

# HOW TO GROW A GIANT PUMPKIN

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The biggest pumpkins come from the variety called 'ATLANTIC GIANT'. 'Big Max' variety will grow pumpkins to around 100 lbs but Atlantic Giants grow from 200 lbs up. The current record is 1818.5 lbs from a Canadian grower in Quebec set in 2011. The Atlantic Giant pumpkin is a squash- Curcubita Maxima species.

## WHAT DO I NEED TO GROW A GIANT PUMPKIN?

You will need a general knowledge of growing vegetables, good seed, good soil, good luck and a little hard work are the only things you need to grow an Atlantic Giant Pumpkin 300 lbs and larger.

### Here are the basics for growing a giant pumpkin

1. Location
2. Soil amendments
3. Seed selection
4. Planting date
5. Seed germination
6. Transplanting the seedling
7. Watering
8. Feeding
9. Advance programs
10. Pests and diseases
11. Pollination
12. Positioning the fruit/reducing stem stress
13. Providing shade for the pumpkin
14. Keep the pumpkin dry
15. Late season care
16. Harvesting the pumpkin

## PATCH PREPARATION

**PICKING A LOCATION**-Your patch should receive as much full sun as possible.

-Optimally, you will need a minimum of 400 sq feet (20 x 20 ft) to grow a giant pumpkin but many have been grown in smaller spaces. More space is better if you have it.

**AMENDING THE SOIL**-considering getting a soil test to see where your soil might be lacking amendments in either fall or spring.

**-FALL:** Soil preparation is the most important thing you can do in growing a giant pumpkin and fall is a great time to start. To the general planting area add soil amendments like manure, molasses, compost and leaves and gypsum to help loosed up hard soils. I do rototill a virgin patch that has never been amended. Haul in a couple of

loads of manure, preferably aged or composted. I loosen the soil to a circle 6 feet around and dig the amendments in.

**-EARLY SPRING:** Add amendments now if you haven't already and dig in and loosen the soil. Be sure you use cold not hot manure at this time-you will burn your plants with hot (fresh) manure.



LOW TUNNEL

-After your patch is worked, and before you plant your transplant, make a mini hoop house over where your plant will go about a week before transplanting. This will warm up the soil and protect the plant when you plant it. You can use row cover or plastic.

### **SEED SELECTION**

An important decision to grow a big giant pumpkin is seed selection. Do not buy a generic seed if you want to grow super big. Get one from a giant pumpkin grower or join a club or association like The Rocky Mountain Giant Vegetable Growers Association. Usually you can get a seed for free from a grower or when you join the association they will send you a packet of many different seeds for you to choose from. I strongly advise you join a local club and become friends with the growers.

The genetic lineage of giant pumpkins can be traced back over 8 generations to their creation by Howard Dill in the 1980's. There are entire websites that track each seed attributes and lineage.

Seeds are named from the weight of the pumpkin they were grown from, the grower's name and the year they were grown. For example, I grew a 448 lb pumpkin in 2011. It is 448 Cabossel 11. When I took it to a weigh off I gave information on it like date I started it, pollinated it, how many days till I cut it off, was it grown on the main or secondary vine, color, etc. Other growers can use this information.

For your first giant pumpkin endeavor, just get a good seed.

### **PLANTING DATES**

-Start seed inside mid-late April (Santa Fe area)

-Transplant outside after danger of last frost (average date May 15 in Santa Fe area)

## SEED GERMINATION

-**APRIL:** Start your seed indoors in a 3-4" peat pot. I like to cut the sides of the peat pot and then tape up to facilitate easy removal of the plant later. Then add the potting mix.

- File the edges of your seed lightly with a nail file or fine sandpaper so that a very small amount of the seed coat edge is sanded away. Stay away from the pointed end. You should just start to see a color difference along the edge if done correctly. This will aid moisture in penetrating the seed coat.

-Soak the seed in warm water 8 hours or over night.

