

How To Grow A Giant Pumpkin

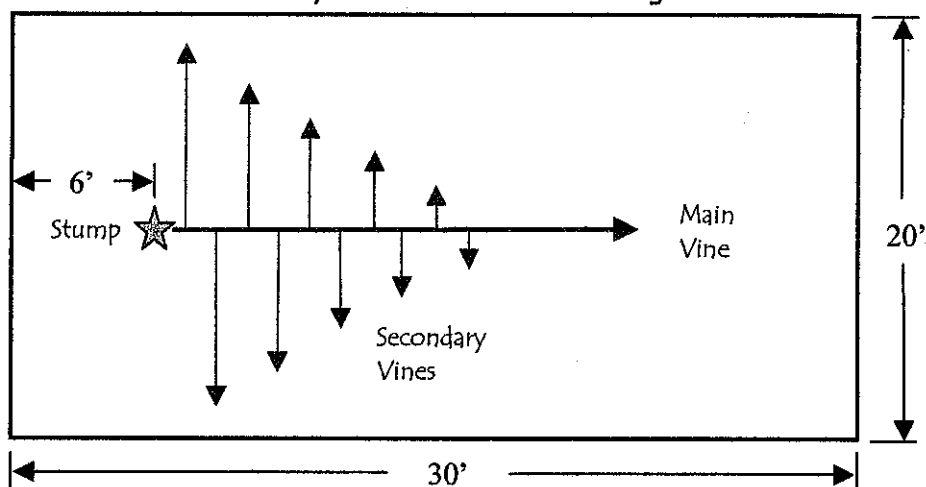
If you want to grow a world-record pumpkin, you can forget about every variety of pumpkin out there except Howard Dill's patented Atlantic Giant. Since 1979, no other pumpkin variety has been a world champion. The best Atlantic Giant pumpkin seeds can be obtained from competitive pumpkin growers or Howard Dill Enterprises (www.howarddill.com)

The primary thing you need to grow a big pumpkin is good soil. Pumpkins are large consumers of all the major plant nutrients (nitrogen, phosphorus and potassium), as well as other nutrients like calcium, magnesium and other trace elements. The key for big growth is a balanced soil, well amended with organic matter, deeply tilled and consistent generous watering. Growing a huge pumpkin is a lot of work but you can obtain amazing results if you follow the 12 basic steps listed below.



1. **PATCH PREPARATION:** Pumpkin plants thrive in rich balanced soils high in organic matter. If you can, allow a 20' by 30' foot area for each planting site. (smaller gardens use 16' x 25' min.) In the fall or early spring, apply three to five yards of compost or well-aged manure per planting site. A cover crop planted in the fall and plowed under in the early spring will help protect and condition the soil. Prior to planting, add fertilizers and other amendments as required and till the patch as deep as possible. After final tilling, keep the patch weed free by shallow hoeing and avoid compaction of the soil at all times.

