1. Title of your project: ***Shocking*** **Plant Discoveries**

Trial Diary TRIAL #1 (0 volts/control) DATE:12-9-2025 - 1-1-2026

Trial Start– 12-9-2025 7:01 AM

Trial End – 1-1-2026 8:01 PM

- ☐ **Independent variables:** The voltage delivered into the plant measured in Volts.(no voltage, 30 volt 22 volt and 14 volt)
- ☐ **Dependent variables**: The change in volume(cubic cm.)
- ☐ **Control**: Amount of water given, the amount of light given, the type of plant, the type and fertilizer used for soil, type of water, starting volume of plant, length of the time the voltage is going through it, and other electrical variables that are not the independent variable such as amps and DC.

Brief summary of what happened in your experiment.

Towards the beginning of the experiment the plants had relatively steady growth, but around day 9 the movement on their height got a bit jerkier and all over the place. During the experiment the plants didn't show any sign of death or decay. The no voltage plants thrived during the experiment.

What were your results?

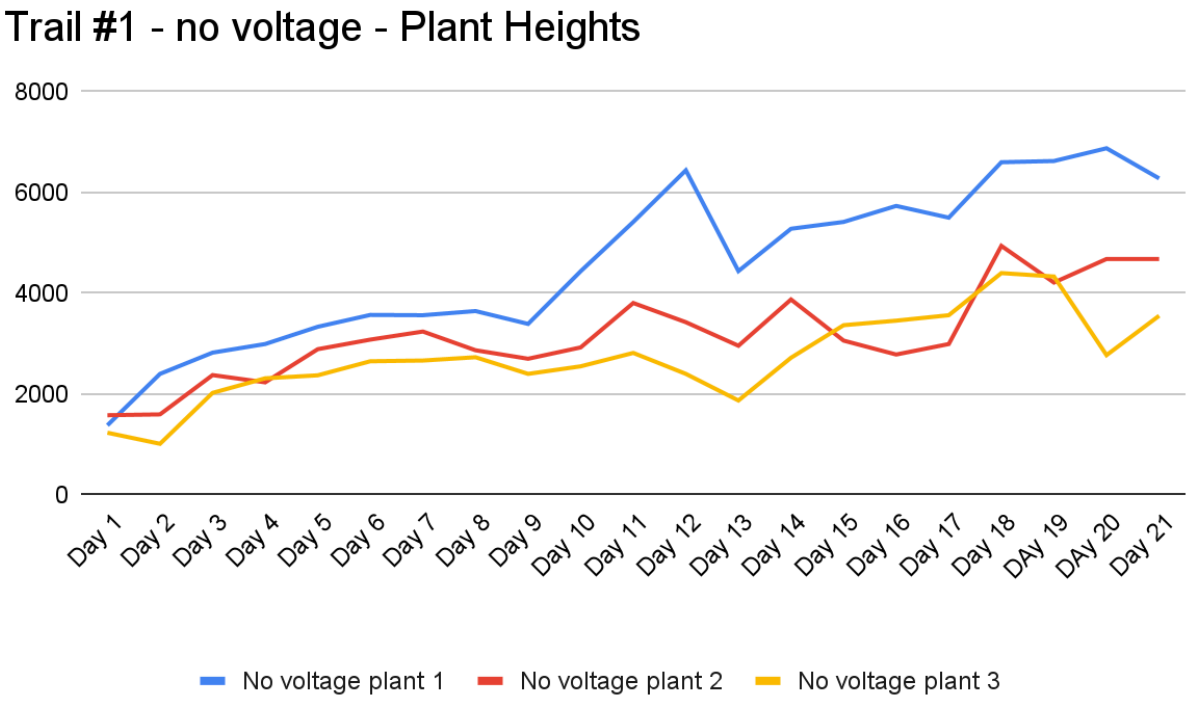
On average the first no voltage plant grew at 262 sq. centimeters a day. The second one grew about 177 sq. centimeters a day. And finally the third no voltage plant grew on average 136 sq. centimeters a day. As a group they grew about 192 sq. centimeters a day. The no voltage plants grew on average the most compared to the other voltages.

