directly to the soil, without first being composted, the microbes that decompose the leaves, compete with the plants in your patch for soil nitrogen. The temporary nitrogen shortage caused by the microbes can reduce plant growth. To eliminate this competition for nitrogen, composting of the leaves is recommended prior to incorporating them into soils.

### **Benefits of Adding Leaf Compost to Soil**

Soil tilth is improved, making the soils easier to cultivate.

- Adverse effects of excessive alkalinity, acidity, or over-fertilization are reduced by the added buffering of the soil.
- Drought damage to plants is reduced because of an increased water holding capacity of the soils.
- The added organic matter provides a food source for desirable soil micro-organisms.

- The cation exchange of the soil in your pumpkin patch is increased, enabling the soil to hold more plant nutrients for longer periods.
- Very small amounts of the 16 essential elements needed for your plants growth are supplied.

**When Compost is Ready to use** Compost is ready to use (6-18 months after starting) its temperature will generally have decreased to slightly above air temperature. Finished compost will usually be drier than leaves during composting. The material will also be crumbly in texture. Before using your Leaf compost, screening may be necessary to remove the larger partially decomposed materials. These materials will sometimes be available in composting piles because not all items decompose at the same rate. The un-decomposed organic matter clumps may be broken up and added to another active compost pile for additional decomposition.

**It also makes a great giant pumpkin patch mulch** Leaf compost can also be used as an organic mulch on the surface of soil in place of peat-moss, straw, etc. This organic mulch; usually a 2-3 inch covering; is valuable because:

- Helps to control weeds.
- Decreases water evaporation losses from the soil.
- Prevents soil from spattering onto the pumpkin or leaves.
- Helps prevent soil erosion by water or wind.
- Keeps the soil cooler in hot weather and warmer in cold weather.
- Increases the biological activity of earthworms and other soil organisms.
- Reduces soil compaction from rain and irrigation water.
- Keeps soils in your patch friable, therefore easier to cultivate.
- Reduces rainfall runoff, there by making more water available for your giant pumpkin plant.

**Adding Leaf compost to the Soil** Usually the pure leaf compost contains too much organic matter for a giant pumpkin to grow in. So, following the rule of thumb for pumpkins: try to bring the Organic matter level to 6-10%. Usually for giant pumpkins, mix at a 4 parts soil, to a 1 part leaf compost ratio in the fall, and let it sit all winter. This should bring the organic matter level to an acceptable proportion, by volume.

**Other Uses for Leaf Compost** Composting generally destroys most weed seeds contained in the compost material; however, not all of them will be destroyed. Some are heat resistant, and others will not be fully exposed to the high temperatures. If a completely pasteurized leaf compost is desired for your patch, it will be necessary to heat it in an oven until the temperature of the center of the mass reaches 180°F and is maintained for 30 minutes. A typical Southern New England Leaf compost analysis is shown on the next page.



# SOIL ANALYSIS & GROWTH CHARTS of the 1600+ POUND GIANT PUMPKINS: JUTRAS, YOUNG and McKIE by Ron Wallace

<u>1662 Young 07</u>			<u>1689 Jutras 07</u>			<u>1631 McKie 07</u>		
1068 Wallace x 1068aib			998 Pukos x 1225 Jutras			1041 McKie x 1308 McKie		
Pollinated June 23, 2007			Pollinated July 1, 2007			Pollinated July 3, 2007		
Grown by Don Young			Grown by Joe Jutras			Grown by Dan and Jason McKie		
Dea Moines, Iowa			N. Scituate, RI			Rochester, NY		
Date	est. wt.	lbs/day	Date	est. wt.	lbs/day	Date	est. wt.	lbs/day
July 13	157	lbs	July 22	172	lbs	July 18	45	lbs
July 20	398	34	July 30	449	34.5	July 25	178	19
July 27	647	35.5	Aug 5	685	39	Aug 1	416	34
Aug 2	869	37	Aug 12	946	37	Aug 8	623	29.5
Aug 10	1398	33.5	Aug 19	1148	28.5	Aug 15	808	26
Aug 17	1307	24	Aug 26	1353	29.2	Aug 22	934	18
Aug 24	1481	26	Sept 2	1449	13.7	Aug 29	1056	17.5
Sept 1	1540	9.5	Sept 10	1523	9.25	Sept 5	1127	10
Sept 4	1567	3	Sept 16	1571	8	Sept 12	1191	9
Only grew for 74 days.			Sept 23	1618	6.75	Sept 19	1259	9.5
6% heavy to chart			Sept 26	1699	6*	Sept 26	1305	6.5
			* A few inches were gained when measured on pallet.			Oct 2	1340	5
			Still growing 6 pounds per day when harvested			Oct 9	1377	5*
						*Still growing 5 pounds per day when harvested.		
						19% heavy to chart.		

