

## UGH STINK BUGS



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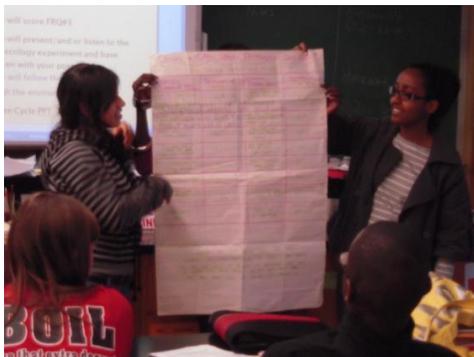
**Grades:** 9-12

### **Observations:**

More and more we live in a world that is surcomung to invasive species. In this lab students find and observe the Marmorated Stink Bug *Halyomorpha halys*. It was observed that this stink bug was uncommon in Montgomery County Maryland just three years ago. Since that time this stink bug has become more numerous. Now you can see hundreds of these bugs in attics, clinging to door screens, or on outsides of buildings.

**Question:** What Common Household Items Can Be Used To Control Marmorated Stink Bugs?

**Hints to form the hypothesis:** If you were testing common household substances what would you use that wouldn't harm your host plants?



**Hypothesis:** If I spray the marmorated stink bugs with (alcohol, habanero pepper spray, onion spray, or soapy water) I may kill stink bugs.

### **Materials:**

- Bean plants
- Soil
- Pots
- Shoe boxes fitted with screens

- Materials for making extract (habanero peppers, onions, or alcohol)
- Blender
- Spray bottles
- Stink bugs

Independent variable: sprays (habanero pepper spray, vinegar spray, onion spray or alcohol spray) and condition of plants

Dependent variable: number of dead stink bugs

Control: water spray

### **Procedure:**

Plant green bean seeds or other types of seeds for hosts of stink bugs. Leave at least two weeks for plants to be developmentally ready for introduction of stink bugs. Use plants when they have true leaves and are at least six inches in height.

Make growth chamber. Purchase plastic shoe boxes, or larger for growth chamber. Cut out top and use a hot glue gun to glue down hardware cloth. Place diluted household material in a spray bottle.

Collect stink bugs.



Put at least two plants and 10 stink bugs into each of the experimental boxes and two plants in the control boxes. Place shoe boxes in a sunny location and water plants as needed. Spray bugs on day one, on day four count dead bugs and record data. Check and record conditions of plants, and indicate their condition (good, fair, bad, or dead).



Data:

Spray Treatment ( water-control, alcohol, onion, habenero	Plant Conditions Good, fair, bad, dead.	Number Dead on Control	Number Dead on Control
Onion Spray Day			
	Plants all are in good condition		
Day 4		2/10	9/10
Alcohol Spray Day			
Day 4		1/10	8/10
	Plants are in fair condition		

## **Analysis and Conclusion:**

This is a great lesson to get young people to implement scientific method using insects. Materials are common household items and easy to obtain and inexpensive. Marmorated stink bugs are becoming extremely common in the east and spreading. Certain household materials do seem to be able to reduce Marmorated stink bug numbers in controlled conditions. Optimally all the stink bugs would be killed by the experimental spray and the stink bugs sprayed with the water controlled would be unaffected.

**Set up:** Time to get materials and make shoe boxes- 1 hour

**Cost of experiment:** \$45.00 but you could use used items for grow chambers

## **References on Marmorated Stink Bugs:**

<http://www.ars.usda.gov/is/AR/archive/jul09/bug0709.htm>

<http://ento.psu.edu/extension/factsheets/brown-marmorated-stink-bug>

<http://www.hgic.umd.edu/content/brownstinkbug.cfm>

<http://www.ipmnet.umd.edu/landscape/docs/BMSB-UMD.pdf>

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