Is this what you expected would happen? Why or why not.

No this is not what I expected to happen, I expected one of the electrified plants to come out on top like the 22 volts or 14 volts, because I thought the energy might be able to replace photosynthesis.

Note any thoughts or observations about your experiment.

I noticed that the no-voltage plants, besides just being bigger, also are a bit more condensed. Unlike the other plants that were all spread out these plants seemed to grow in unison.



PLANT HEIGHTS FOR NO VOLTAGE	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10	Day 11	Day 12	Day 13	Day 14	Day 15	Day 16	Day 17	Day 18	DAy 19	DAy 20	Day 21
No voltage plant 1	1380	400	2822	2993	3335	3570	3564	3647	3392	4437	5415	6440	4440	5280	5415	5733	5500	6600	6624	6877	6279
No voltage plant 2	1580	1596	2376	2232	2890	3080	3240	2869	2700	2925	3806	3426	2958	3876	3060	2784	2992	4940	4212	4680	4680
No voltage plant 3	1232	1013	2023	2312	2372	2651	2665	2730	2400	2550	2816	2400	1872	2720	3366	3456	3564	4400	4332	2772	3553

8. TRIAL 2

Trial Diary TRIAL #2 (14 volts) DATE:12-9-2025 - 1-1-2026

Trial Start– 12-9-2025 7:01 AM

Trial End – 1-1-2026 8:01 PM

- ☐ **Independent variables**: The voltage delivered into the plant measured in Volts.(no voltage, 30 volt 22 volt and 14 volt)
- ☐ **Dependent variables**: The change in volume(cubic cm.)
- ☐ **Control**: Amount of water given, the amount of light given, the type of plant, the type and fertilizer used for soil, type of water, starting volume of plant, length of the time the voltage is going through it, and other electrical variables that are not the independent variable such as amps and DC.

Brief summary of what happened in your experiment.

In the experiment the first 14 volt plant had a bumpy growth the whole time.While the other two 14 volt plants were to some extent smooth but then the second one started getting bumpy later on. All of the 14 volt plants were healthy the entire time.

What were your results?

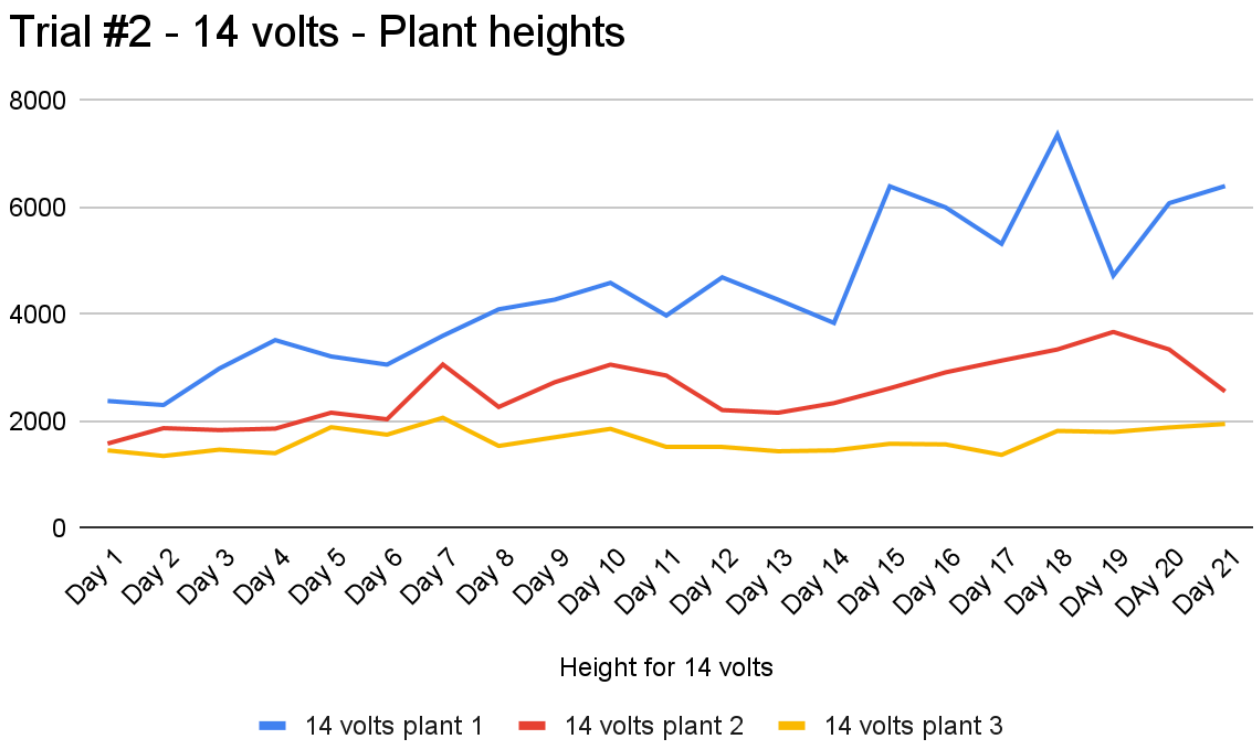
The first 14 volt plant grew on average 250 sq. centimeters everyday. The second 14 volt grew on average 67 sq. centimeters each day. The final 14 volt grew on average 91 sq. centimeters each day. On average all the 14 volt plants grew approximately 136 sq. centimeters each day. The 14 volts grew more than the 22 volts and 30 volts but grew less than the no voltage plants.