to no effect on them. I would still shoot for a range of 6.5 to 7 if I were balancing a soil. Keep in mind soil pH will drop slightly throughout the season.

Potassium: Rivals nitrogen as the number one nutrient absorbed in greatest amounts by plants. One thing that stands out to me is the amount of Potassium in both the Jutras and Young soil. In 2005 when I did a soil study, I came up with 2-5% base saturation (250+ppm) on Potassium. After talking with many soil experts and seeing the results of not only these pumpkin but my own, I am convinced that the number needs to be between 4-8% base saturation (300+ppm). Do not get confused with looking at their large potassium numbers, all you need to do is look at the McKie level to realize that the pumpkin will only take what's needed and the rest is wasted. It is also good to remember when raising potassium, to do it slowly over a period of time, to avoid build up of excessive salts.

Calcium and Magnesium: Nothing much has changed here with base saturation on Calcium between 65 and 75% (2000-3000 ppm) and Magnesium at 10-20% (200-300 ppm).

Soil test results for these growers are shown on the next page in the left hand column Fall soil test results from all of these patches will be available in our April newsletter. It will be interesting to see how much these "pigs" ate this past season.

Growth charts: My favorite time of the year is spent on Sundays with pap, measuring our pumpkins. After measuring we then retreat to the "pumpkin shack" for a cold beverage and to record our latest numbers. At this time, I pull out my stack of growth charts to see how we are doing compared to our previous best but also the best of all-time. It is at this point a grower can get very excited or disappointed. About the mid way point of growth, most seasoned growers have a good idea of where they "could" end up barring tragedy of any kind. Pumpkins usually don't stop growing unless there is a problem past 45-days of growth, and we all have a pretty good idea of what we usually can expect for weight during the last 45 days of the season. There are a few good reasons why many growers experienced heavy late-season weight gains this past season. The weather had to be one of them; better plant technique and the use of mycorizal fungi just to name a few. When we look at the growth charts of these three pumpkins, we find good examples of heavy early season weight gains like; (Don Young) Consistent heavy mid to late season weight gain (Joe Jutras) and a slower but steady weight gain (Dan/Jason McKie). Lets take a look at the best 5-week pounds per day average these pumpkins had. Joe Jutras averaged and incredible 33.64 pounds per day (1,177 pounds) Don Young was

Immediately after the dust had settled on an amazing growing season, my thoughts quickly turned to the "science" of the hobby. Over the last several years I have turned most of my attention to a grower's soil rather than the obvious question everyone asks, "What seed grew those pumpkins"? I am not trying to diminish the accomplishment of those "mother" seeds but to continue our march towards 2,000 pounds, our soils must be balanced, and turbo charged full of a diversity of microbes. (More on microbial diversity in our April newsletter) I am also fascinated with growth charts, having collected as many as I can over the years to compare my in season pumpkins with some of the best of all time.

Let's start with the soil test results. A few short years ago, test results with a pH higher than 7 would send most of us out looking for sulfur to lower our pH. Jack LaRue was one of the first "Heavy Hitters" to grow successfully with a soil pH over 7. Since then many have been grown, including two from this list. A pH of over 7 can tie up micronutrients but with the amount of Organic matter and Bio stimulants (Humic acid, Kelp, fish etc) we now use, micronutrients are so abundant that the pH plays little



