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PII: S1871-6784(16)32517-1
DOI: http://dx.doi.org/doi:10.1016/j.nbt.2016.10.010
Reference: NBT 931

To appear in:

Received date: 13-4-2016
Revised date: 18-10-2016
Accepted date: 28-10-2016

Please cite this article as: Procentese, Alessandra, Raganati, Francesca, Olivieri, Giuseppe, Russo, Maria Elena, De La Feld, Marco, Marzocchella, Antonio, Renewable feedstocks for biobutanol production by fermentation.New Biotechnology http://dx.doi.org/10.1016/j.nbt.2016.10.010

Renewable Feedstocks for Biobutanol Production by Fermentation

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Highlights

- A survey of available European feedstock for bio-butanol production was reported
- 43% of the European demand for biofuel may be replaced by agriculture residues
- Encouraging results rise from analysis of use of *Mischantus* crops in Campania
- 50% of the Campania demand for biofuel may be replaced by dedicated *Mischantus* crop

Abstract

This paper reports a study of potential feedstock for butanol production via the biotechnological route. Several waste(water) streams rich in sugars and lignocellulosic biomass were studied: cheese-whey, leftovers of high sugar-content beverages, food lost or wasted, agriculture residues. The maximum butanol production rate from each type of feedstock was assessed according to the parameters indicated in the literature: feedstock availability rate, feedstock average composition and butanol yield. In Europe the potential biotechnological production of butanol from the feedstock studied was assessed to be about 39 Mt yr-1, which would be enough to meet the current European demand of biofuels. The potential butanol production at local level was also assessed taking into account the concentration of feedstock suppliers in the Campania region.

Keywords Feedstock, butanol, lignocellulosic biomass, waste, survey, fermentation