Mechanical Characteristics of Biodegradable Plastic-Based Purple Yam Starch And Chitosan As an Eco-Friendly Plastic Alternative

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ABSTRACT

Using conventional plastics has the potential for increased environmental pollution on land and in the oceans. Biodegradable plastics are rapidly decomposing and can reduce the use of fossil fuels. Vegetable waste form purple yam starch and chitosan, can be utilized and processed into biodegradable plastic as an eco-friendly plastic alternative. In this research, bioplastic was prepared by mixing purple yam starch as matrix, sorbitol as plasticizer, and chitosan as filler. Biodegradable plastic is synthesized by chitosan and sorbitol with 2% acetic acid. Further variation of chitosan ratio (3 gram, 5 gram and 7 gram) with sorbitol (0 ml, 2 ml, 4 ml, 6 ml, 8 ml and 10 ml). This research uses mechanical test in the form of tensile strength, elongation, and biodegradation test.

Keywords: Biodegradable plastic, Purple yam starch, Chitosan