right behind him at 32.80 pounds per day (1,148 pounds) and the McKie boys came in at 25.30 pounds per day (885 pounds). It is this chart (McKie) that I think holds the most promise if we are to hit 2,000 pounds. As all of us are well aware the 1631.5 McKie was an unbelievable 20% heavy! And along with the Jutras pumpkin still growing when harvested. The ability to grow at a little bit of a slower pace for a longer period of time can produce a truly thick over-the-chart-pumpkin. We even noticed it this year in our own patch. My 1470 never went over 28 pounds per day and was not thought to do much, but it kept growing and was still putting on 6 pounds per day when cut for the Topsfield Fair. Final tape was 1280 pounds almost 15% heavy. So when next summer rolls around and you are comparing to these champions, remember all pumpkins don't grow at the same pace and if you try to "push" them to catch up, bad things will usually happen. We already know we can grow a pumpkin over 440 inches (Larry Checkon 2005). The key now is to get one that big that goes heavy, then we

**Dan Young**  
 Soil test from 10/21/06 patch size 3,700 sq ft. **New garden.**  
 pH 7.4 Nitrogen NO3=60ppm  
 Organic Matter: 24.4%  
 (P) 186 ppm  
 (K) 2115 ppm  
 (Ca) 3127 ppm  
 (Mg) 712 ppm  
 Cation Exch Cap 27.1  
 Percent Base Saturation K=19.9 Mg=21.6 Ca=57.5  
 All micronutrients above normal levels.  
 Added to patch after test results:

- 500 pounds gypsum

**Joe Jutras:**  
 Soil test from 4/4/07 Patch size 3,600 sq ft. **New garden**  
 pH 7.2 Nitrogen NO3=13ppm  
 Organic Matter: 7.6%  
 (P) 33 ppm  
 (K) 710 ppm  
 (Ca) 1238 ppm  
 (Mg) 221 ppm  
 Cation Exch Cap 9.8  
 Percent Base Saturation K=18.6 Mg=18.5 Ca=63.1  
 All micronutrients above normal levels.  
 Added to soil after test results:

- 24 yards cow manure
- 2.5 yards chicken manure
- 24 pounds 0-0-50 sulfate of potash
- 40 lbs Greensmiths humic acid
- 300 pounds gypsum
- 30 ounces Neptune's humate concentrate
- 60 pounds North American Kelp Meal

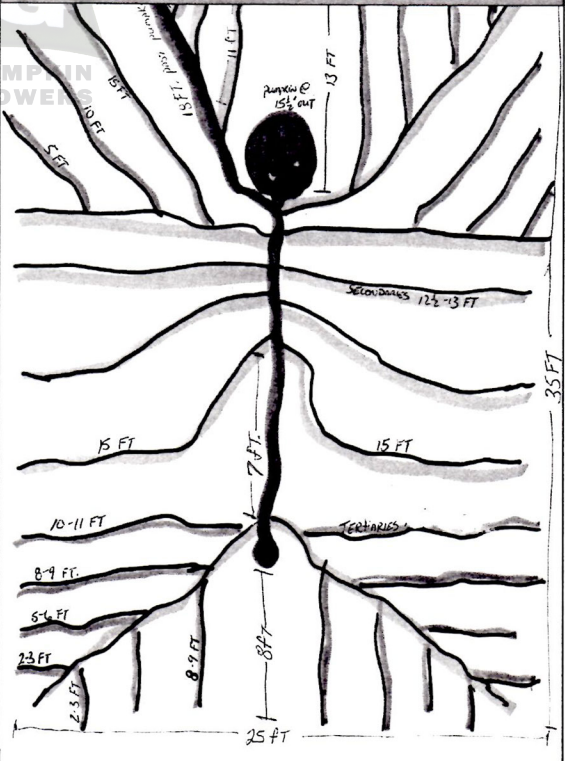
**Dan & Jason McKie**  
 Soil test from 10/21/06 Patch 10,000 sq ft. **New garden**  
 pH 6.7 Nitrogen NO3=31ppm  
 Organic Matter: 14.9%  
 (P) 47 ppm  
 (K) 250 ppm  
 (Ca) 2253ppm  
 (Mg) 355ppm  
 Cation Exch Cap 15.9  
 Percent Base Saturation K=4% Mg=18% Ca=70%  
 All micronutrients above normal levels.  
 Added to patch after soil test:

