

Haley Matteson

Junior Division Plant Sciences

The Effects Of Global Warming On The Germination Of Crop, Flower And Weed Seeds

This project studied the effects of projected global warming temperatures on the germination of crop, flower, and weed seeds. The temperature for the control was 23 C, an average springtime temperature. The other temperatures tested on all seed types were 25 C, 27 C, 29 C, and 31 C. These temperatures covered a 7 C Global Warming projection for the next 50-100 years. 100 seeds were germinated in each of the (80) 500ml flasks. Data, collected daily, included the initial germination time in days, the rate of germination, and the percent of germination for each seed type at each temperature. I hypothesized that as the temperature increased, initial germination would take longer and there would be less over-all germination. But what I found out was that not all seeds germinate, or germinate at the same time and that higher temperatures didn't affect all seeds the same way. Dandelion germination was earlier than the control, had a much slower rate, but had 2 and 1/2 times as much total germination as the control. Germination was progressively better at the temperature rose. Dandelion thrives with temperature increases. Zinnias and Weed #1 germinated earlier than the control, but had the same rate of germination and over- all germination percents as the control. They did well in higher temperatures. Hybrid seeds were less affected by temperature, germinated faster at high temperatures and had similar germination rates and total germination percents to the control. In general, the other 8 non-hybrid seeds germinated earlier at higher temperatures but didn't do as well over-all.