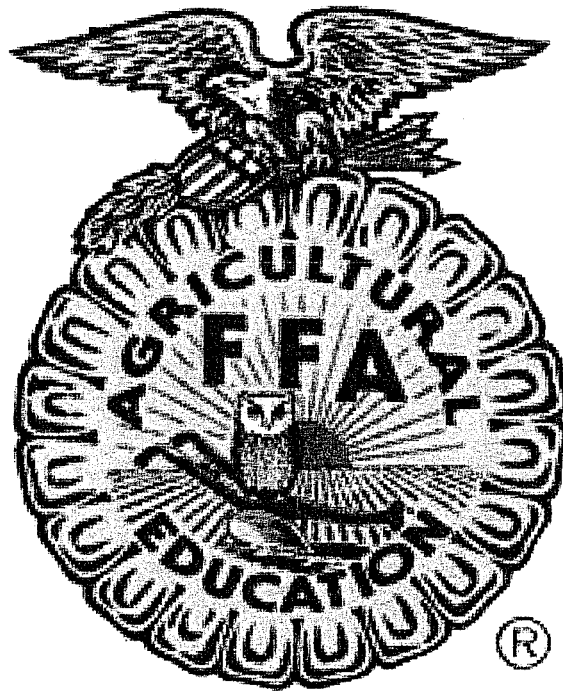


**Today, Tomorrow, and Everyday**



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**8th Grade Exploration**  
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Today, tomorrow, and everyday America will spend twelve million dollars on oil. Mind boggling isn't it? We import fifty-eight percent of the oil we spend right now. When analyzing our fuel use for the future, please consider the fact. America has only three percent of the world's proven oil reserves, yet we consume an amazing twenty-five percent of the world's supply. Do the math. The numbers just don't add up. We will need a solution in the very near future. In my opinion the answer is biofuel.

What exactly is biofuel? What are the two main types? What are the advantages? What are the disadvantages? Armed with these questions, I began my research for my 8<sup>th</sup> Grade Discovery Agriculture Education class.

Ethanol, the first of the two most popular biofuels, is a high octane liquid, approximately 10% produced by fermentation of sugars. Currently, ethanol is produced mostly from corn but also sorghum, potatoes, wheat, sugar cane, switchgrass, other biomasses and much more. Ethanol is similar to the old illegal method of distilling alcohol, often referred to as drinking alcohol.

Biodiesel can best be defined as a fuel produced in a process in which organically derived oils are combined with alcohol, either methanol or ethanol, in the presence of a catalyst to form methyl or ethyl esters. The methyl or ethyl esters can then be blended with conventional fuel or used as a stand alone fuel source. Biofuel is most commonly made from soybean oil, canola oil, animal fats, and waste vegetable oils. The conversion process begins when enzymes and microorganisms are frequently used as a biocatalyst to convert biomass and biomass derived compounds into desirable products. Cellulose and hemi cellulose enzymes break down carbohydrate fraction into five or six carbon sugars in a process known as hydrolysis. Yeast and bacteria ferment the sugars into producing

products such as ethanol. Biodiesel is a clear-burning diesel fuel made from domestically renewable feedstock from vegetable oils from soybeans, peanuts, cottonseed, canola, and sunflower seeds. It can also be made from used vegetable oils, such as frying oil or waste animal fats. Biodiesel is biodegradable, requires minimum engine modification, and maintains the payload capacity of diesel. Almost any diesel engine can be run on biofuel with minimum investment.

What effects has the production of ethanol had on the U.S.? Consider this. The price of corn in the U.S. is up 70% from just 6 months ago. Today corn is \$4.00 plus per bushel compared to less than \$2.00 a bushel just a year ago. This year 18-20% of our entire corn crop will be committed to production of ethanol and is expected to be 25% next year. This has had the trickle down effect of raising feed prices for livestock which in turn produces higher costs in the supermarket for meat and dairy products. Even something as seemingly unaffected as soft drinks such as Coke and Pepsi will continue to increase in price as a basic ingredient in soft drinks is corn syrup.

What about the flip side of that coin? What are some positive attributes of biofuel?

There are definitely some advantages to using biodiesel. In 2005, the Environmental Protection Agency released a report showing that biodiesel can reduce emissions of particulate matter by up to forty-seven percent compared to that of petroleum diesel. This report also verified a sixty-seven percent reduction in unburned hydrocarbons and forty-eight percent reduction in carbon monoxide compared to petroleum diesel. It has been predicted that by the year 2050, biofuels can reduce global warming effects from vehicle emissions by eighty percent. Forecasters say that by the

year 2015, biodiesel will cost 86 cents per gallon to produce. Utilizing agriculture crops for biofuels will regain nitrogen runoff and increase farm incomes by up to six times by the year 2025.

Ethanol burns cleaner than gasoline. It is completely renewable. It reduces greenhouse gas emissions and increases prices of feed grain grown by farmers. It is biodegradable and does not contaminate water should a spill occur. Production of ethanol has doubled in the last four years.

However, some questions still exist. For example, are auto makers prepared to meet the demands of using biofuel powered cars? Are we as Americans prepared to build the infrastructure needed to refine ethanol and biodiesel on such a large scale? One thing is for certain. Today, America is being held hostage by the oil producing countries of the world because. When we have only 3% of the world's reserves and need 25% of the world's oil. The numbers simply do not add up, no matter how you do the math.

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State Public Speaking Career Development Event  
Oklahoma FFA Association

I hereby certify that I meet all the eligibility requirements for participation in the state FFA public speaking event for the current year as set forth by the State Executive Committee and State Staff.

My speech entitled Today, Tomorrow, and Everyday in the 8<sup>th</sup> Grade Agricultural Exploration division is the result of my own effort and ability. It is understood that I am encouraged to utilize all available training facilities of my local school in developing my speaking abilities and that I may obtain facts and working data from any source. However, when information from other sources is used, such as direct quotes or phrases, specific dates, figures, or other material, it must be marked in "quotes" in the manuscript and identified in the bibliography at the end of the manuscript. Failure to do so represents plagiarism and will automatically lead to my disqualification.

April 15, 2008

Date

Kyle Hilbert

Participant's Full Signature

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