An Arabinoxylan from Sugar Cane Bagasse: Aims for Co-Product Recovery

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Brazil is the world´s biggest producer of sugarcane and over 70 million of tons of cane bagasse are generated every year. Recent studies pointed out that the fractionation of agricultural co-products in their constituents, may offer a best destination for them, generating higher aggregated value products. The aim of this study was to investigate the hemicellulose fraction of the sugarcane bagasse, concerning on its yield, chemical structure, and fractionation steps. The bagasse was submitted to 40% aq. KOH extraction. The crude extract (CE) was neutralized and dialyzed, followed by the addition of EtOH, resulting in precipitate (PE) and supernatant fractions. These were centrifuged, evaporated, and freeze-dried. The yield of CE was 20%, and from this 60% was from PE. CE and PE were composed of Ara, Xyl and Glc in molar ratios of 9:85:6, and 8:88:4, respectively. ^{13}C NMR and methylation data were very similar. PE showed the presence of a pure (1→4)-linked β-Xyl*p* main-chain, substituted mainly at O-2 by nonreducing end-units of Ara*f*. Arabinoxylans are well known for their chemical and biological properties and in this study we presented a way of recovering a pure biopolymer, with a high yield and few steps of fractionation.

Word Keys: Sugarcane bagasse, Arabinoxylan, Agroindustrial residue.
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