



9. Área Especial 2: Economia Agraria e Meio Ambiente

9.1 Desenvolvimento de organizações comunitárias e Meio Ambiente

9.2 Agroindústria e inovação

BIOGAS FROM SUGARCANE VINASSE: ENVIRONMENTAL, ENERGY AND REGULATORY ISSUES FOR A POLITICAL AGENDA IN BRAZIL

Melissa Cristina Pinto Pires Mathias (PUC – RJ), João Felipe Cury Marinho Mathias (IE/UFRJ) e Daniel Vasconcellos Archer Duque (Bolsista PIBIC IE/UFRJ)

Brazil is the largest sugarcane producer in the world, an important input to ethanol production, which puts the country in a privileged position in biofuel world market. Besides the importance of sugar production in the sugarcane chain, this work focuses on ethanol production (ethanol industry), particularly its main waste, vinasse. Vinasse presents several environmental risks due to its bio composition and, if dumped in rivers or lakes, causes the phenomenon of eutrophication, which promotes a high growth of aquatic plant species and spread environmental problems. In this scenario, the anaerobic digestion of vinasse (the most abundant effluent from a sugarcane biorefinery) arises as an interesting alternative because, in addition to promoting the stabilization of organic matter, it also enables energy generation from biogas (biomethane). Anaerobic digestion generates biomethane and biofertilizer from vinasse. The objective of this article is to study the biogas potential generation from sugarcane vinasse in Brazil using anaerobic digestion technology also presenting the challenges and the governmental agenda required to develop biogas systems to sugarcane sector in Brazil. This work presented a huge biogas production potential from sugarcane vinasse. It can be used in multiple ways, and this work emphasized two important energy uses: to substitute natural gas and to generate electricity in a distributed generation concept. Besides the huge potential, there is an extensive agenda to solve and overcome the multiple barriers for biogas systems implementation in Brazil. According to international experience the strong governmental involvement is necessary and sufficient condition to develop renewable energy sources. In that sense, biogas systems need to be inserted in Brazil's policy agenda.