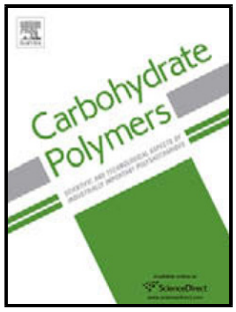

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PII: S0144-8617(13)00759-5
DOI: http://dx.doi.org/doi:10.1016/j.carbpol.2013.07.073
Reference: CARP 7972

To appear in:

Received date: 8-10-2012
Revised date: 27-5-2013
Accepted date: 24-7-2013

Please cite this article as: Petroudy, S. R. D., Syverud, K., Chinga-Carrasco, G., Ghasemain, A., & Resalati, H., Effects of bagasse microfibrillated cellulose and cationic polyacrylamide on key properties of bagasse paper, *Carbohydrate Polymers* (2013), http://dx.doi.org/10.1016/j.carbpol.2013.07.073

Effects of bagasse microfibrillated cellulose and cationic polyacrylamide on key properties of bagasse paper

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Abstract

This study explores the benefits of using bagasse microfibrillated cellulose (MFC) in bagasse paper. Two different types of MFC were produced from DED bleached soda bagasse pulp. The MFC was added to soda bagasse pulp furnishes in different amounts. Cationic Polyacrylamide (C-PAM) was selected as retention aid. The results show that addition of MFC increased the strength of paper as expected. Interestingly, 1% MFC in combination with 0.1% C-PAM yielded similar drainage time as the reference pulp, which did not contain MFC. In addition, the samples containing 1% MFC and 0.1% C-PAM yielded i) a significant increment of the tensile index, ii) a minor decrease of opacity and iii) preserved Gurley porosity. Hence, this study proves that small fractions of MFC in combination with adequate retention aids can have positive effects with respect to paper properties, which is most interesting from an industrial point of view.

Keywords

Bagasse, microfibrillated cellulose (MFC), endoglucanase, homogenization, cationic polyacryamide (C-PAM).