Pest Busters! Evaluation of the Pest Repelling Biodegradable Weed Barrier: Year 3 Study

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Over the years, around 20% to 40% of global crop production has been lost because of pests and bioactivity. Equally important, Commercial weed barriers have caused soil to be unsuitable for plant growth. To address this issue, this study investigated and analyzed the engineered weed barriers with these following properties: weed barriers overall plant soil health and its affect against different pests. This project was conducted using the following methods: To being the experiment prepare and measure the materials needed to create the weed barrier. These include Turmeric, Tannis, distilled water, vinegar, glycerin, agar-agar, sodium alginate, and rice husks. Then we gradually added the ingredients into a volumetric flask filled with distilled water atop a hot plate. When the mixture becomes viscous, we place it in a silicone mold and let it dry to form bioplastic. After the bioplastic weed barriers are formed, we then subject them to different evaluation analysis. In conclusion, the hypothesis was correct; the weed barrier had no significant effect on the plant in 4 weeks, and the experimental group showed higher chlorophyll levels than the control group indicating a positive early growth response. The weed barrier was also able to reduce the percentage of mites on food. From this project, we learned how biodegradable materials can create an effective weed barrier that promotes healthier soil and plant growth. We gained experience in dealing with harmful insects. This project highlights the importance of exploring different agricultural practices using agro-waste such as turmeric and grape skin extracts.

Awards Won: