

## Production of Bioethanol through Hydrolysis of Agro-Industrial Banana Crop Residues

**Authors :** Sánchez Acuña, Juan Camilo, Granados Gómez, Mildred Magaly, Navarrete Rodríguez, Luisa Fernanda

**Abstract :** Nowadays, the main biofuels source production as bioethanol is food crops. This means a high competition between foods and energy production. For this reason, it is necessary to take into account the use of new raw materials friendly to the environment. The main objective of this paper is to evaluate the potential of the agro-industrial banana crop residues in the production of bioethanol. A factorial design of  $2^4$  was used, the design has variables such as pH, time and concentration of hydrolysis, another variable is the time of fermentation that is of 7 or 15 days. In the hydrolysis phase, the pH is acidic ( $H_2SO_4$ ) or basic (NaOH), the time is 30 or 15 minutes and the concentration is 0.1 or 0.5 M. It was observed that basic media, low concentrations, fermentation, and higher pretreatment times produced better performance in terms of biofuel obtained.

**Keywords :** bioethanol, biofuels, banana waste, hydrolysis

**Conference Title :** ICEBESE 2016 : International Conference on Environmental, Biological, Ecological Sciences and Engineering

**Conference Location :** New York, United States

**Conference Dates :** October 10-11, 2016