

Abstract

This research work was aimed about the extraction of cellulose and hemicellulose from sawdust of different sources. Evaluated characters of cellulose and synthesized microcrystalline cellulose (MCC) and carboxymethyl cellulose(CMC) from it. Cellulose was extracted by applying various technique on sawdust such as dewaxing with alkaline treatment and double bleaching one with sodium hypochlorite other with hydrogen peroxide (H_2O_2). Isolated cellulose was converted into MCC by acid hydrolysis which characterized and analyzed with commercial MCC. The main perspective of synthesis of MCC was find out its adequate use in pharmaceutical industry as a excipient. For this purpose it was compulsory to determine specification which made it complies for tableting. Solubility, pH, Conductivity, moisture content ,sulphated ash, bulk density and Fourier transform infrared spectroscopy analysis were performed for ensure its compatibility as a binder. Second aimed of this study was to developed high viscous Carboxymethyl cellulose from cellulose with optimum condition of esterification by using monochloroacetic acid(MCA) and variable concentration of NaOH(10%,20%,30%,40%,50%). The effect of concentration of NaOH was studied by measuring viscosity value of CMC at ambient temperature. For exquisite results cellulose can be used from different sources including cotton, pulp and MCC. The effect of fluctuated condition was determined by encounter its viscosity and degree of polymerization. CMC was characterized Fourier Transform Infrared Spectroscopy (FTIR).