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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)**.** |  | The environmental reaction that is most directly related to this project is thigmomorphogenesis. Thigmomorphogenesis is when a plant reacts to a mechanical environmental stimulus, such as wind or touching, by becoming shorter and stockier than a plant which has been grown under stress-free conditions. In 2001, a group of students at Hadlow college in Great Britain found that when lettus was brushed by a piece of cardboard for twenty back and forth strokes, the high of the plant could be reduced by up to 35%. When either a wind or a touch disturbance stimulates a plant, the concentration of the plant hormone ethylene increases dramatically. The ethylene then activates the touch-induced genes (THCs) in the cell’s genome. These genes code for a calcium binding protein called calmodulin. In the end, cell elongation, and thus plant growth, is reduced because in response to this chemical stimulation the cellulose microfibrils rearrange themselves into longitudinal hoops. This configuration inhibits cell elongation and causes the cells to divide rapidly, leading to a lateral growth instead of a vertical growth. The newly formed cells then differentiate into collenchyma and schlerenchyma, and thus contributing to the support system of the plant.  [previous page...](http://docs.google.com/literature_review_3.htm)  [works cited...](http://docs.google.com/works_cited.htm) |