In response to growing plastic pollution and the overall negative effects that petroleum-based plastic has on the environment, this project aims to create a sustainable alternative: biodegradable plastic made primarily from the starch derived from avocado pits and glycerol which acts as a plasticizer. By extracting the starch from avocado pits (which is often considered waste) and heating it with a mixture containing glycerol, a biodegradable and flexible plastic film was produced. An addition to this method is adding MCC powder (Microcrystalline Cellulose) to some samples, which acts as a filler to fortify and strengthen the integrity of the plastic. Different ratios of glycerol are being tested in order to determine the optimal balance between flexibility and durability. After casting the samples into molds, the most effective material properties will be evaluated through a series of tensile testing. Most importantly, the biodegradeability will be assessed by placing the samples in a certain amount of water to demonstrate it's ability to break down naturally; a key factor in reducing any long-term environmental impacts. Because of it's biodegradable nature, this plastic shows good potential for use in disposable products such as utensils and bags. Overall, this research demonstrates that plant-based waste products such as avocado pits can be transformed into eco-friendly plastics, a step forwards towards reducing pollution and creating sustainable materials that are environmental-friendly.