25% Caffeine Solution.

The seeds that I am watering with the 25% solution were planted on the 19th of January, 2001 - way before the rest of my samples. They have survived while others either died or did not show up at all. To have more data for my project and to not through away the live plants, I’ve decided to still use them for the project while the rest of the radish was replanted. The “25% solution” plants before I’ve started watering them with caffeine remained of the same average height for a month or so after they grew up to the certain height. The table below shows the amount of leaves on each plant, as well as the sizes of the leaves and the amount of plants in each pot on the day that I have started my project - the 20th of March, 2001:

**Week #1**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Tray with a plant** | **Amount of radish plants in a tray** | **Amount of large leaves** | **Amount of medium leaves** | **Amount of small leaves** |
| #1 | 1 | 5 | 1 | no |
| #2 | 1 | 4 | 2 | no |
| #3 | 1 | 1 | 3 | 1 newborn |
| #4 | 1 | 4 | 1 | no |
| #5 | 1 | 2 | 3 | 1 newborn |
| #6 | 1 | 4 | 1 | 1 |
| #7 | 1 | 4 | 1 | 1 newborn |
| #8 | 1 | 4 | 2 | 1 newborn |
| #9 | 1 | 5 | 1 | no |
| #10 | 1 | 5 | 1 | no |
| #11 | 1 | 4 | 2 | 1 newborn |
| #12 | 1 | 3 | 2 | 1 newborn |
| #13 | 1 | 5 | 1 | no |
| #14 | 1 | 4 | 2 | 1 newborn |
| #15 | 1 | 5 | 1 | 1 newborn |
| #16 | 1 | 3 | 3 | no |

The table above shows **how** the data is being collected. Further on the tables will be showing only the average of the data collected from the plants. That way the difference will be seen more clearly between the data of different weeks. And the table above is an explanation of how I am collecting the data.

Looking at the data after a week of watering them with a “25% solution” we can see if the rate of their growth is big in compare with the rate of growth of other plants that are being watered with different caffeine solutions.

The leaves have green color and their stems have a dark pink color. Table below

shows the average width and length of the leaves.

|  |  |
| --- | --- |
| **Size of the leaves** | **Amount of the leaves in the 25 % caffeine samples** |
| Large | 59 |
| Medium | 27 |
| Small | 1 |
| Newborn | 8 |

|  |  |  |
| --- | --- | --- |
| **Sizes of the Leaves** | **Average Length** | **Average Width** |
| Large Leaves | 4.18 cm | 3.25 cm |
| Medium Leaves | 3.45 cm | 2.3 cm |
| Small Leaves | 1.93 cm | 1.56 cm |
| Newborn Leaves | .95 cm | .56 cm |

**The average high of plants is 7.36 cm.**

The table above shows us that there are many large leaves, not as many medium

size leaves almost no small ones (could be explained by medium leaves to be just

reaching its medium size and therefore the newborns are just showing and will start to grow to become small and turn into medium and then big).

**Week #2**

The results of data collection are shown below in tables:

|  |  |
| --- | --- |
| **Size of the leaves** | **Amount of the leaves in the 25 % caffeine samples** |
| Large | 29 |
| Medium | 35 |
| Small | 26 |
| Newborn | 7 |

Almost the same results were observed in the plants that have no caffeine in the soil. The medium size leaves grew larger, the newborns appeared, and now they have reached small size, while medium ones grew even larger. Some newborns appeared as well, but not many in compare with the whole size of the sample.

The average length and width of the leaves of the week #2 data collection you can see below:

|  |  |  |
| --- | --- | --- |
| **Sizes of the Leaves** | **Average Length** | **Average Width** |
| Large Leaves | 5.22 cm | 3.55 cm |
| Medium Leaves | 3.92 cm | 2.5 cm |
| Small Leaves | 3.2 cm | 2.24 cm |
| Newborn Leaves | 1.42 cm | 1.2 cm |

**The average height of plants is 10.74 cm.**

**Week #3**

|  |  |
| --- | --- |
| **Size of the leaves** | **Amount of the leaves in the 25 % caffeine samples** |
| Large | 37 |
| Medium | 55 |
| Small | 34 |
| Newborn | 15 |

|  |  |  |
| --- | --- | --- |
| **Sizes of the Leaves** | **Average Length** | **Average Width** |
| Large Leaves | 6.23 cm | 4.15 cm |
| Medium Leaves | 4.05 cm | 3.05 cm |
| Small Leaves | 3.3 cm | 2.6 cm |
| Newborn Leaves | 1.47 cm | 0.77 cm |

**The average height of the plants is 11.26 cm.**

**Week #4**

|  |  |
| --- | --- |
| **Size of the leaves** | **Amount of the leaves in the 25 % caffeine samples** |
| Large | 33 |
| Medium | 67 |
| Small | 29 |
| Newborn | 44 |

|  |  |  |
| --- | --- | --- |
| **Sizes of the Leaves** | **Average Length** | **Average Width** |
| Large Leaves | 6.38 cm | 4.28 cm |
| Medium Leaves | 4.28 cm | 3.03 cm |
| Small Leaves | 2.83 cm | 2.43 cm |
| Newborn Leaves | 1.53 cm | 1.23 cm |

**The average height is 22.62 cm.**

**Week #5**

|  |  |
| --- | --- |
| **Size of the leaves** | **Amount of the leaves in the 25 % caffeine samples** |
| Large | 38 |
| Medium | 55 |
| Small | 37 |
| Newborn | 33 |

|  |  |  |
| --- | --- | --- |
| **Sizes of the Leaves** | **Average Length** | **Average Width** |
| Large Leaves | 7.10 cm | 4.43 cm |
| Medium Leaves | 4.63 cm | 3.58 cm |
| Small Leaves | 3.28 cm | 2.38 cm |
| Newborn Leaves | 1.63 cm | 1.13 cm |

**The average height of plants is 33.86 cm.**

The temperature:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Weeks of watering with caffeine:** | **Minimum temperature of the week** | **Maximum temperature of the week** | **Humidity when the temperature was minimum** | **Humidity when the temperature was maximum** |
| #1 | 1ْC | 51ْC | 53% | 55% |
| #2 | 1ْC | 51ْC | 43% | 43% |
| #3 | 1ْC | 51ْC | 54 % | 56% |
| #4 | 1ْC | 51ْC | 44% | 44% |
| #5 | 1ْC | 51ْC | 73% | 74% |