-Put the seed about 1 inch deep and pointed side down. Put it under lights to germinate on a plant-heating mat. Keep the temperature around 85 degrees. Or simply place it in a zip-lock bag on a warm surface such as the top of a refrigerator until it germinates and the leaves appear. Water daily. The seed should germinate in 3-5 days. Start them from mid to late April.



GROWING DIRECTION OF PLANT

-When it germinates, in about 3-5 days you will see the first 2 huge first leaves (cotyledon leaves) emerge. In another 3-5 days the first true leaf will appear. **THE VINE WILL GROW IN THE OPPOSITE DIRECTION OF THE FIRST TRUE LEAF** so mark your pot so you know how to position it when you transplant into the ground.

-Keep under lights and in a warm spot till transplanting after May 15<sup>th</sup> or last danger of frost. Some years you can plant earlier, some years later-watch the weather channel to see how cold it is at night.

### **TRANSPLANTING OUTSIDE**

-When the weather is safe and the true leaves are about 2-3 inches big you can transplant outside. Put in the hole generous amounts of compost, 1/2 cup of powdered humate, 1 cup worm castings and 2-3 tablespoons of water polymer crystals and mix together. Add 1/2 cup mycorrhizal on top of amendments. Make sure the mycorrhizal will be in direct contact with the roots of the plant.

- Carefully peel off the peat pot including the bottom so not to disturb the roots.



LOW TUNNEL WITH SHADE CLOTH

-Place your seedling in the ground inside your low tunnel forming a big well around the plant. If you are going to use a drip system (highly recommended) place it now inside the well right at the root zone where it will need water. Put the plant up to the first leaves and face that first true leaf in the opposite direction of the way you want it to grow. I put 2 chopsticks to form an X over the baby vine to help it lay down (they sometimes want to grow upward). It will help hold it down until the roots at the junctions are established.



CHOP STICKS HELP MAIN VINE LAY DOWN

- In a 5-gallon bucket, I add 1 tsp/1 gallon of water of liquid seaweed and about 3 drops of Super Thrive/1 gallon of water that helps immensely with transplant shock. Super Thrive is super expensive and super good. It has lots of the B vitamin complex in it which helps with stress-just like for us! I first watered the well 2x with just water to make sure all the soil was soaked around the plant, then I added the liquid seaweed/thrive in water to the well.

-Water your seedling as needed to keep moist but not soaking wet. Start fertilizing with fish emulsion after about 2 weeks when plants are acclimated.

-Your plant should start to vine in 2-3 weeks depending on the temperature. This vine is called the main vine. As the plant grows it will produce side vines called secondary vines off the main vine. The pattern of growth is naturally in the shape of a Christmas tree with the longest secondary vines closest to the beginning of where the plant starts (called the stump) and getting progressively shorter as the vine gets longer. These secondary vines are where the plant gets most of its food for the fruit. Nurture both the main and secondary vines. Later the plant will produce tertiary vines that grow off of the secondary vines. Usually growers trim these off so more energy can go into growing the fruit unless their plant does not have much leaf growth.

## **WATERING**

Optimal water is 1 inch of water per week. How do you figure out how many gallons a day you should water your patch? Use this formula below and adjust, as the patch gets bigger:

### **EXAMPLE ON 400 SQ FT PATCH (20ft x 20 ft)**

1.  $20 \times 20 = 400$  sq ft
2.  $400/43560$  (sq footage of an acre) = .009 acre
3. 1 inch of water per acre=27154 gal
4.  $.009 \times 27154 = 254$  gal of water per week
5.  $254/7$  (days a week)=34 gal a day for entire patch to get 1 inch of water per week

-Take a 1-gallon container and pour 5 of them into a 5-gallon bucket to know where 5-gallon line is in the bucket. Mark the bucket at that line. Then take your drip system line and put into the bucket. Turn on the drip system and see how long it takes to fill up the 5-gal bucket to your line. My drip system filled it up in 5 minutes. So if you want say 15 gal a day then you would need to water 15 minutes a day and for 35 minutes you would need to water 35 minutes. Now you can break up your watering into say 3x a day with 15 minutes in the morning, 10 minutes at noon and 10 minutes at 3pm. This will also help with midday wilt OR you can water with the drip at the stump and a sprinkler set in the middle of the patch midday and turned on to water the rest of the plant.