Patch Layout and Plant Positioning

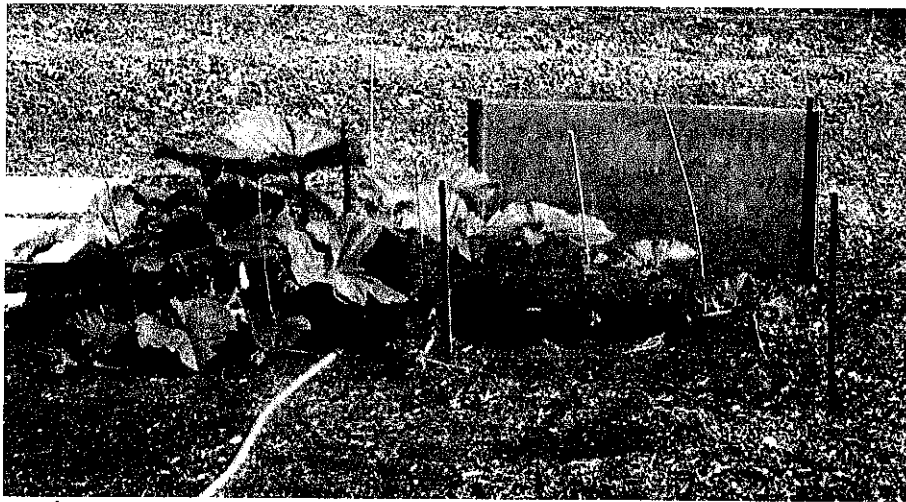


2. **GERMINATE SEEDS:** Start seeds indoors in six-inch peat pots or one gallon containers about the first week of May. Many growers file the edges of the seeds except the tip to promote germination. Keep the soil temperature in the pots at 85 to 90 degrees F. Most seeds will emerge within five days. Do not try to plant the seeds directly outdoors as they will not germinate if the soil is not warm enough.
3. **TRANSPLANT SEEDLINGS:** Transplant seedlings into the garden as soon as possible after germination. Three to four days after germination is ideal. Roots grow quickly and the plant will become root bound in less than a week. The main vine normally grows in the opposite direction of the first true leaf. Plant the seedling so that the main vine will grow down the center of the length of your patch. Transplant with care as pumpkin seedlings are easily set back during transplanting.



direction of main vine growth is opposite first true leaf.

4. **EARLY PLANT PROTECTION:** Place a small greenhouse over the young plants to protect them from frost, wind and pests. Use a 4 foot by 4 foot structure or larger. Once the plants outgrow the greenhouse, they will need to be protected from the wind until the main vine is on the ground and well rooted. Insert bamboo stakes on both sides of vine near the vine tips to keep the wind from rolling the vines over. The vine tips can become sun sensitive and burn easily. You may have to shade the vine tips with shade cloth to prevent sunburn on new growth.



Polycarbonate wind protection - Bamboo stakes are used to stabilize the plant

5. **TRAIN AND PRUNE VINES:** Pumpkin plants start a new vine at each leaf junction and must be pruned heavily and trained to grow in an orderly fashion. The main vine will start to run about one month after germination. Train the main vine to run down the center of your patch by gently coaching the vine tip and anchoring it in position with bamboo stakes. Allow secondary vines to grow perpendicular to the main vine as shown in the diagram on the first page.

Pinch off all the tertiary vines from the secondaries as soon as they begin to form. The vines should be buried as they grow to encourage anchor root growth at the leaf junctions. Burying the vines also helps protect the plant from wind damage. When the main vine and the secondaries reach the edge of the patch they should be terminated by pinching off the vine tips.

6. **WATER AND FERTILIZE:** Pumpkin plants like lots of water. The plants should get a good watering two or three times a week. Pumpkin plants are heavy feeders so weekly application of soluble fertilizers is recommended. Young plants need high phosphorus mixes such as 15-30-15. They also respond well to foliar sprays of kelp and fish emulsions. Shift to a more balanced formula, such as 20-20-20, once fruits are set. Apply water-soluble fertilizer at the rate of one pound per week per plant from the fruit set until the end of the growing season. Late in the season also consider the use of foliar calcium to supplement calcium uptake and help prevent fruit splitting. Avoid heavy watering and over fertilizing especially after fruit set as a growth spurt can result in the fruit splitting. Slow and easy wins the race. Remember this when you feel the urge to over-fertilize.

7. **POLLINATE FLOWERS:** Eight to ten weeks after seed starting, the first flowers will start appearing on the plant. Pumpkin plants have both male and female flowers. The females are easy to distinguish from the male flowers because they have a small pumpkin at their base and a multi-lobed stigma.

Hand pollination of the female flowers is recommended to insure the flower is fully pollinated. Female flowers only last for several hours after they open and must be pollinated early in the morning before it becomes too hot. Use at least three male flowers per female. Pick the males early before the bees get to them and remove the outer flower petals, exposing the pollen-laden stamen. Gently swab the stigma (internal parts) of the female flower with the stamen or use a small artist's brush to transfer the pollen to the female stigma.



Pollinate at least the first three females that open on the plant. It is important to get a pumpkin set early, preferably before the middle of July. The earlier a pumpkin is set, the longer it has to grow until harvest. Atlantic Giants can continue to grow for up to 90 days.

8. **SELECT THE MOST PROMISING PUMPKIN:** For the best chance of growing the largest pumpkin, all but one should be removed from the plant. The biggest pumpkins will normally grow on the main vine. Set at least two pumpkins on the secondary vines and use these as backups in case there are problems setting a good pumpkin on the main vine. If the main vine pumpkin is growing significantly slower than the backups, consider trying to set the next female on the main vine or going with a backup on a secondary. You can leave one or two backups on the plant until they get to 10 to 15 days old before culling them. Once you've selected your best prospect, remove all other pumpkins and female flowers from the plant.
9. **POSITION PUMPKIN AND RELIEVE STEM STRESS:** Once a pumpkin has set, its position on the vine becomes extremely important. Most often the stem grows at an acute angle to the vine. However, for optimal long-term growth, the best position is to have the stem perpendicular to the vine. If the stem is not at right angles to the vine naturally, coax it gradually, over about a week's time. Be very careful, because at this early stage the pumpkin may abort or the fragile stem can be injured.



