Utilizing Crop Starches Incorporating Capsaicinoids and Glucosinolates Extracted From Locally Produced Plants To Synthesize Bio-Degradable Insect Deterring and Weed Barrier Plastics as an Alternative to Commercially Produced Agricultural Plastics

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Currently available chemical insecticides are causing soil contamination. Exploring the potential of utilizing crop starches combined with capsaicinoids and glucosinolates extracted from Capsicum annuum and Brassica oleracea to synthesize bio-degradable insect-deterring and weed barrier bioplastics yields an alternative to commercially produced analogs, which often have extended bio-degradation periods along with the lasting contamination issues. The research involves using and extracting capsaicinoids and glucosinolates, incorporating them into crop starches to synthesize biodegradable plastics. The insect deterring and weed-barrier properties were evaluated, and results were compared to commercial agricultural products. Concluding research results provided a sustainable, eco-friendly, and simple solution for agricultural plastic waste management while reducing the use of harmful pesticides and herbicides in crop production.

Awards Won:
Fourth Award of $500