-You can also use the feel test where you dig up 6 inches of soil and squeeze into a ball. If it forms easily and still crumbles into smaller pieces then it is good. If it is slimy then it is too wet and if it won't form a ball, then it is too dry.

-Watering is an issue. Think of how else you can conserve or capture water. Adding water polymer crystals when you transplant, putting wells around your base of pumpkin plants to capture the water close to root systems, mulching with straw, use of drip systems on timers, rain catchment, gray water systems and rain fall are all ways to help. Get a rain gauge and set it in your patch to measure rainfall so you turn off your system when we get enough rain during the monsoon season.

### **FEEDING**

Weekly feeding is important if trying to grow a giant pumpkin. I use organic fish emulsion and seaweed fertilizers (Neptune Harvest Fish/Seaweed fertilizer) on a weekly basis alternating between drenches one week and foliar spray the next week.

### **ADVANCED PROGRAMS**

-Some companies sell advance products for: soil conditioners, root stimulants, nutrients, growth stimulants, bloom boosters and compost teas. ALL THESE PRODUCTS CAN BE USED IN THE VEGETABLE GARDEN AS WELL FOR INCREASED PRODUCE PRODUCTIVITY.

I use (from extremepumpkinstore.com):

'Nutri-Cal'-for additional calcium to build strong walls-use as foliar spray

'Bio-nutrients soluble AG'-a soil conditioner and bio-stimulant-increases soil microbial activity. Use as a drench.

'Soluble kelp powder'-for bloom set, stress, plant vigor, root improvement-foliar spray

'Soluble Humic'-powder-natural soil and plant growth stimulant-foliar spray

'Symbios Pumpkin Pro Mycorrhizal Inoculant'-beneficial fungi to use when transplanting and when burying at leaf nodes.

'Companion'-for fungal disease control-use as a drench

'GreenCure'-fungicide for powdery mildew. foliar spray

Compost teas-I make my own-use as drench and foliar.

### **PROTECTING AGAINST INSECTS AND DISEASES**

-Cucumber beetles, squash bugs and squash vine borers are the worst insect enemies for pumpkins. Use garlic sprays as a deterrent and Neem as a deterrent/insecticide/fungicide. Bad bugs hide in weeds and weeds suck up precious water-be sure to keep up on weeding.

### **INSECTS**

-I go organic so I avoid systemic sprays. I cover all my pumpkins with row cover until flowers show up.

-For squash vine borers-cover the vine with foil for about the first 12 inches from the stump, bury the vines. Keep plant covered till flowers show up.

-For squash bugs-keep plant covered. Inspect each leaf and remove all eggs, nymphs and adults every 7 days. The life span of the squash bug is from egg to nymph in 7-10 days so you want to keep up on this or they can take over. Spray with Neem and garlic mostly as deterrent.

### **DISEASES/FUNGICIDES**

I use Neem, Companion, Actinovate, Green Cure (Potassium bicarbonate), Serenade and aerated compost teas for organic fungicides/disease control. Potassium bicarbonate works better than sodium bicarbonate (baking soda) for powdery mildew.

### **POLLINATION**

If you choose to only grow one giant pumpkin plant and are not growing any other squash in the Curcubita Maxima family and don't care about the genetic line for later seed distribution, then you can let the bees do the pollination.

-However most growers hand pollinate and grow more than one pumpkin and want to know who the mother plant and father plant are because they are looking for certain attributes such as bigger pumpkins, heavier pumpkins, more orange pumpkins, different colored pumpkins, and certain shapes to name a few attributes.



FEMALE BABY FLOWER-really small

- Pumpkin plants produce **both** male and female flowers. Male flowers have longer stems and female flowers have a shorter stem with a baby pumpkin under the blossom. The male flowers will be the first to show up. There are always way more male flowers in the beginning and this signals that pollination time is nearing when female flowers show up 1-2 weeks later. The males are always the first ones to show up at a party!