Is this what you expected would happen? Why or why not.

No this is not what I expected would happen because I thought the voltage would stimulate them to at least grow more then the no voltages but the 22 volts and 30 volts would grow more.

Note any thoughts or observations about your experiment.

Overall the 14 volt plants look healthy except for the 3rd one which was growing wonky. I do not think this is because of the electricity, I think it is just the plant.



PLANT HEIGHTS FOR 14 VOLTS	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10	Day 11	Day 12	Day 13	Day 14	Day 15	Day 16	Day 17	Day 18	DAy 19	DAy 20	Day 21
14 volts plant 1	2380	2304	2988	3519	3213	3060	3600	4095	4275	4590	3978	4693	4275	3840	6395	6000	5320	7360	4725	6080	6400
14 volts plant 2	1584	1872	1836	1863	2161	2038	3063	2268	2730	3060	2856	2210	2160	2340	2618	2916	3135	3344	3672	3344	2560
14 volts plant 3	1456	1352	1470	1404	1890	1750	2066	1539	1701	1859	1521	1521	1440	1456	1580	1568	1372	1820	1800	1885	1950

8. TRIAL 3

Trial Diary TRIAL #3 (22 volts) DATE:12-9-2025 - 1-1-2026

Trial Start– 12-9-2025 7:01 AM

Trial End – 1-1-2026 8:01 PM

- ☐ Independent variables: The voltage delivered into the plant measured in Volts.(no voltage, 30 volt 22 volt and 14 volt)
- ☐ Dependent variables: The change in volume(cubic cm.)
- ☐ Control: Amount of water given, the amount of light given, the type of plant, the type and fertilizer used for soil, type of water, starting volume of plant, length of the time the voltage is going through it, and other electrical variables that are not the independent variable such as amps and DC.

Brief summary of what happened in your experiment.

