

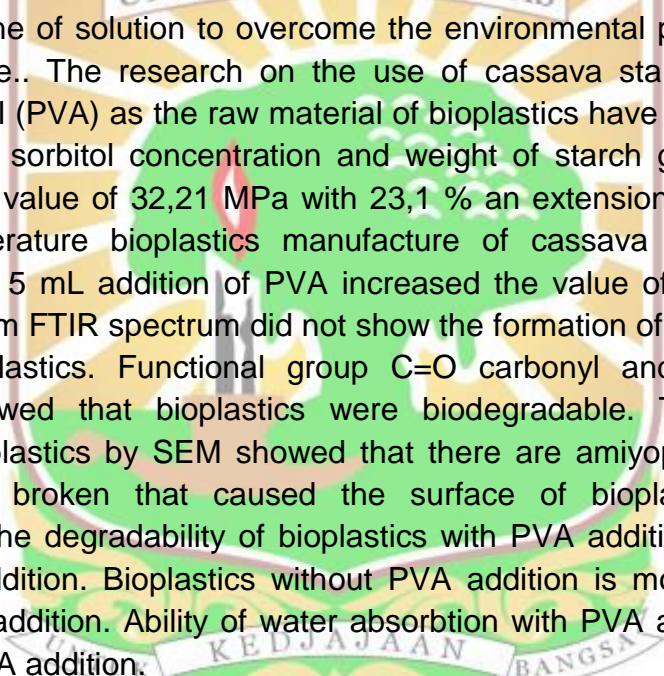
ABSTRACT

THE FORMATION OF BIOPLASTIC FROM CASSAVA (*Manihot Esculenta Crantz*) STARCH WITH SORBITOL AND POLYVINYL ALCOHOL (PVA) ADDITION

by:

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Bioplastics is one of solution to overcome the environmental problems caused by plastic waste.. The research on the use of cassava starch, sorbitol and polyvinyl alcohol (PVA) as the raw material of bioplastics have been conducted. Bioplastics with sorbitol concentration and weight of starch gave the highest tensile strength value of 32,21 MPa with 23,1 % an extension elongation. The optimum temperature bioplastics manufacture of cassava starch is 60⁰C. Bioplastics with 5 mL addition of PVA increased the value of tensile strength 36,64 MPa. From FTIR spectrum did not show the formation of a new functional groups in bioplastics. Functional group C=O carbonyl and C-O ester on bioplastics showed that bioplastics were biodegradable. The morphology analysis of bioplastics by SEM showed that there are amylopectin molecules that have not broken that caused the surface of bioplastics was less homogeneity. The degradability of bioplastics with PVA addition is faster than without PVA addition. Bioplastics without PVA addition is more transparency than with PVA addition. Ability of water absorbtion with PVA addition is higher than without PVA addition.

Keywords: Bioplastics, starch, Cassava, Sorbitol, Polyvinyl Alcohol (PVA)