- 30 yards horse manure
- 250 pounds North American Kelp meal
- 200 pounds Greensmiths humic acid
- 400 pounds gypsum
- 50 pounds Cal nitrate
- 75 pounds blood meal
- 150 pounds bone meal
- 50 pounds 0-0-50 sulfate of potash

**McKie 1631 Facts by: Dan and Jason McKie**  
1631.5 was a 1041.5 McKie x 1308.5 McKie cross

- ◆ Germinated on May 2nd as a back-up plant-Started this plant later than normal, because of back-up status. Set in patch on May 5th. Mini-greenhouse with heat lamp used at night and blankets over it at night, for most of May.
- ◆ Pollinated July 3rd at 15.5 feet on main vine.
- ◆ New patch-buckwheat cover crop last summer/amendments added in Spring.
- ◆ Soil soup used every 10 days for months of June and July only.
- ◆ Mycorizal fungi used at every leaf node during vining stage and re-inoculation in early September.
- ◆ Agro-K foliar spray used for the first two weeks of June (never used after that) unless leaf-burn became severe from hot days...didn't want to spray anything unless necessary.
- ◆ No other fertilizers were used during the season other than soil soup and limited amounts of Agro-K.
- ◆ Soil drenches were done about every 3 weeks using Cleary's 3336, Medallion, Subdue Maxx and Terrazole.
- ◆ Foliar disease control included -Daconil, Manzate, Aliette, Touche, Cleary's 3336, Rhapsody, Phyton 27 and Quadris.Irrigation was mainly drip tape, supplemented with hand watering, especially during dry spells.
- ◆ Insect control was Warrior-T every 7-10 days, Bayer Tree and Shrub (foliar for aphids) during Aug.-Sept. Merit drenches once per month.
- ◆ Grew about 300 lbs. From Sept. 1st until harvest.
- ◆ Still growing at least 5 lbs per day (100+) days ...no other weigh offs to wait for.
- ◆ Final ott-182.5-111-108=401.5"-1352 lb. Est. (Final weight was 1631 which was 20% heavy).

**Check out the McKie's Plant Structure. (85% of the plant nutrients are feeding the pumpkin before the pumpkin set).**





# Don 1662 Young

I have been working on building up my patch for years. This year was no exception. In the Fall of 2006, I covered my garden with several inches of aged Rabbit and Cow manure compost, plus my amendments, which included Gypsum, and tilled them in uniformly. Which resulted in a blended, black, loose and well draining soil. The organic matter in my patch was built up to 27%, which most growers consider very high.

I always sprout test my seeds in the winter, if I have extra's, to make sure the seeds look like they will grow healthy plants. I filed the edge of my 1068 seed and soaked it for 3-4 hours I then plant them (in 4 inch peat pots), into a saturated Perlite sphagnum seed starting mix. When my plant came up on April 30th, and was fully released from its seed coat, I placed it under a full spectrum light to keep the seedling short and stocky. As soon as the 1st true leaf appeared I set the 1068Wallace, out in the Patch on May 4th.

As the plant grew, I allowed all the secondary vines to grow, 12 feet out in each direction. The first couple 12ft secondary vines were swooped back from the main slightly. One row of secondary vines were cut out before the pumpkin, because they were too close together. The 3rd row of secondary vines grew to 11 ft then turned them in the direction of the main and then I let them continue growing. Actually 90% of the plant is rooted before the pumpkin. It is deceiving, because to look at it from a distance you might think the main vine continues for another 12 ft after the pumpkin. But its actually the long secondary vines that fill in the rest of the garden. I stopped a lot of the vines at 25 days.

I used lots of Neptune's Harvest seaweed and some fish, which was applied with my Stihls mister, brewed in my 55 gallon compost tea mix. My tea mix also contained one quart of feed grade molasses, which is filtered through worm castings. My Tea was applied weekly. Thank you Fred Macari for sharing your tea recipe with me. During the Iowa mid summer heat, I have micro sprinklers set to turn on for 20 seconds/5 minutes, which kept my 1068 cool. Sometimes I watered under the massive leaves by

hand, because of the large dry spots, that normally form under many of the bigger leaves. The 1662 was the first pumpkin pollinated on this plant 11 ft out on the main, and it was a perfect 5 lobe.

