

There of ethanol like
corn into small



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There is different classification of Biofuels which are the first-generation biofuels, second generation biofuels, third generation biofuels and fourth generation biofuels. In this research this study will focus on first generation which are usually produce by a plants or organic matter.

First generation biofuels use a simple process, the common first-generation biofuel is ethanol by the process of fermentation. Process Improvement (as cited in United Nation, 2008) Ethanol is being fermented from various source of starch this includes corn, wheat, grain and etc. It is produce by smashing the certain source of ethanol like corn into small particles and then water is added with the enzyme to convert it for the fermentation. Yeast was added to the mashed so that the fermentation creates ethanol.

After the completion of the fermentation during the process of heating the ethanol will evaporates while the remaining corn and yeast remains. The ethanol vapors are condensed into a liquid by the distillation the ethanol is being separate from the raw materials that was being fermented (University of Illinois, 2009) The properties of ethanol is the appearance of odor taste, solubility ethanol is much soluble in the water and organic solvents, density pure ethanol is neutral, boiling point, melting point, freezing point, flash point.. (“ Alcohol (Ethanol) Chemical and Physical Properties”, 2016) The researcher will use the waste of Gourd, Mango and Citrus Aurantium Linn, because these are the common waste that people can find in everywhere such as market and outside of the malls who sell different fruits aside from that it is also affordable. Those waste in market can be useful if the people are aware that it can be useful in a way of producing ethanol fuel.