Position the pumpkin's stem perpendicular to the vine. Here a bed of sand is used to help keep the bottom of the pumpkin dry

Place sand, fabric or styrofoam under the pumpkin to protect the bottom surface from the ground. As the pumpkin grows larger, the stem will be torn from the pumpkin if steps are not taken to reduce stem stress. Cut the anchor roots from underside the vine for several feet on either side of the fruit to allow the vine to rise as the pumpkin grows.

When the pumpkin is growing rapidly monitor stem stress often. You may have to remove some secondary vines and reposition the pumpkin repeatedly to keep the stem stress down.

10. **KEEP TRACK OF GROWTH:** Measure your pumpkins at least weekly to track its growth. A competitive pumpkin will have a circumference of about 20" at day 10, 60" at day 20 and 100" at day 30. To estimate weight, measure the circumference of your pumpkins first parallel to the ground around the entire pumpkin, from blossom end to stem. Next, measure over the top in both directions: from ground to ground along the axis from stem to blossom end, then perpendicular to the stem-blossom-end axis. Add these three measurements together, and then look up the estimated weight in the attached table one. A less precise but easier estimate is obtained by simply measuring the circumference from stem to blossom end and obtaining an estimated weight from the attached table two.
11. **SHADE THE PUMPKIN:** As the pumpkin gets larger, it must be shaded from the sun to prevent sunburn and to reduce the chance of splitting. Build a structure around the pumpkin and drape with a plastic tarp or otherwise shade the pumpkin. Some growers cover the pumpkin with a blanket to shield it from the sun during the day and reduce heat loss at night.
12. **MOVING THE PUMPKIN:** Giant pumpkins will usually stop growing at 70-80 days from pollination. If a pumpkin is headed to a weigh off, it should be left on the vine as long as possible. It can lose over a pound a day to evaporation once it is cut from the vine.