I decided after its June 23rd pollination



to not till or hoe near the plant. There are too many roots to damage. I actually used a 1 gallon sprayer with Glyphosate (generic round up) and ever so carefully sprayed for weeds on windless days. Just keep a pocket knife handy incase you spray a pumpkin leaf, and cut it off immediately.

I used mycorizal beneficial bacteria granular when burying vines.

Also when the plant was full sized, I used Plant Success soluble mycorizal with beneficial bacteria every few weeks, as a drench. I've learned to watch the gloss and waxy shiney look of the leaves on this 1068 plant. When they look healthy, I coasted on the ferts (just added a little seaweed plus compost tea) and let the plant grow. At max growth period this pumpkin was putting on 40 lbs then 50 lbs per day.

I used rugs and planks under the pumpkin; sheets and tarp for shade, plus cheap small fans, when necessary to keep things like the stem dry. If I find a wet or not-sure wet spot on my stump, stem or main I'll

use pure strength bleach. Extreme yes, but we are doing extreme things here.

When the pumpkin reaches about 40 days, I start using calcium soaked sheets, to maintain wall integrity. I use merit once per month along with Talstar One, Warrior T and garlic are my insecticides of choice. As far as fungicides I use (as minimally as possible) on an alternating basis, Daconil, Eagle -20 and Clearys 3336.

We are all learning non stop and I do things I learned from a lot of growers. Ron and Pap have really helped. I've learned lots of things from other growers too, and I tweak and apply all kinds of advice. I hope this report helps you, next year.

Don Young



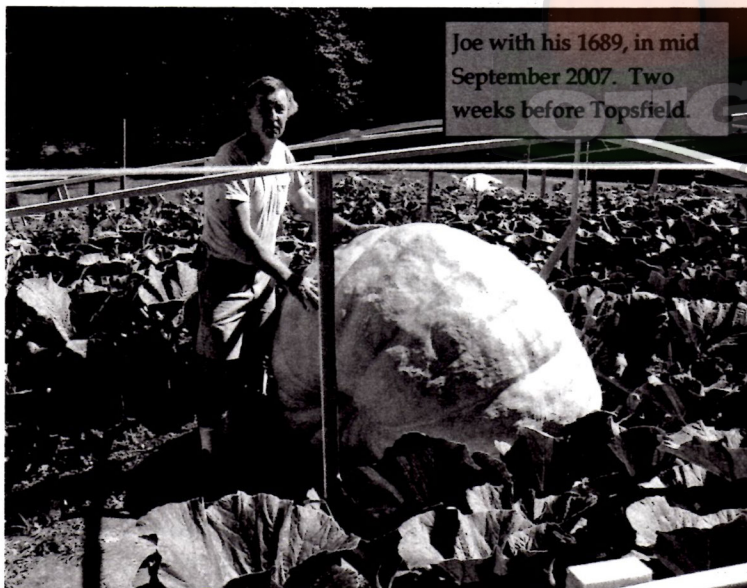


Wow!! Can you believe it! Only 11 lbs from 1700 lbs!

Can 2,000 lbs be that far away? I think it's obtainable in 3 to 5 years with the current growing techniques that we are fine tuning today. The genetics have really improved with bigger and thicker pumpkins each year, along with the willingness to further advance the knowledge of soil enhancements, which were instrumental to the weight gain we've seen this year. I for one, owe a lot to my very good friends, Dick and Ronnie Wallace. You are the true mentors of the pumpkin community. The information and tips they shared in "How I Grew my 1502" was incredible! Ron, together with Steve Connolly, laid it all on the line for others to achieve their own personal best. Hey, you guys are the best of the best; great fun to be around, always a good joke or two (Thanks, Pap!) and plenty of cold beer in the clubhouse. I'm glad I live close by!

The garden where the 1689 grew was a new patch. I had amended my soil last fall and again early this spring. (Check out soil reports and amendments in Ronnie's article.) I started the year out on April 24<sup>th</sup> with seed germination. I myself, like the paper towel method to start seedlings. That way, I can see the root appear (in about 32 hours), before I put it into the 5"x5"x7" seed pots. I used 1 tablespoon of mycorrizal per pot to inoculate the roots. The plants went into the garden on May 2<sup>nd</sup>.