-Around the last week of June, your plant's main vine should be 8-10 feet long. The ideal position to set a pumpkin is at **least** 10 feet from the stump along the main vine although a world record was set at 8 feet out. You can also pollinate off the secondaries as well.



FEMALE FLOWER READY TO OPEN THE NEXT DAY



MALE FLOWER WITH POLLEN READY TO POLLINATE



FEMALE FLOWER OPENED AND READY TO RECEIVE POLLEN



**-THE DAY BEFORE-**When the female flower is ready to open, the blossom will be about 3 inches long and go from a greenish-yellow hue to an orange hue. The same goes for the male flowers. This means the flower will open the next morning. I cover both female and male flowers the night before to ensure the bees don't pollinate them OR take all the pollen before I can.

**-THE DAY OF POLLINATING-**You have about 4 hours to hand pollinate in the morning. Try to pollinate before 10 am. I get up early if I know I'm pollinating that day.



PEEL THE PETALS OFF OF MALE FLOWER



STAMEN LOADED WITH POLLEN



PAINT THE POLLEN ONTO THE STIGMA OF THE FEMALE FLOWER



CLOSEUP THE FEMALE FLOWER FOR 24 HOURS

-To hand pollinate pick off a couple of male flower with lots of pollen on its stamen and take off the petals leaving the pollen on the male stamen and then use it as a paintbrush to 'paint' the pollen all around and inside the female flower stigma. Some of the pollen must go down the female stigma flower for pollination to be complete. If you don't get enough pollen on it, it will either not take or abort later. After you pollinate the flower, I use a twistie tie to gently close the female flower for 24 hours so no bees can accidentally pollinate it. Then take off the tie. Write down which plant you used for the male flower and the receiving female flower and the date you pollinated. That way you'll remember later. Look at the little pumpkins for about 10 days after pollination. The fruit should be shiny and yellowish and will grow rapidly.

-If the pollination didn't 'take' the little fruit will turn dull and eventually fall off. If your little fruit grows past the size of a basketball then it probably is a keeper. Reasons for pollination failure are not enough pollen was distributed on the female stigma OR it was

too hot on the pollination day. Any temperature over 90 degrees will usually be the cause for the plant to self-abort the fruit.

-The prime time to set your fruit is between July 1 and July 10. This allows for the right amount of time for your fruit to grow to it's maximum to be ready for Oct when most weigh-offs or frosts occur.

-I pollinate all my blossoms until I decide which one(s) I want to keep on the plant. Then I cull all female blossoms and baby pumpkins so all the energy will go into the ones I want to keep. By August 1 you should cull your fruit down to 1 or two fruits per plant.

### **POSITIONING THE FRUIT**

-Positioning the fruit is important, as you don't want the fruit to grow on top of the vine that is providing it food. Optimal positioning of your pumpkin is perpendicular (90 degrees) to the vine but is not always possible. Start positioning the pumpkin to the vine when it is little. Gently move the pumpkin maybe 1 inch a day away from the vine till it will be clear of it when it gets bigger. A gentle curve in the vine away from the fruit is ok as well. This will reduce stem stress when it starts to really gain weight. Be very careful when moving it as it can snap or crack easily.

### **REDUCING STEM STRESS**

-Your pumpkin stem should be free of any tension so it can grow upwards with the pumpkin. Cut any taproots under several leaves that may form on either side of the pumpkin so the vine will be free at that point.

### **PROVIDING SHADE**

- Put row cover on your pumpkin or build a shade structure with a tarp to protect your pumpkin from sunburning and premature aging in the hot sun. If the skin stays soft it will grow faster than if it hardens.

### **KEEPING IT DRY**

- Put 2-3 inches of play sand under your pumpkin when it gets to be about the size of a soccer ball to keep it dry. Spread it out to a 4 ft circle. About 2 bags of play sand will work. If you wait too long it will be hard to pick up and do. This takes 2 people.