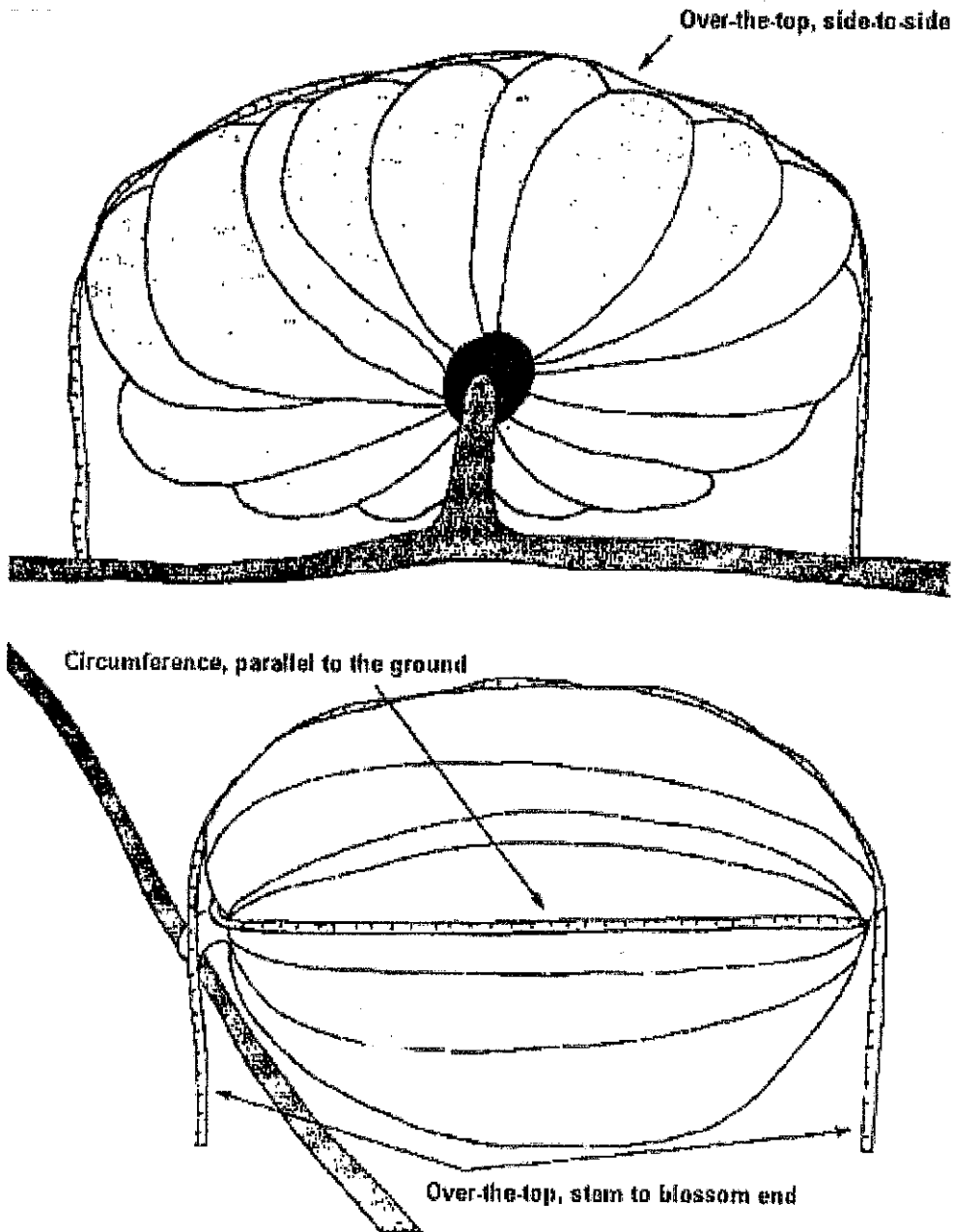


A large pumpkin can be moved with the help of some strong friends and a tarp. For larger pumpkins (greater than 500 pounds) consider buying a special moving tarp designed with hand holes. (www.howarddill.com) Gently roll the pumpkin up on one side and position the tarp underneath. Roll it back onto the tarp, gather your friends around and heave-ho! If you have real trouble lifting the pumpkin – it may be a winner!!

How To Find The Estimated Weight of a Pumpkin

The Over-The-Top Method - The Over-the-Top method of estimating weight is the most precise way to estimate the weight of an Atlantic Giant pumpkin. This method uses three separate measurements of the pumpkin which are added together. The sum of these three measurements is then used to look up the estimated weight of the pumpkin using the attached Table 1. Take the three measurements of the pumpkin as shown below using a cloth tape:

1. **Side-to-Side** – Measure over the widest point from side to side.
2. **Stem-to-Blossom** – Measure over the widest point from stem to blossom end.
3. **Circumference** – Measure around the pumpkin parallel to the ground.



The Circumference Method – The circumference method is a quick way to get an estimated weight for your pumpkin but is less precise. This method uses just the measurement of the circumference as explained above. Look up the estimated weight of the pumpkin using the attached Table Two.

