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| [**Home**](http://docs.google.com/home.htm)  [**Abstract**](http://docs.google.com/abstract.htm)  [**Introduction**](http://docs.google.com/introduction.htm)  [**Review of Literature**](http://docs.google.com/literature_review.htm)  [**Procedure**](http://docs.google.com/procedure.htm)  [**Data**](http://docs.google.com/data.htm)  [**Conclusion**](http://docs.google.com/conclusion.htm)  [**Cross Sections**](http://docs.google.com/cross_sections.htm)  [**Journal**](http://docs.google.com/journal.htm)  [**References**](http://docs.google.com/references.htm)  [**bonus..**](http://docs.google.com/bonus.htm) |  | **In regards to strengthening tissues…**  Through our measurements, observations and statistical research, we have determined that there is a clear correlation between wind and diameter of stems. The graphs show that as wind speed increases, the diameter also increases gradually. This suggests that different levels of wind can achieve different levels of deposition of strengthening tissues such as collenchyma and sclenchyma. Statistical analysis of the data shows that random chance can not be the cause of the varying diameters. Although groups next to each other do not exhibit a significant level of differences, the farther apart the wind levels are, the more significant their differences become. In all cases, the differences between the high group and control group are significant at the 5 % level. In the first data group, the group exposed to low wind actually had less diameter than the control group. Nevertheless, the probability that the group subjected to high wind and the group subjected to low wind represent the same population and their differences resulted from chance alone is 2.34%. In the second group, both the results from the medium and high group are significantly different when compared to the control group. The probability for medium being 1.26%; for high, the probability that it came from the same population is control being 0.03%. The extremely minute probability demonstrates that another they are not from the same population and there is another influencing factor. The only variable that was present in the experiment was wind. The same significance was shown in the third and final data collection. The probability that chance alone caused the differences between medium and control is 0.28% and for high it is 0.005%. There is virtually no possibility for the plants to be from the same population. Through performing an one-way analysis of variances, we can evaluate the group of 4 lists of data at once. The probability calculated that the difference between all the groups occurred by chance alone is significant pertaining to a significance level of 5% at 2%. Please note that outliers were not included in the tests, and all cautions for performing t tests were checked. In the statistical analysis, there also seem to be a correlation between the speed of the wind and the amount of tissues. For example, the low group was less significant than the medium group, which in turn was less significant than the high group in comparisons to the control. Likewise as the groups move farther apart in wind speed, the significance of their differences increase. Since the strengthen of herbaceous plants primarily come from collenchyma, we made cross sections to attempt to evaluate the differences between the amount of cells and / or the thickness of their cell walls. Although we were able to successfully make cross sections, the collenchyma cells were not clearly visible. In addition, no measurable differences between the cell walls of different stems could be observed under the microscope we used. Nevertheless, our data and statistical analysis corroborates our hypothesis that wind causes strengthening tissues to form and varying degrees of wind cause varying degrees of deposition.  **In regards to height of cells…**  In the vary beginning, the average height of the plants in each group had a clear correlation to the speed of wind they were exposed to. The control group was able to grow the fastest and then it decreased as the wind increased in almost a straight line as shown in the data on March 12 and March 16. The statistical analysis also shows there to be no significant difference in the height as none of the probabilities are significant. It approached the significance level of 5% on march 12, between the high and control group as it was 7.64%. Later data shows there to be no correlation between height and wind for our radishes.  **In regards to germination rate…**  At the very beginning, there was a high correlation between wind speed and % of plants that have not germinated. We were not careful to only place one seed into each cell resulting in some with 2 plants. Therefore we can not determine the exact germination rate, we can only approximate how many did not germinate because we put at least one in each cell and we can count the cells that do not have plants in them. At first, the high group had an alarmingly high number of cells without plants. We soon discovered that it was due to extra exposure to sun caused by the plants being at the end close to the side glass panels of the greenhouse. This variable was then eliminated as we rotated the plants. No further differences were seen. There is not enough information to analyze the germination rate of the radishes.  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