

How Will Microwaves Affect The Germination of Sunflower Seeds

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Background Information

Microwaves are a pretty common sight everywhere today but lots of people do not know what they really do. They heat objects up from the inside out and can even dry out some things entirely³. They can have other affects on items as well which is what led me to wanting to do this experiment in the first place.

Objective

My objective for this experiment was to see if the microwaving of sunflower seeds changed their growth rates. I expected that the microwaved seeds would not grow all that well after exposure to the microwaves.

Methods

I ran each of the seeds individually through the microwave and then sorted them into their containers. I also set aside a control group of seeds that would not be exposed to the microwaves. After that I filled them with dirt, watered them and set them up in their spot to grow. Then as the plants sprouted I measured their overall height to see which progressed the furthest.

Materials

- Sunflower Seeds
- Water bottles to make into pots for plants
- Microwave
- Tape measure
- Popsicle sticks for marking groups.
- Containers to water the plants with.

Works Cited

1. International Agrophysics. Volume 27, Issue 2, Pages 127–132, ISSN (Print) 0236-8722, DOI: <https://doi.org/10.2478/v10247-012-0077-8>, April 2013
2. Lima, Denise de Castro, Dutra, Alek Sandro, Pontes, Felipe Moura, & Bezerra, Francisco Thiago Coelho. (2014). Storage of sunflower seeds. *Revista Ciência Agronômica*, 45(2), 361-369. <https://dx.doi.org/10.1590/S1806-66902014000200018>
3. S. Chandrasekaran, S. Ramanathan, Tanmay Basak, Microwave food processing—A review, *Food Research International*, Volume 52, Issue 1, June 2013, Pages 243-261, ISSN 0963-9969, <http://dx.doi.org/10.1016/j.foodres.2013.02.033>.<http://www.scienc5>

Results of Experiment

The experiment did not work out exactly how I expected. The seeds that were microwaved for 10 and 20 seconds actually outpaced the control group in their overall growth as of this time as can be seen in Figure 1. However the other plants which were exposed to 30 seconds and up of microwaving have not shown any signs at all of sprouting which was more in line with what I had expected. The overall condition of the seeds could have also been changed if the microwave was on a different wattage then was stated at the same amount of time¹. It is unlikely this was due to the seeds themselves because sunflowers seeds should be fine in their packaging for up to 12 months².

Discussions

What all of this means is that as of right now the experiment did not go exactly as I had expected it to. The microwaving for a short amount of time seemed to cause the sunflower seeds to start sprouting even earlier than the control group which had no exposure. As of right now it would seem my hypothesis was not supported about which seeds would grow the best but further testing may still yield results that the control group wins out in overall growth over a longer period of time if not immediate height.

Figure 1

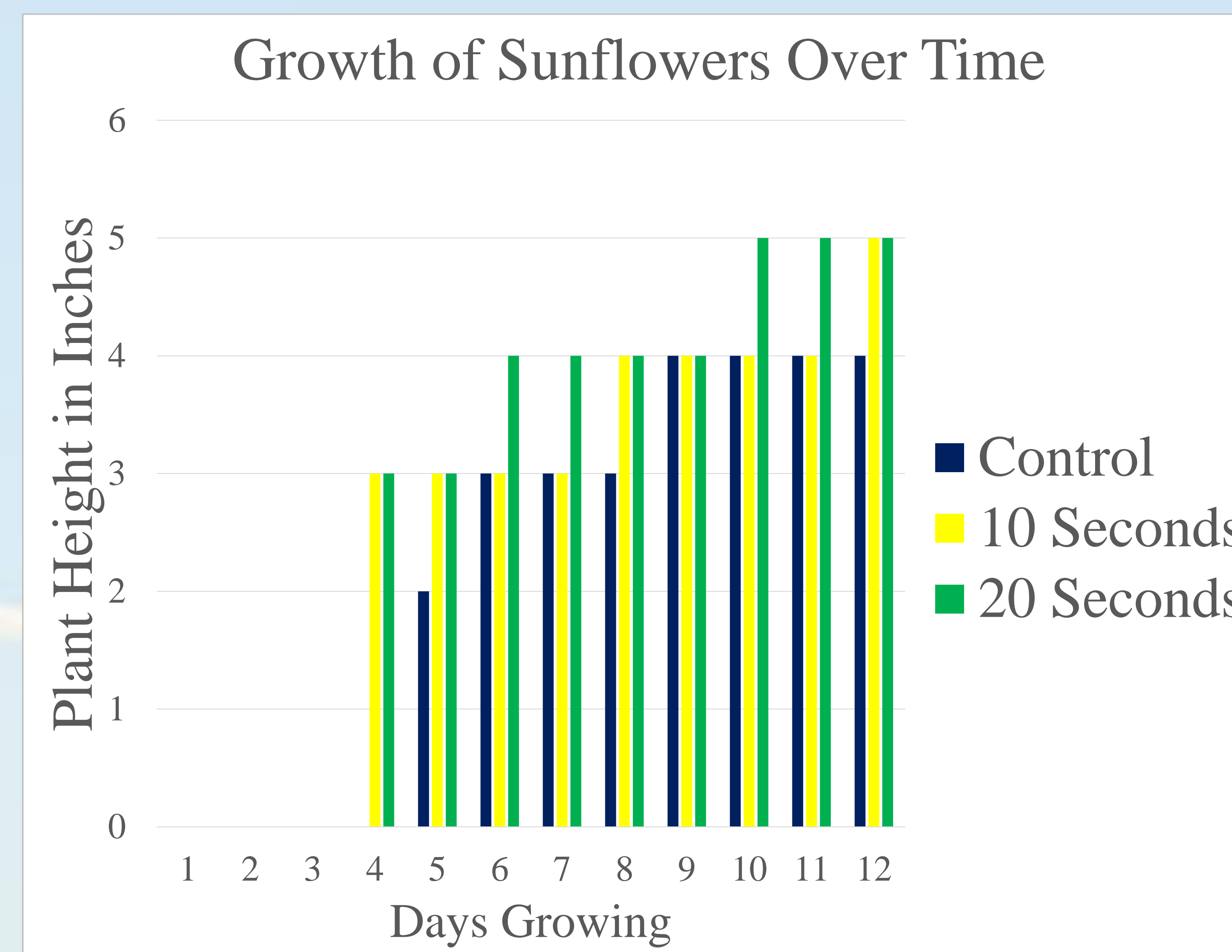


Figure 2