Composting Halyomorpha halys

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Halyomorpha halys, or the Brown Marmorated Stink Bug, is an exotic pest in the United States that causes widespread damage to crops and fruits. The purpose of this experiment was to find a use for the Brown Marmorated in the agricultural field while also finding a solution for the overuse of chemical fertilizers harming the environment. The growth of a monocot crop and ornamental (corn and turf ryegrass), a dicot crop and ornamental (collards and marigolds) fertilized with dead adult Brown Marmorated Stink Bugs were compared to the plants fertilized with a conventional fertilizer. The treatment types included: one and five dead Stink Bugs placed zero or two weeks before planting (to test the benefit, if any, of allowing the bugs to decompose), Osmocote 14-14-14, or no fertilizer. There were ten replicates of each treatment, totaling sixty of each plant type and two trials of the experiment were completed. All plants were grown in Turface, a calcined clay medium with no added nutrients. At four and eight weeks, the height of each plant was recorded and two plant tissue samples of each treatment were tested for the presence of nitrogen, phosphorus and potassium. The biomass of the whole plant was also measured at eight weeks. Data was analyzed by creating a matrix of standard deviations; a deviation greater than two indicates a significant difference between treatments. Osmocote 14-14-14 produced plants with the overall best health; however, the Brown Marmorated Stink Bug proved to be an effective form of fertilizer, producing plants significantly healthier than those with no fertilizer. This was justified by the adequate to high NPK levels provided by the dead Stink Bugs.

Awards Won:
Fourth Award of $500