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# Using microorganisms to increase efficiency of biodiesel production

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In recent decades, an energy crisis increases in conjunction with the depletion of natural energy sources. Moreover, the international agreements such as KYOTO Protocol limit the rate of carbon emission and obligate the countries to use biodiesel energy, which causes a low-carbon emission rate. Comprehensive studies have been currently implemented to product biodiesel as the alternative renewable energy with more efficient and affordable costs instead of petroleum-derived diesel. Biodiesel, which can be called as fatty acid methyl esters (FAME), is characterized as non-toxic and biodegradable. Most countries use vegetable or plant oils to produce biodiesel. Whereas using vegetable oil causes an increase both in the food prices and in the probability of depletion of edible oils. Following the searches, waste-frying oil that has a harmful effect on not only human's health but also environment is used to produce biodiesel. Alternatively, using waste oils that are composed of 8.8% of free fatty acids lower the price of biodiesel production in the industrial areas. In these presentation microorganisms such as bacteria, algae, molds, and yeasts in biodiesel production were appraised based on recent literatures.

## Biography

Hasan Karadurmus has attended the researches in the Turkish Government Food Control Laboratory. He is currently an undergraduate student at the dual degree program between Istanbul Technical University and Montana State University in Bioengineering Major. He is interested in the roles of microorganisms in the biotechnology.

Gunduz Sinem Kocabas has graduated from the dual degree program between Istanbul Technical University and Montana State University in Environmental Sciences in May, 2013. She is currently a grad student at Istanbul Technical University in the Department of Environmental Engineering. Her interest areas are related with Eco-efficiency (Clean Production) and alternative renewable energy sources.

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