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Production and Characterization of Biodegradable Polymer From Jicama Starch (*Pachyrizus Erosus*) And It's Biodegration In Soil

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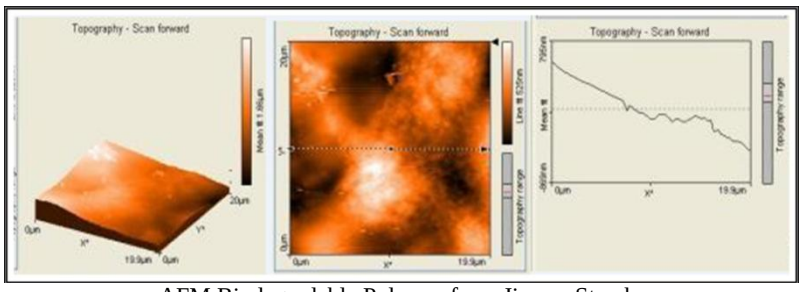
ABSTRACT

Jicama starch is a polymerized carbohydrate that forms biodegradable polymer with the addition of glycerol at temperature of 80°C. Biodegradable polymers formed were dried and tested with Tensile Strength test, thermal properties test, Fourier Transform Infra Red (FTIR), soil biodegradability test, Scanning Electron Microscopy (SEM) and Atomic Force Microscopy (AFM). The results obtained showed a flexible and elastic tensile strength properties and thermal properties of melting point at 105°C temperature. FTIR showed a specific peak at 3300 cm^{-1}wave and the O-H peak of hydroxyl reinforced by a range of C-O at wave number 1300 to 1000 cm^{-1}. SEM showed degradation towards biodegradable polymer.

Graphical Abstract:



AFM Biodegradable Polymer from Jicama Starch

Keywords: Biodegradable, Polymer, Carbohydrate.