BIOPROSPECTING DECOMPOSING FUNGI CELLULOSE AND LIGNIN OF SUGARCANE BAGASSE FOR PRODUCTION OF BIOFUEL

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INTRODUCTION

Brazil is the largest producer of sugarcane in the world, the estimate of the 2013/14 harvest was 652.02 million tons of sugar cane to be ground, mainly for the production of sugar and ethanol. However, a ton generates on average 250 kg of bagasse, so every year the production of bagasse in Brazil is on average 174 million tons./year (SILVA,2010). Currently, the major source of fuel in the world is the source of oil, but this energy is not renewable, so research is needed in order to be obtain alternative fuels for motor vehicles, because every day increases the concern environmental impact and health (BALAT, 2011).

The chemical composition of lignocellulosic materials is very complex and influences the efficiency of biofuel production. The structural and chemical composition is highly variable due to characteristics of the plant and environmental factors (DEMIRBAS e DEMIRBAS, 2007). There is an ongoing search for a faster and more selectively way to degrade lignin, highlights the use of fungi that have only ligninolytic systems (SÁNCHEZ, 2009).

Despite the gradual depletion of global energy resources, an alternative and sustainable energy sources have been an urgent demand (CHEN et al., 2012). Thus when lignocellulosic are degraded materials become simpler carbohydrate source (RAGANATI et al., 2013), some microorganisms are able to yeast a wide variety of carbon sources in biofuels such as ethanol , butanol (EZEJI et al., 2007) and hydrogen (SREETHAWONG et al., 2010).

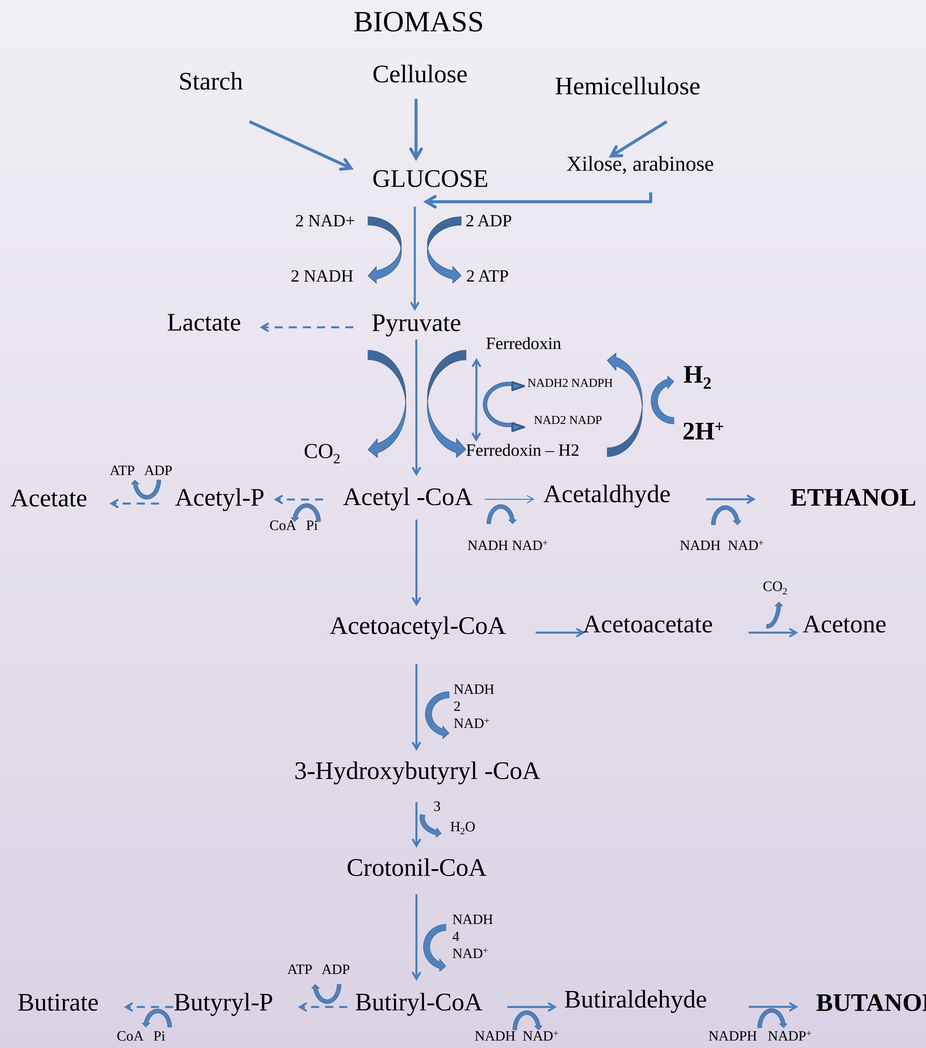


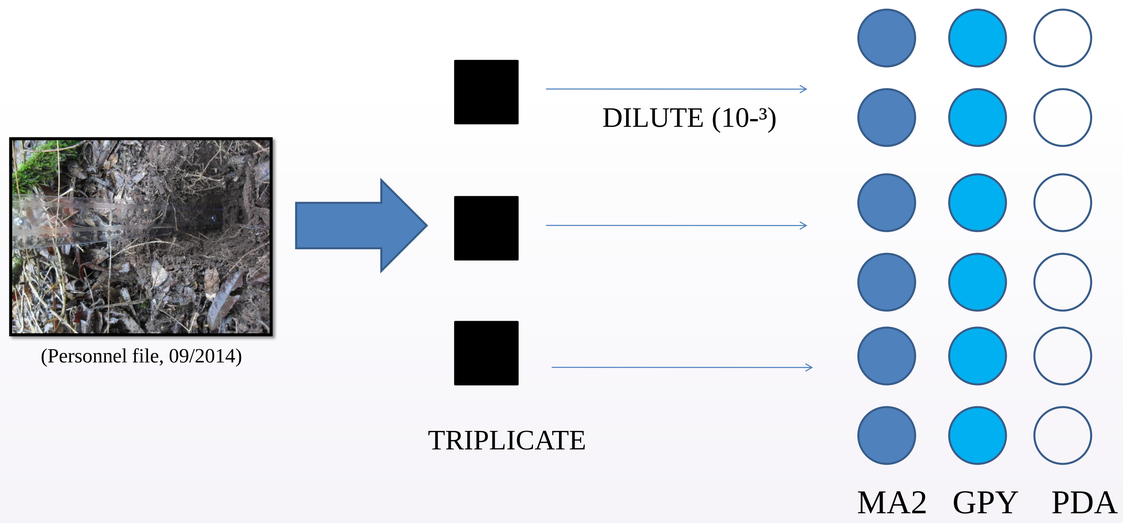
Figure 1. Biofuel biosynthesis pathway (HAUNG et al., 2010 adaptaed).

OBJECTIVES

The aim of this study is to isolate and identify fungi producers of enzymes such as celulase, xylanase, peroxidase and lipase. Check if they are capable of degrade ligninna and cellulose from sugarcane bagasse.

METHODS

- The soil was collected in State Park of Cerrado, Jaguariaíva. It was made five samples. In laboratory the fungi was isolated in three types of culture medium: MA2 [Malte 2%]; GPY [Glucose, Peptone and Yeast extract]; PDA [Potato Dextrose Agar];



- **Enzimatic activity** of soil and the fungi isolated;

PERSPECTIVES

Once it is possible to find this fungus or learn more about the degradation of compounds derived from plants, it will be an important step in production of green energy in Brazil.

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