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## STUDY REGARDING THE OPTIMAL CONDITIONS FOR REDUCING SUGARS PRODUCTION FROM WHEAT STRAWS BY ENZYMATIC HYDROLYSIS

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### Abstract

The purpose of this paper is to present the results regarding the obtaining of reducing sugars at the enzymatic hydrolysis of the lignocellulosic material, wheat straws. For these, the lignocellulosic material was submitted to a preliminary pretreatment for destruction of the cellulose crystalline structure and to increase the material's susceptibility to the enzymatic attack. The preliminary pretreated material with diluted acid (0.5%-4%) or with water at different temperatures (120-170°C) was submitted to the enzymatic hydrolysis with the enzymatic complex *Accellerase 1500* at temperatures between 55-65°C, for 72 hours. The reducing sugars content resulting from the enzymatic hydrolysis was evaluated at periods of 12 hours. The obtained data show that the highest reducing sugars content (7.17 g/L) was obtained in the case of the samples pretreated with 1% H<sub>2</sub>SO<sub>4</sub> at 130°C and enzymatically hydrolyzed at 61°C for 72 hours. From the obtained data it can be concluded that the pretreatment of the lignocellulosic materials represent an important step for the obtaining of reducing sugars. Also, the temperature of the enzymatic hydrolysis influences the reducing sugars quantity released in this phase.

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