

# Fermentation in media containing different ratios of glucose and xylose

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In recent years, growing attention has been devoted to the conversion of biomass into fuel ethanol, recognized as an alternative to fossil fuels. Significant advances have been made towards the technology of ethanol fermentation. Hydrolysates from lignocellulosic biomasses contain different varieties of sugars, among them glucose and xylose. The aim of this work is to develop fermentation technology necessary to convert xylose to ethanol. *Saccharomyces cerevisiae* ferments glucose and other hexoses with great efficiency, but is unable to ferment xylose. Since glucose is the preferred substrate for this organism, it is necessary to evaluate what is the best ratio between glucose and xylose that does not inhibit cell growth and ethanol production. With this aim, a wild type strain was grown in synthetic media containing different proportions of glucose and xylose, whose consumption was determined by glucose oxidase-peroxidase and phloroglucinol methods, respectively. We observed that at least 20% of total sugar must be glucose to an efficiently cell growth and xylose consumption. We also detected an increase in G6PDH activity proportional to xylose concentration in media. Having in mind that the conversion of xylose to ethanol requires NADPH, whose main source is G6PDH, this result can guide possible approaches to make xylose fermentable by *S. cerevisiae*.