Name(s)

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Project Number

J1920

Project Title

Cryopreservation: To Grow or Not to Grow?

Abstract

Objectives/Goals

This Science Project answered the question, "Does cryopreservation impact the rate at which seeds will germinate?" The objective of the project was to learn if a plant's growth rate would increase if it had been cryopreserved for a certain duration before it had been planted.

Methods/Materials

Materials: Marigold Seeds, 9 planter pots, soil, measuring spoons, and water. The 9 planter pots were supplied by a friend. Method: Froze seeds for varying durations of time and then planted them, observing which group of seeds sprouted first.

Results

A group of seeds frozen for 11 days, another for 6 days, and a group of marigold seeds not frozen at all were distributed to 9 pots, 3 pots per group. The number of days it took for each group to sprout was recorded. The findings were that the group of marigold seeds cryoperserved for 11 days (the longest amount of time) sprouted first in 4 days. The group of seeds that were not cryoperserved at all sprouted second, also on day 4 of growing. The group of seeds cryoperserved for 6 days sprouted last, many hours after the first two groups, also on the fourth day of growing. The growth of the seeds measured in centimeters were recorded until the ninth day of growing.

Conclusions/Discussion

The growth of 3 groups of seeds cryopreserved (frozen) for different durations of time (11 days, 6 days, and 0 days) revealed that seeds that have been cryopreserved may grow faster than seeds that have not been cryopreserved. It was concluded that the longer a seed is cryoperserved for, the faster it will grow compared to a seed that has not been cryoperserved.

Summary Statement

As measured by the time it took for the plants to sprout, I found that the longer a seed is cryoperserved for, the faster it will grow compared to a seed that has not been cryoperserved.

Help Received

None. I designed and tested the experiment myself.