

The project aimed to create biodegradable plastic from banana peels, resulting in a plastic sample that, despite not meeting all typical plastic characteristics, demonstrates high biodegradability—composting in as little as six days. A second test assessed the tensile strength to show that this biodegradable plastic can be as elastic as conventional petroleum-based plastics. The process involved molding the plastic and drying it until solidified, confirming successful transformation from banana peels. Additionally, a degradation test highlighted the importance of glycerin, revealing that higher glycerin levels significantly accelerate the breakdown of the plastic while also providing flexibility. The elongation test on biodegradable plastic shows that it starts at 4.5 cm and stretches to a maximum of 6.5 cm before breaking. The strength of plastic is defined as the stress it can endure per unit cross-sectional area before failure. Increasing the thickness of the plastic enhances its strength, allowing it to bear more weight. However, this does not alter the inherent strength properties of the material, which are assessed through tensile testing based on the stress it can tolerate and its elongation at the point of failure. Execution time: 8 sec. Load average: 1.09 The soil burial test assessed the biodegradability of banana peel starch films in a natural environment, with varying conditions influenced by seasons. All films were uniform in size and shape to ensure accurate results. Samples were taken every two days to measure weight loss, revealing that the films decomposed completely in just 15 days, much sooner than the anticipated 90 days. Additionally, a mechanical characteristics test evaluated the films' flexibility and stretch through elongation at break, which increased with higher starch content due to lower crystallinity in the films. Execution time: 8 sec. Load average: 1.3