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PRODUCTION OF BIO-ETHANOL FROM AQUATIC WEEDS

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ABSTRACT

The world may not support society's current habits forever. We need new sources of energy, less co_2 emissions and more sustainable lifestyles. To put it on other way the world needs double the present supply of energy while cutting co_2 emissions to larger extent. To achieve more energy requirement with less co2 we need to conserve and diversify our energy sources sustainably. Bio fuels will and should become a vital part of the future energy mix. Sustainability should be the central idea to everything we do. Though in most parts of the world bio fuels is produced from corn and sugarcane, they compete with food sources. In a developing country like India food crisis is equal to energy crisis. Though corn and sugar cane yields high ethanol we cannot compromise on food security. Thus we need to look for other alternative raw-materials for producing bio fuels other than corn and sugarcanes. So I chose "weeds" a raw material which abundantly grown on waste waters and has some starch content in it. Weeds such as Duckweed can be the most promising plant for the twenty-first century because they are easier to harvest than algae or other aquatic plants. They provide food for wildlife, especially waterfowl due to high protein content in fact produces more protein per square meter than soybeans. Also there are 3% to 72% of starch content is present in the weeds which will used to convert into sugars and then to alcohol through fermentation. In this paper on type of weed which is called duckweed is selected and collected from local waste water bodies and used as raw material. This selection has a cutting edge upon food vs. fuel debate as weeds are abundantly available for free of cost. This weedy raw material is undergone various unit operations and process and then finally fermented to give out ethanol. This ethanol can be distilled and used as blend in petrol and a relatively clean burning biofuel can be obtained.

KEYWORDS: Aquaponics, Greenest Feedstock, Duckweed