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Bio-fuels versus food production: Does current bio-fuels effects food security and price

Continue increasing demand of fossil fuels is causing the concern of global warming due to increasing greenhouse gas remission and increasing energy supply insecurity due to politically unstable countries producing fossil fuels. These concerns are helping the production of bio-fuels as one of alternative approaches to decrease these concerns. Bio-fuels are produced from feed stocks or utilizing lands that could be used to produce foods. United States, Brazil, and Europe are the leading nations for the production of bio-fuels. Carbohydrate crops such as corn, wheat, rice, potato, sugar cane and sugar beets are the major feed stocks for the production of bio ethanol. Oil seed crops such as canola, sunflower, and soy beans are the major feed stocks for the production of bio diesel. As bio-fuels productions continue to compete with food productions, the assumption that this competition will drive up food price volatility and increase hunger in poor countries. The only way to reduce the impact of bio-fuels on food production is to de-link food and bio-fuels production. This can be accomplished through development of new bio-fuels technologies from second generation feed stocks that are not part of food supply. Such approach can be accomplished by utilizing agriculture residues, by-products from bio-process manufacturing, and capturing biomasses that are currently treated as waste, or utilizing non agriculture land that are not suitable to cultivate food crops but only suitable to grow plants or microbes that are dedicated to bio-fuels as feed stocks and not to produce foods. The major problem that did not allow these two approaches as second generation feed stocks technologies to develop on large commercial scale are due to several factors mainly, storage and transportation cost of these feed stocks, low bio-fuels production yield, long manufacturing process and high production costs. More R&D studies and experiments are necessary for the commercialization of bio-fuels from these second generation feed stocks in the near future.

Biography

Osama O Ibrahim is a highly-experienced Principal Research Scientist with particular expertise in the field of Microbiology, Molecular Biology, Food Safety, and Bio-processing for both pharmaceutical and food ingredients. He is knowledgeable in microbial screening/culture improvement; molecular biology and fermentation research for antibiotics, enzymes, therapeutic proteins, organic acids and food flavors; Biochemistry for metabolic pathways and enzymes kinetics, enzymes immobilization, bioconversion, and Analytical Biochemistry. He was external research liaison for Kraft Foods with Universities for research projects related to molecular biology and microbial screening and holds three bio-processing patents. In January 2005, he accepted an early retirement offer from Kraft Foods and in the same year he formed his own biotechnology company providing technical and marketing consultation for new startup biotechnology and food companies.

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