Making a Bio-Polymer from Starch of a Sweet Potato (Ipomea batata) Baulegard Variety that Germinates Seeds

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This project evaluated an experimental procedure to obtain bio-plastic that would germinate seeds using sweet potatoes (Ipomea Batata) Baulegard variety. Unlike other bio-plastics made from starches from potato and cassava; the Baulegard variety of sweet potato, notably orange in color, was chosen due to its high starch index and quality with potential to be used as raw material easily extracted for preparing bio-plastics. Two tests were done to create the starch and four tests to reach the desired consistency for the bioplastic, requiring an extensive phase of trial by error experimentation. Considerable quantities of starch were obtained as well as material with the bio-polymer characteristics. In future experiments, its flexibility and laminating capacities can be evaluated. Since recycling is not enough in this age, this work also investigated the capacity of this bio-plastic if containing impregnated seeds could be a seed germinator with an ornamental potential that attracts pollinators once it is discarded. Therefore, lab testing was done with seeds of the butterfly weed plant species (Asclepias tuberosa) to evaluate germination of these seeds impregnated in this bio-plastic. The bio-plastic germinated seeds of the Asclepias tuberosa successfully. In the future testing will attempt to produce a more commercial plastic laminate sheet with the capacity to germinate impregnated ornamental seeds that attract pollinators once discarded. This project responds to the need to protect our mother earth.

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