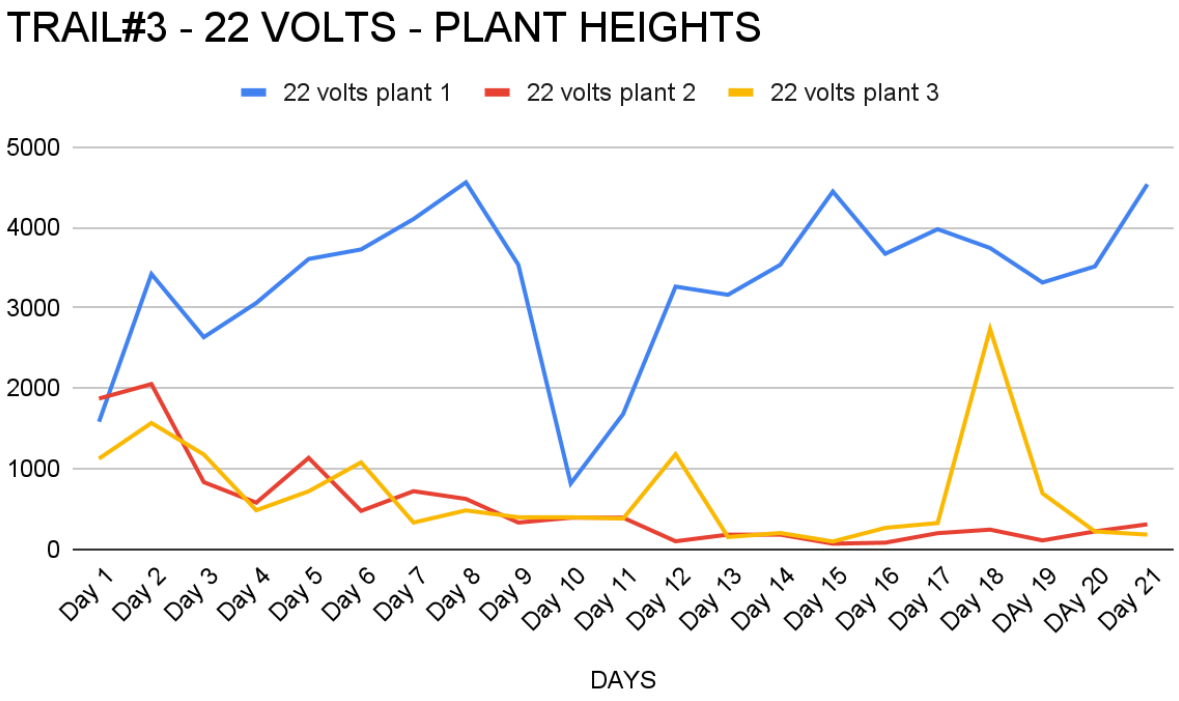
Over the entire course of the experiment the 22 volt had a bumpy growth. Only toward the end when the second and third plants died did the growth pattern seem to smooth out for those two. The 2 plants died around day 3.

What were your results?

The first 22 volt plant grew on average 166 sq. centimeters everyday. The second 22 volt grew on average -18 sq. centimeters each day. The final 22 volts grew on average -39 sq. centimeters each day. On average all the 22 volt plants grew approximately 36 sq. centimeters each day. The 22 volts grew more than the 30 volts but grew less than the no voltage plants, and the 14 volt plants.

Is this what you expected would happen? Why or why not. No, this is not what I expected to happen, I was expecting for the 22 volt plants to grow the most, not to go almost directly to death. The first 22 volt was one of the best plants in the entire experiment but the sudden death of the 2 others was unexpected.

Some of the rods on all of the plants seemed to be dissolving or something and making the water coming out the bottom rusty as seen in the picture it made a mess on the table.



Height for 22 volts	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10	Day 11	Day 12	Day 13	Day 14	Day 15	Day 16	Day 17	Day 18	DAy 19	DAy 20	Day 21
22 volts plant 1	1584	3420	2635	3060	3608	3726	4104	4560	3536	816	1680	3264	3162	3536	4446	3672	3978	3744	3315	3515	4536
22 volts plant 2	1872	2052	832	578	1134	475	720	624	330	390	390	98	180	180	68	80	198	242	108	220	308
22 volts plant 3	1125	1568	1176	483	719	1078	330	481	396	396	380	1180	150	200	95	264	324	2736	693	220	180

8. TRIAL 4

Trial Diary TRIAL #4 (30 volts) DATE:12-9-2025 - 1-1-2026 `

Trial Start– 12-9-2025 7:01 AM

Trial End – 1-1-2026 8:01 PM

- ☐ **Independent variables**: The voltage delivered into the plant measured in Volts.(no voltage, 30 volt 22 volt and 14 volt)
- ☐ **Dependent variables**: The change in volume(cubic cm.)
- ☐ **Control**: Amount of water given, the amount of light given, the type of plant, the type and fertilizer used for soil, type of water, starting volume of plant, length of the time the voltage is going through it, and other electrical variables that are not the independent variable such as amps and DC.

