Poster M148

Spent coffee grounds: a potential feedstock for ethanol production

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Spent coffee ground (SCG) is the residual material obtained during the treatment of coffee powder with hot water or steam for the instant coffee preparation. About 6 million tons of SCG are produced per year around the world, but this material has been few explored for valuable purposes. Nowadays, great efforts have been directed to add value to the unused material wastes derived from the industrial activities in order to reduce their impact to the environment. For this reason, studies aiming to find strategies for SCG valorization have been strongly encouraged. Some studies in our laboratory demonstrated that SCG is a sugar-rich raw material, and *Saccharomyces cerevisiae* was found to be a yeast strain with great ability to convert these sugars to ethanol. Then, different fermentation strategies based on concentration, detoxification and/or supplementation of the SCG hydrolysate with nutrients were evaluated with the objective of maximizing the ethanol production. According to the results, SCG can be considered a suitable feedstock for use on ethanol production since the sugars present in its hemicellulosic hydrolysate can be efficiently converted to ethanol by fermentation. Concentrating the hydrolysate previous its use as fermentation medium made possible obtaining higher ethanol concentration at the end of the process, which is advantageous for the subsequent distillation step; but the ethanol yield was lower when compared with the yield obtained from non-concentrated hydrolysate. Further studies to improve the ethanol yield from concentrated SCG hydrolysate are needed to obtain a feasible industrial production of ethanol from SCG.