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Microwave Assisted Synthesis and Characterization of Acetate Derivative Cassava

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Abstract: The aim of this study were to observe the possibility of application of heating in the acetylation of cassava starch and to study the physicochemical p the starch acetate obtained. The acetylation was carried out by mixing native c starch with chloroacetic acid and sodium hydroxide of a certain weight ratio in a container. The mixture was then sprayed with ethanol and heated using microwa The Degree of Substitution (DS), Reaction Efficiency (RE) and some physical pro acetylated starches were then analyzed. It was found that microwave assisted of cassava starch using chloroacetic acid can be done in a very short reaction ti highest DS and RE obtained were 0.045 and 0.051%, respectively. Acetylation o starch reduced gel hardness during storage. Acetylation also inhibits the retrogra starch gel. Cassava starch acetylation changed starch molecular motion, resultin decrease in the glass transition temperature. Amylopectin retrogradation was no reduced, indicating that the degrees of modification of the starches in this study low to cause enough steric hindrance to prevent retrogradation. The modificati on native starch granules; they took place preferentially on the amylose fractio amylopectin fraction, thus leaving amylopectin retrogradation was mostly unaffe be concluded that microwave heating can be applied in the acetylation of cassa obtain significant changes of the properties of starch.

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