Identifying Liquids in which Seeds Grow Best

Science Fair

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Problem: which liquid do sunflowers grow best with?

Variables

|  |  |  |
| --- | --- | --- |
| Controlled | Manipulated | Responding |
| - Liquid (3ml) -sunflower seeds  -Environment  -Light  -Soil | -Type of liquid | -Height (cm)  -Greenness  -Health of plant |

Hypothesis

I think fertilized water will grow the best because fertilizer has stuff in it that plants need to grow. The things found in fertilizer lack in the other liquids so I believe with the extra boost of necessary stuff they will grow better than the lacking liquids. If they are watered the same, in the same place, with the same dirt, and same light the fertilized water will grow the best.

Materials

* Sunflowers
* Dirt
* Pots
* Water (3 ml)
* Milk (3 ml)
* Vinegar (3 ml)
* Orange juice (3 ml)
* Sugar water (3 ml)
* Fertilized water (3 ml)
* Ruler

Procedure

1. Put dirt in pots
2. Plant sunflowers
3. Water plants with liquids (3 ml)
4. Put plant near window
5. (After 3 days) record height
6. Repeat step 3 and 4 for 5 weeks (check every Monday)

Analysis

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| water | milk | Vinegar | Orange juice | Sugar water | Fertilized water |
| 1.1 cm white green | 1.2 cm  nothing | 0 cm  nothing | 0 cm  nothing | 1.2 cm  white/green tip | 2.1 cm  white green |
| 2.3 cm  White tip and green base (sunflower seed on it) | 2.2 cm  yellow green w/ sunflower seed | * 1. cm   yellow green w/ sunflower seed | * 1. cm   white green w/ seed | 2.3 cm  White green tip w/ seed | 3.3 cm  White tip and green base (sunflower seed on it) |
| 3.4 cm  Green (no seed) | 3.3 cm  Yellow Green w/seed | * 1. cm   Yellow Green w/seed | 2.3 cm  white green w/seed | 3.1 cm  white green (no seed) | 5.3 cm  Green (no seed) |
| 5.5 cm  Green/closed leaf | 3.8 cm  yellow/brown  green | 2.2 cm Yellow/brown  green | 3.5 cm  Green/  yellow | 5.4 cm  Light green leaf bud | 6.6 cm  blue Green/closed leaf |
| * 1. Cm   Green/open leaf | 4.1 cm  brown | 3.1 cm  Brown | 4.1 cm  Light Green/  yellow | 6.3 cm  light green leaf closed | 7.2 cm  blue Green/open leaf |

Conclusion: I conclude animals grew the best just like I said in my hypothesis. I believe it’s due to the fact the extra things in the fertilizer helped the plant grow in height, color and health. They grew significantly more than the other liquids in all three categories.