Comparing Ethanol Yield from Saccharomyces cerevisiae in Healthy and Decaying Starch and Sugar Solutions

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Ethanol is an alcohol that can be derived from fermentation of yeast. When given sugar to eat, yeast produces carbon dioxide and ethanol. Any organic material that contains starch or sugar has the ability to produce ethanol. The purpose of this experiment is to compare the ethanol yields of apple, rotten apple peel and core, potato, rotten potato peel, corn and zucchini squash. All of the starches used need the enzyme alpha amylase to convert the starch to sugar, so that the yeast has sugar to eat. It is hypothesized that the two apple samples would produce the highest ethanol yield after 60 minutes. An ethanol sensor which detects ethanol vapors measured the amount of ethanol produced over the 60 minute period. At the end of the experiment, the two apple samples did produce the highest yield. All of the other solutions still produced a substantial amount of ethanol, supporting the idea that food waste and uncommon starches are an option for the future of ethanol production.

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