### **TRAINING THE VINES**

-Train the secondary vines at right angles to the main vine. Dig a 2-3 inch trench and bury all vines with soil as they grow out. Put a tablespoon of mycorrhizal under each leaf node junction and then bury-this will encourage taproots to form under the leaves that can use more water from rain or sprinkling and helps stabilize the vine from twisting in high winds. Trim tertiary vines later off of the secondary vines.

### **LATE SEASON CARE**

-Growth will slow tremendously later in the season as the temperatures cool in the day and night. Put row cover and blankets over your plant when the temperatures fall below

60 degrees at night. Be sure to uncover it when daytime temperatures are expected to be above 70 degrees in the day. Also if you can, cover the whole plant if temperatures are expected to get below freezing at night.



PUMPKIN TARP

### **HARVESTING YOUR PUMPKIN**

-Cut the pumpkin from its vine and place a 'pumpkin tarp' next to it. Then tip the pumpkin back (inspecting the bottom of the pumpkin for soft spots or holes) and assuming it is fine, pull 1/2 of the tarp under it, then tip the pumpkin the other way and pull the tarp out. Position everyone evenly around the tarp and using the handles, lift together. Be very careful-if a 300-400 lb pumpkin falls on someone it will seriously injure them.



ROLLING PUMPKIN ONTO TARP

-For pumpkins less than 500 lbs, get 8 strong guys and a pumpkin tarp that is rated to hold that weight to lift it onto a pallet in a truck or utility trailer. For pumpkins over that it is recommended you get a lift ring or straps and a tripod or tractor!

-You'll have to tie it down with cinch straps so it will not roll around. Put Styrofoam or cloth under the pressure points on the pumpkin so it doesn't get injured on the way to your weigh-off.

-Cracks wider than a quarter, soft spots, holes, etc will disqualify your pumpkin at the weigh off so be sure to be careful getting it to the contest.

-To be considered for a State Record here in NM (as NM does not keep such records) you must get your pumpkin officially weighed somewhere at a Great Pumpkin Commonwealth (GPC) sanctioned Weigh Off. This organization keeps all records for giant pumpkins.

## RESOURCES

### WEBSITES

Great Pumpkin Commonwealth (GPC)  
[www.greatpumpkincommonwealth.com](http://www.greatpumpkincommonwealth.com)

Rocky Mountain Giant Vegetable Growers or Colorado Pumpkins  
[www.coloradopumpkins.com](http://www.coloradopumpkins.com)

Big Pumpkins.com: A Giant Pumpkin Growing community  
[www.bigpumpkins.com](http://www.bigpumpkins.com)

10 Steps to a Giant Pumpkin- by Don Langevin  
[www.backyardgardener.com/wcgp/tips/10steps/10steps.html](http://www.backyardgardener.com/wcgp/tips/10steps/10steps.html)

### GROWING SUPPLIES

Holland's Giant Pumpkins-supplies and growing programs  
[www.hollandsgiants.com](http://www.hollandsgiants.com)

Extreme Pumpkin Store-supplies and growing programs  
[www.extremepumpkinstore.com](http://www.extremepumpkinstore.com)

P and P Seed: Giant Pumpkin Growing Supplies-pumpkin tarps/ straps/lift rings  
[www.pandpseed.com](http://www.pandpseed.com)

### BOOKS

- How to Grow World Class Pumpkins II-by Don Langevin
- How to Grow World Class Pumpkins III-by Don Langevin
- How to Grow World Class Pumpkins the All Organic Way-by Don Langevin

### INSECTICIDES/PESTICIDES

Neem-Fertilome Triple Action Plus II  
Garlic Barrier

### FUNGICIDES/DISEASE CONTROL/ORGANIC

Companion-controls many fungal and diseases  
Neem-insecticide/fungicide  
Actinovate-fungal disease control  
Serenade-fungal disease control  
'GreenCure'-fungicide for powdery mildew