ALL DAYS- MEASURED EACH PLANT WITH A CM STICK AND WROTE DOWN MEASUREMENTS ON A WHITEBOARD, WATERED ALL PLANTS, RECORDED RESULTS.

Brief summary of what happened in your experiment.

The second and third 30 volt plants had a smooth growth. The

second plant grew the smoothest only one day suddenly jumping up. And the last one had a smooth growth for the first few days then it started going all over the place.

What were your results?

The first 30 volt plant grew on average 88 sq. centimeters everyday. The second volt grew on average -27 sq. centimeters each day. The final 30 volts grew on average 36 sq. centimeters each day. On average all the 30 volt plants grew approximately 32 sq. centimeters each day. The 30 volts grew the least of all the plants.

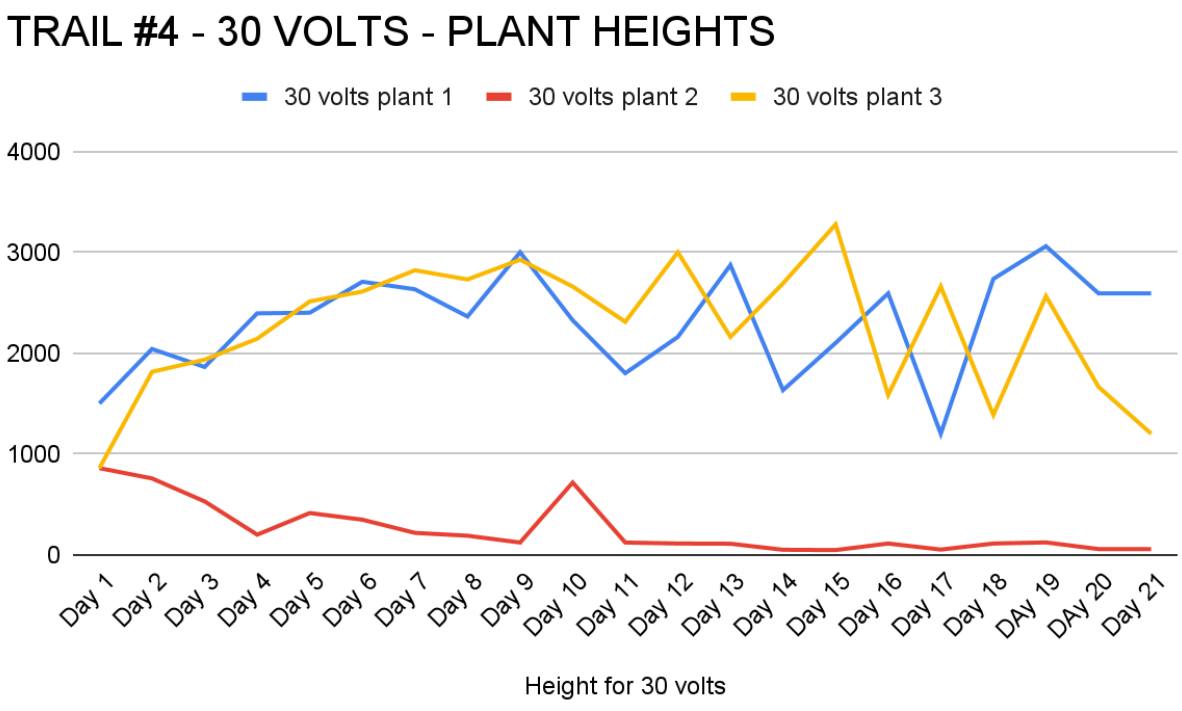
Is this what you expected would happen? Why or why not.

