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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)**.** |  | A plant in the wild is subjected to many forms of environmental stress such as extreme temperatures, varying degrees of sunlight, attacks by herbivorous animals, and wind. In our preliminary research we encountered that plants are equipped with a wide arsenal of tools to protect themselves against the potential lethal effects of the environment.  Our project focuses on how plants, for our purposes radishes, react to varying degrees of wind. In response to wind, plants often exhibit the phenomena of thigmomorphogenesis, which is the strengthening and of shortening plant cells. Thigmomorphogenesis is best exemplified in how plants that are allowed to grow under optimal conditions, such as in a green house, are often are taller, thinner, and paler than plants that have been exposed to either wind or mechanical pressure such as brushing. This difference is due to the accumulation of strengthening tissues, collenchyma and sclerenchyma in the plants that have been exposed to the above listed forms of stress. Studies have shown that when a plant that has been shaken for nine hours each day is compared with a plant that has been left alone, the shaken plant can eventually have as much as nine times more strengthening tissue (specifically collenchyma) than the unshaken plant.  **Problem:**  Is the deposition of plant strengthening tissues a result of environmental conditions or inherited genetic information?  **Hypothesis:**  Environmental stress, in the form of wind pressure will induce the deposition of strengthening tissues in radish plants.  **Prediction:**  If the deposition of plant strengthening tissues is dependent of environmental stress, then radish plants, when exposed to varying degrees of wind pressure will develop varying degrees of strength.  **Variables:**  **Independent** – wind speed that the plants are exposed  **Dependent –** resulting strength of plant stems  **Control** – plants that have not been exposed to any wind. In addition, the two types of plants, each exposed to the same wind speeds will act as a control for the other one. |
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