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Obtention of carbohydrates from process wastes of the pulp and paper industry to be used as additive in livestock feed

Antonio Tijero Cruz
Complutense University of Madrid, Spain

Carbohydrates supply most of the energy needed by cattle. Carbohydrates make up 65 to 75 percent of the dry weight of most grains, forages, and roughages. Also, increasingly stringent environmental standards and the need for sustainable development are forc¬ing pulp and paper mills to study methods to maximize the use of process wastes. Several studies have shown that "hydrothermal process" wastes might serve as raw material to obtain monosaccharides and oligosaccharides. These carbohydrates obtained from wastes of the pulp and paper industry can be used as additive into feed livestock. The use of these monosaccharide and oligosaccharides supposed a decrease of the environmental impact produced by the pulp and paper industry in addition to obtain additional revenue with the valorization of the cited wastes. The raw material used in this study was rice straw, *Oryza sativa*, Senia from the "Arroz de Valencia" designation of origin. The straw was dried and grounded in a hammer mill and characterized chemically in accordance with the applicable TAPPI Standard Methods. Next, the raw material was depolymerization of hemicelluloses by auto hydrolysis, also known as the "hydrothermal process," which requires no acids; instead, the hydrolytic agent is pro¬duced by the reaction medium itself. The amount of carbohydrates, Oligomers, glucose, xylose and arabinose, were obtained by HPLC chromatography. The aim of this study is to evaluate the use of hydrothermal process to be used in the obtention of carbohydrates from process wastes of the pulp and paper industry as additive to feed cattle.

Biography

Antonio Tijero Cruz is PhD of Chemist from Complutense University of Madrid. He is Professor in Complutense University of Madrid and researcher of ECOWAL. He has published more than 15 papers in different journals and has a patent. He is working in environmental issues related to several power companies.

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