No this was not what I was expecting to happen. I was expecting all the 30 volt plants to die but only the second one did. I also wasn't expecting the first one to be somewhat healthy.

Note any thoughts or observations about your experiment.

I noticed that towards the end of the experiment the third plant looked like it was starting to die. I also noticed when I was removing the stakes that my earlier observation of the stakes dissolving wasn't completely true, the positive stake was the on dissolving.

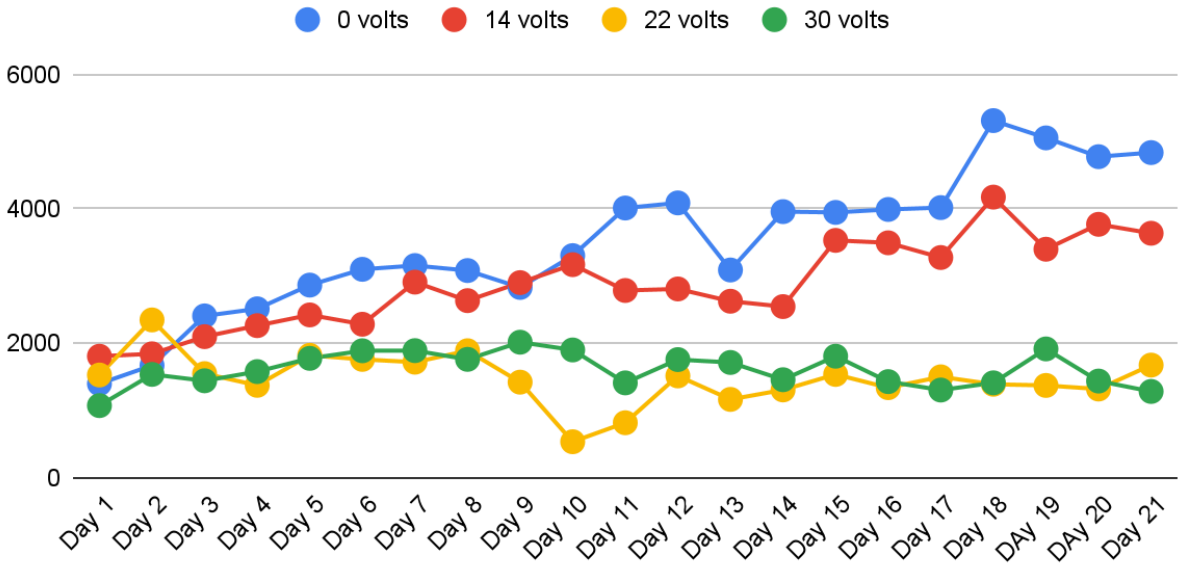
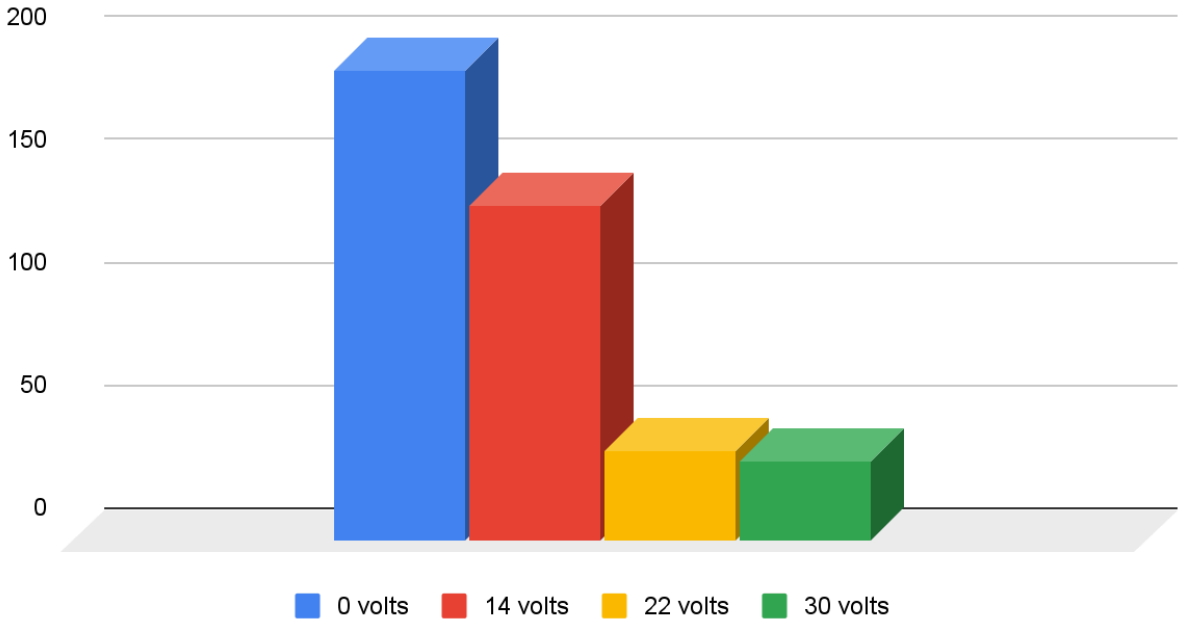
(Including any drawings, graphs or charts and 3 trials with notes)


