

POSTER SUMMARY

**ANALYSIS OF SUGARCANE BAGASSE PRODUCTS FROM
HOT COMPRESSED WATER FRACTIONATION**

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Abstract

From a global perspective, lignocellulosic biomass is an abundant raw material that has the potential to provide intermediates for biofuels or valuable chemicals without competing with food crops. In South Africa, sugarcane bagasse cannot be considered as a freely abundant resource for possible biofuel production since it is used as a source of energy for the mill, other specialised products (animal feed, paper and chemicals) and for potential co-generation. Current and future uses will therefore limit the quantity of bagasse available for possible value added products. Value added products from bagasse would therefore need to be those which are low volume, specialised and have a higher monetary value than the current energy value.

Lignocellulosic biomass is composed of cellulose, hemicelluloses, and lignin that require fractionation for use as a raw material. Fractionation methods include physical methods (e.g. milling, ultrasonic, steam explosion) and chemical methods (e.g. acids, ionic liquids, hot compressed water). The method of fractionation used affects the type and quantity of the products and the potential to provide intermediate building block chemicals for value added products.

An investigation of the fractionation of bagasse using hot compressed water was carried out at the Sugar Milling Research Institute NPC. This poster details the design of the reactors and the development of various analytical techniques to determine the compounds arising from the fractionation of sugarcane bagasse with hot compressed water.

Keywords: bagasse, fractionation, hot compressed water, hemicellulose, cellulose, lignin