



ABSTRACT

Composites of polyvinyl alcohol, native banana starch, oxidized banana starch using glycerol like plasticizer, were studied by mechanical tests (MT), scanning electronic microscopy (SEM), differential scanning calorimetry (DSC) and solubility in water. The oxidized banana starch showed higher level of carboxyl groups than of carbonyl groups. Composites of native banana starch/polyvinyl alcohol and oxidized banana starch/polyvinyl alcohol showed irregularities, indicating incomplete dispersion of the polymers. However, the film elaborated with the blend oxidized banana starch/polyvinyl alcohol showed the highest mechanical properties and the melting temperature of the first transition, as well as the lowest water vapor permeability, indicating higher interaction between both polymers. The composite oxidized banana starch/polyvinyl alcohol showed higher water solubility than the one of its counterpart with native banana starch at 25°C, and similar values were obtained for both films at 60°C. The oxidation of banana starch in order to elaborate a film blended with polyvinyl alcohol improved some mechanical and barrier properties, and this composite could be used for specific applications in the packing of food.

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