Enzymatically Treated Cellulosic Packaging Waste Utilized to Release Fermentable Sugars for the Production of Bioethanol: A Third Year Study

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Biofuels are currently being made with food crops. However, due to the growing issue of world hunger an alternative biomass was research. With reference to previous studies, cardboard proved viable in the production of ethanol. This study was to prove that ethanol was produced. Initially, the cardboard solutions were divided up into two samples, with three trial flasks; three control flasks were used as well. Each solution underwent a titration process to quantitatively measure for ethanol production. The amount of ethanol produced was measured using the difference in sodium thiosulfate levels. The average of the sodium thiosulfate concentration for the three trials of sample one was 17.22. The average of the sodium thiosulfate concentration for the three trials of sample two was 17.30. Resulting in only a difference of 3.08 for sample one and 3.00 for sample two, from the control. The results proved that ethanol can be produced using cardboard as an alternative biomass to food crops. Also, the longer the solution incubated, the more ethanol was produced. The alteration from the use of food crops as a fermentable material to cardboard, allows for a higher availability of food crops.