

Greater San Diego Science and Engineering Fair

2015 PROJECT SUMMARY

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Project Title: GMO Crops vs. Organic Crops. The Real Truth.

Abstract

Objectives/Goals:

The objective of this experiment was to find the differences between GMO and Organic seeds and their benefits and disadvantages. The world should not have to rely on large manufacturers of seeds to see the truth between technology and tradition. This experiment will educate the general public about the safeties and concerns about these seeds so they can make wiser choices.

Hypothesis: The experimenter hypothesizes that, GMO seeds will grow 20% taller than the organic seeds in the same time. The GMO seeds will also have a 20% higher crop yield if there are any crops. GMO seeds will require less resources such as water, space, nutrients, and sunlight. The organic seeds will take longer to grow and to produce crops.

Methods/Materials:

Prepare a growing place for testing. At least 3 m long and 1 m wide. Mark the areas where the seeds will grow. Level the ground that the seeds are being grown on. Plant the seeds. Give each seed a 5 cm sq. area to grow. Count each seed as you plant them in the ground. Make sure to write which seeds they are and where they are growing. Water each seed 60 ml each day for the next 2 months. Record data about the seeds such as height, color, crop yield if any, leaf # and anatomy from every seed section. Take a picture of 1 of the plants from all sections each day.

56 GMO Pima Cotton seeds, 112 Organic Pima Cotton seeds, 56 GMO Silo Milo seeds, 112 Organic Silo Milo seeds, 4 sq. m of growing space, 60 ml of water for each seed, 1 Industrial microscope, 30 slides, 1 Metric ruler, 1 Notebook to record data.

Results:

The GMO seeds were 139% more effective in the Pima Cotton section in terms of repelling weeds, growth height, amount of leaves, and number of germinated seeds. The Organic seeds were 48% more effective in the Silo Milo section in terms of those same traits. More time may be needed to fully gain enough data to make a true and accurate choice on either GMO plants or organic plants. The results in this experiment can only introduce what is to come with GMO seeds.

Conclusions/Discussion:

Some GMO plants may be useful to farmers but on the other hand, Organic seeds had a stronger turnout against GMO plants in the Silo Milo group. The organic crops were given basic needs to grow and still outperformed the GMO Silo Milo seeds. The GMO seeds were able to withstand the basic need in the Pima Cotton and still became stronger than the Organic plants after the 4 weeks of testing.

Summary Statement

GMO seeds may not be the best choice from the data that was gained in this experiment. As stated, the GMO seeds were more effective in the Pima Cotton section but failed to reach the standard in the Silo Milo section. GMO seeds were said to be able to withstand many incidents but it seems like the GMO seeds were not able to match the Silo Milo organic seeds.

Help Received

Thanks to my parents, my brother, and Mr. Mark Harnetiaux.