ABSTRACT

Sugarcane bagasse, an abundantly available agricultural waste, is an important cellulosic substrate for exploitation. The cultures of *Bacillus subtilis* and *Trichoderma viride* were isolated from the soil and applied on substrate to analyze their degradation capability. The bagasse, after pretreatment and untreated, were used for degradation studies, which included the grinding to decrease the particle size, steaming (5 min, 10 min and 15 min) and alkaline (5% NaOH, 5% NH_4OH) pretreatments. The effects of these treatments were observed on biodegrading activity by using isolated cultures. It was found that degradation of substrate depends on the type of pretreatment and the organisms used. *Trichoderma viride* gave the highest degradation of cellulose (80%) and fiber (upto 60%) with 5% NaOH pretreatment in grinded bagasse while *bacillus subtilis* exhibited the maximum percentage degradation of cellulose in grinded bagasse after 15 minutes of steaming pretreatment (upto 65%) and fiber degradation (more than 50%) in 5% NaOH pretreated grinded bagasse.