

## Abstract

In the present research, corn husk fibers were extracted by chemical method using sodium hydroxide followed by acid treatment. The objective was to obtain easily twistable, soft and fine fibers. The extracted fibers were characterized in terms of their physical properties. Thermogravimetric analysis was also performed to assess the effect of acid treatment on the fiber thermal properties. It was found that, alkali treatment yields 26–28% fibers on the weight of husk treated. Acid treatment with sulfuric acid removes impurities such as hemi-cellulose and lignin and is directly related to acid concentration. Acid treatment reduces fiber length, but however, a milder treatment results in a longer fiber length distribution. The linear density of alkali treated fibers reduces from 61 dtex to 30 dtex after the acid treatment. In addition, acid treatment also results in reduction of moisture regain from 13.5% to 11.75%. The alkali treated fibers show a tenacity value of 16.2 cn/tex and this value reduces after the acid treatment. Interestingly, the fibers treated with acid at 7.5gpl concentration exhibit a highest value of 18.1 cn/tex and this value reduces further to 12.5cn/tex as the acid concentration increases. Acid treatment results in more thermally stable fibers.