Sargassum fluitans as an Energy Source for Bioethanol Production

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Due to the global environmental, economic, and energy crisis, an attempt was made to find an eco-friendly and sustainable energy source based on the lignocellulosic biomass of Sargassum fluitans. The use of lignocellulosic biomass as an energy source has been tested in past occasions with different natural sources such as sugarcane and corn; however, this wasn't ethical as they are products used in human consumption. It was planned to achieve this objective by evaluating the production of bioethanol obtained from the fermentation of Sargassum fluitans, using Saccharomyces cerevisiae. Sargassum fluitans were collected and subjected to a pretreatment process through particle reduction. Then, the fermentation process began using Saccharomyces cerevisiae as yeast, which lasted 7 days and was subsequently subjected to a double distillation process, which would be compared later on. After having carried out the experimental stage, the alcohol meter and the temperature conversion table were used to determine the percentage of alcohol obtained. 3.2% of alcohol was obtained from a 2.5Kg sample of Sargassum fluitans after the first distillation and a 12.6% was obtained after the second distillation. This result may have been affected by time and the laboratory equipment used. At the end of the experimental stage and the data analysis, it was observed that Sargassum fluitans is capable of producing bioethanol and if it is collected and processed to a greater quantity, it has the capacity to become a sustainable and eco-friendly energy source.

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