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Acetyl-assisted autohydrolysis of sugarcane bagasse for the production of xylo-oligosaccharides without additional chemicals

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Abstract

The aim of this work was to study acetyl-assisted autohydrolysis of sugarcane bagasse for the production of xylo-oligosaccharides without additional chemicals. A xylo-oligosaccharide yield of 50.35% was obtained in 10 min through sugarcane bagasse autohydrolysis at 200 °C; this yield was 49.64% after acetyl-assisted autohydrolysis of a 65:35 mixture of sugarcane bagasse/white birch at 160 °C for 100 min. The yield of xylo-oligosaccharides was close to that obtained at 180 °C/40 min and 200 °C/10 min through the autohydrolysis of sugarcane bagasse. Compared to sugarcane bagasse alone, the xylo-oligosaccharide (degree of polymerization 2–5) yield from the acetyl-assisted autohydrolysis at 200 °C for 10 min was 52.99%. In addition, the yield of glucose from the solid residue following autohydrolysis pretreatment was