TRAIL #4 - 30 VOLTS - PLANT HEIGHTS
30 volts plant 1
30 volts plant 2
30 volts plant 3
4000
3000
2000
1000
0
Day 1
Day 2
Day 3
Day 4
Day 5
Day 6
Day 7
Day 8
Day 9
Day 10
Day 11
Day 12
Day 13
Day 14
Day 15
Day 16
Day 17
Day 18
DAy 19
DAy 20
Day 21
Height for 30 volts

Change in Height vs. The Voltage Delivered into a Plant

	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10	Day 11	Day 12	Day 13	Day 14	Day 15	Day 16	Day 17	Day 18	DAy 19	DAy 20	Day 21	average
No voltage plant 1	610	1020	422	171	342	236	-6	83	-255	1046	978	1025	-2000	840	135	318	-233	1100	24	253	-598	262
No voltage plant 2	612	17	780	-144	658	190	160	-371	-169	225	881	-381	-468	918	-816	-276	208	1948	-728	468	0	177
No voltage plant 3	539	-220	1011	289	60	279	14	65	-330	150	266	-416	-528	848	646	90	108	836	-68	-1560	781	136
14 volts plant 1	1228	-76	684	531	-306	-153	540	495	180	315	-612	715	-418	-435	2555	-395	-680	2040	-2635	1355	320	250
14 volts plant 2	432	288	-36	27	298	-124	1025	-795	462	330	-204	-646	-50	180	278	298	219	209	328	-328	-784	67
14 volts plant 3	1421	-104	118	-66	486	-140	316	-527	162	158	-338	0	-81	16	124	-12	-196	448	-20	85	65	91
22 volts plant 1	528	1836	-785	425	548	119	378	456	-1024	-2720	864	1584	-102	374	910	-774	306	-234	-429	200	1021	166
22 volts plant 2	1179	180	-1220	-255	557	-659	245	-96	-294	60	0	-293	83	0	-113	12	118	44	-134	112	88	-18
22 volts plant 3	124	443	-392	-693	236	359	-748	151	-85	0	-17	801	-1030	50	-106	170	60	-142	511	-473	-40	-39
30 volts plants 1	750	540	-178	532	6	308	-75	-270	638	-675	-525	360	713	-1241	468	492	-1392	1536	324	-468	0	88
30 volts plant 2	228	-102	-228	-330	215	-66	-131	-28	-68	595	-595	-10	-2	-60	-3	65	-60	60	11	-66	0	-27
30 volts plant 3	422	956	120	208	370	98	212	-92	196	-266	-350	690	-840	531	585	-1692	1076	-1274	1179	-901	-464	36

Average Height



Electricity vs.Average Change on All Plants