Each planting area is 750 sq. ft. (25' wide x 30' deep). My greenhouses are 5' x7' and have a slanted roof, much like a salt box house, making them easy to get into and have adjustable vents using eye hooks. I have found that the perfect temperature for the greenhouse is around 85 to 100 degrees. I keep my soil moist to attract and hold in the heat of the day. I used mycorrizal for all vine burying throughout the season. I think it helps the roots tremendously. I let side vines grow to 12' long; there were 11 vines on the left and 9 on the right - approximately 625 sq. ft. of plant before the pumpkin. The pumpkin was the forth one out after the



Joe with his 1689, in mid September 2007. Two weeks before Topsfield.

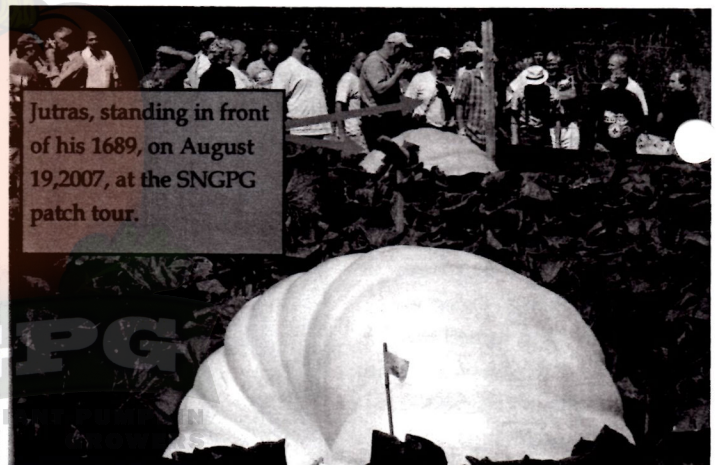
10 ft. mark at 17 ft. In past years, I have been digging up my main at the pumpkin and redirecting it on a 60 degree angle to prevent vine stress later on in the season. This year, I was careful not to damage or cut any of the roots. I raised the main four to five feet on either side of the pumpkin, and shoveled soil under the roots, banking the soil so I could

maintain the roots around my pumpkin without pinning it down. I kept a white tablecloth on the pumpkin all season for shade, covering it with a blanket at night when the temps got below 5F degrees.

My insecticide spraying program started with Warrior T at the first sign of cucumber beetles on a seven to ten day schedule. I then used Merit spray for aphids around the first of August, spraying every three weeks. I rotated my fungicides weekly from Daconil, Clearys, Heritage, and Kocide. All in all, I had a light infestation and very little fungal disease this year in my patch.

Just like a good insect and fungicide spraying program, you also need a good fertilizing program. I like to use warm water when foliar feeding my plants, which I gravity feed out of two, 550 gallon tanks that I use to temper my water in. I then fill a 55 gallon drum, and mix in a half gallon of Neptune's Harvest (fish and seaweed blend) and pump it through a garden hose, spraying it as a foliar spray onto my ten pumpkin plants and two long gourd trellises (approximately 7500 sq. ft.) once a week. I mix applying weekly Biomin calcium and Neptune's Harvest 12% Humic Concentrate, rotating on a bi-weekly basis. I found that it is better to spray a little less more often then to over fertilize once a week.

This year, weather in New England gave us the perfect reason to



Jutras, standing in front of his 1689, on August 19, 2007, at the SNGPG patch tour.

have a automatic watering system, because we had one of the driest summers on record. I used some old greenhouse tubing to install a 1" PVC pipe three-zone watering system. I had it come on once a day for one hour. On very hot days, or long dry spells, I had it come on two to three times a day when soil looked especially dry. I used about 65 gal. of water per-plant, per-day and with the extra watering on hot days, brought it up to about 80 gal. per-day. At the end of the season when I picked up the plants, I was amazed at how many roots they had! I contribute it to adding mycorrizal and using less water than I have in past years.

Finally, a word of encouragement for all pumpkin growers who have only 8 to 9 hours of sun light a day, and do not have time to hand water; for you there is hope. That's about all my garden gets each day for sunlight. With all the good weather we had here in New England this summer, my newly installed watering system and my fertilizer and spray program, I was able to grow four new personal bests (one of them a new world record!)

I wish everyone the very best of luck next year.