

ETHANOL PRODUCTION FROM SOY MOLASSES HYDROLYZED WITH ALPHA GALACTOSIDASE

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In recent years, research and development efforts directed toward commercial production of ethanol, the most promising biofuel from renewable resources. In this work, we analyzed the soy molasses fermentation, a reject of soy protein extraction. The soy molasses contain galactose oligosaccharides, which are non-fermentable sugar; however, this sugar can be hydrolyzed by enzyme alpha-galactosidase. We treated the soy molasses with an enzymatic extract rich in alpha-galactosidases produced by the fungus *Aspergillus terreus*. Soy molasses treated and not treated was fermented by *Saccharomyces cerevisiae* and *Saccharomyces carlsbergensis*, and then the ethanol production was evaluated. We also quantified the reduction sugar formed during the fermentation. To *S. cerevisiae* fermentation we noted an increase of 30% in the reduced sugar in the soy molasses not treated. The highest ethanol production (7.5%) was detected after 45 hours of fermentation. When we analyzed the fermentation of the soy molasses not treated by *S. carlsbergensis*, we detected the highest ethanol production (7.5%) after 45 hours and an increase of 32% in reduced sugar. When the soy molasses treated with alpha-galactosidase was fermented by *S. cerevisiae* we can observe a decrease of 75% in reduced sugar and the highest ethanol production (7.5%) was detected after 45 hour of fermentation.

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