Table 1: Over-the-Top Inches vs. Estimated Weight

Inches	Lbs.	Inches	Lbs.	Inches	Lbs.	Inches	Lbs.	Inches	Lbs.	Inches	Lbs.	Inches	Lbs.	Inches	Lbs.	Inches	Lbs.	Inches	Lbs.	Inches	Lbs.
91	21.4	121	44	151	79	181	130	211	199	241	290	271	407	301	552	331	729	361	941	391	1192
92	22.0	122	45	152	81	182	132	212	201	242	293	272	411	302	557	332	735	362	949	392	1201
93	22.6	123	46	153	82	183	134	213	204	243	297	273	415	303	562	333	742	363	956	393	1210
94	23.2	124	47	154	84	184	136	214	207	244	300	274	420	304	568	334	748	364	964	394	1219
95	23.9	125	48	155	85	185	138	215	210	245	304	275	424	305	573	335	755	365	972	395	1228
96	24.5	126	49	156	86	186	140	216	212	246	308	276	429	306	579	336	762	366	980	396	1238
97	25.2	127	50	157	88	187	142	217	215	247	311	277	433	307	584	337	768	367	988	397	1247
98	25.8	128	51	158	89	188	144	218	218	248	315	278	438	308	590	338	775	368	996	398	1256
99	26.5	129	52	159	91	189	146	219	221	249	318	279	442	309	596	339	782	369	1004	399	1266
100	27.2	130	53	160	93	190	148	220	224	250	322	280	447	310	601	340	789	370	1012	400	1275
101	27.9	131	54	161	94	191	150	221	227	251	326	281	452	311	607	341	795	371	1020	401	1284
102	28.6	132	55	162	96	192	153	222	230	252	330	282	456	312	613	342	802	372	1028	402	1294
103	29.3	133	57	163	97	193	155	223	232	253	333	283	461	313	618	343	809	373	1036	403	1304
104	30.0	134	58	164	99	194	157	224	235	254	337	284	466	314	624	344	816	374	1045	404	1313
105	30.8	135	59	165	101	195	159	225	238	255	341	285	470	315	630	345	823	375	1053	405	1323
106	31.5	136	60	166	102	196	162	226	241	256	345	286	475	316	636	346	830	376	1061	406	1333
107	32.3	137	61	167	104	197	164	227	244	257	349	287	480	317	642	347	837	377	1070	407	1342
108	33.1	138	62	168	106	198	166	228	248	258	353	288	485	318	648	348	844	378	1078	408	1352
109	33.8	139	64	169	107	199	169	229	251	259	357	289	490	319	654	349	852	379	1087	409	1362
110	34.6	140	65	170	109	200	171	230	254	260	361	290	495	320	660	350	859	380	1095	410	1372
111	35.5	141	66	171	111	201	173	231	257	261	365	291	500	321	666	351	866	381	1104	411	1382
112	36.3	142	67	172	113	202	176	232	260	262	369	292	505	322	672	352	873	382	1112	412	1392
113	37.1	143	69	173	115	203	178	233	263	263	373	293	510	323	678	353	881	383	1121	413	1402
114	38.0	144	70	174	116	204	181	234	267	264	377	294	515	324	684	354	888	384	1130	414	1412
115	38.8	145	71	175	118	205	183	235	270	265	381	295	520	325	691	355	896	385	1138	415	1422
116	39.7	146	72	176	120	206	186	236	273	266	385	296	525	326	697	356	903	386	1147	416	1433
117	40.6	147	74	177	122	207	188	237	276	267	389	297	531	327	703	357	911	387	1156	417	1443
118	41.5	148	75	178	124	208	191	238	280	268	394	298	536	328	709	358	918	388	1165	418	1453
119	42.4	149	76	179	126	209	194	239	283	269	398	299	541	329	716	359	926	389	1174	419	1463
120	43.3	150	78	180	128	210	196	240	287	270	402	300	546	330	722	360	933	390	1183	420	1474

Table 2: Circumference vs. Estimated Weight

Inches	Lbs.	Inches	Lbs.	Inches	Lbs.	Inches	Lbs.	Inches	Lbs.	Inches	Lbs.	Inches	Lbs.	Inches	Lbs.
31	16.5	51	50.7	71	108	91	198	111	329	131	516	151	753	171	1135
32	17.8	52	53	72	112	92	204	112	337	132	527	152	768	172	1160
33	19.1	53	55.3	73	116	93	209	113	345	133	537	153	783	173	1186
34	20.5	54	57.7	74	119	94	215	114	353	134	548	154	798	174	1212
35	21.9	55	60.1	75	123	95	221	115	361	135	558	155	814	175	1239
36	23.4	56	62.6	76	127	96	227	116	369	136	569	156	830	176	1267
37	24.8	57	65.2	77	131	97	233	117	378	137	580	157	847	177	1296
38	26.4	58	67.8	78	136	98	239	118	386	138	591	158	864	178	1326
39	28	59	70.5	79	140	99	245	119	395	139	602	159	881	179	1356
40	29.6	60	73.2	80	144	100	251	120	404	140	613	160	899	180	1387
41	31.3	61	76	81	149	101	258	121	413	141	625	161	918	181	1419
42	33	62	78.9	82	153	102	264	122	423	142	636	162	937	182	1452
43	34.7	63	81.9	83	158	103	271	123	434	143	648	163	956	183	1486
44	36.6	64	84.9	84	162	104	278	124	444	144	660	164	977	184	1520
45	38.4	65	88	85	167	105	285	125	455	145	673	165	997	185	1556
46	40.3	66	91.2	86	172	106	292	126	465	146	685	166	1019	186	1592
47	42.3	67	94.5	87	177	107	299	127	475	147	698	167	1041	187	1629
48	44.3	68	97.8	88	182	108	306	128	486	148	711	168	1063	188	1668
49	46.4	69	101	89	187	109	314	129	496	149	725	169	1086	189	1707
50	48.5	70	105	90	193	110	321	130	506	150	739	170	1110	190	1747

Tables prepared
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from equations
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