

Biodiesel Basics: Curriculum and Production Kit

High School Lesson Plans and Starter Kit to Produce Biodiesel in the Classroom

OBJECTIVE

This high school curriculum is designed for teachers to use in instructing students about biodiesel and encouraging them to evaluate the economic and environmental benefits of using bioenergy. The curriculum is used in conjunction with a biodiesel production kit that gives students the opportunity to produce fuel from raw soybean oil in the classroom or laboratory.

Lesson: Introduction to Energy

1. Identify and describe energy resources
2. Distinguish between limited and sustainable resources
3. Determine how energy is used

Lesson: The Need for Alternative Energy Sources

1. Define global warming and evaluate possible contributing factors
2. Analyze the carbon cycle
3. Investigate alternative forms of energy that may reduce global warming
4. Evaluate current and future availability of carbon based sources of energy & determine the role of biofuels in increasing the supply of energy resources
5. Examine the economic benefits of using biofuels



Lesson: The Soybean

1. Investigate the history of soybean production
2. Analyze characteristics of the soybean seed and determine the many uses for soybeans
3. Describe the characteristics of the soybean plant and identify its parts

Lesson: Biodiesel

1. Define biodiesel, distinguish between biodiesel and B5, B20, E-diesel and investigate the history of biodiesel
2. Analyze the properties of biodiesel and describe the advantages and benefits
3. Examine the biodiesel production process
4. Determine appropriate safety procedures

PRODUCTION KIT: The kit comes complete with everything needed to make 200ml of biodiesel. Students will heat up raw soybean oil, mix the catalyst and methanol together and then combine with the oil. Glycerin and soaps will settle out and the students will wash the biodiesel to remove impurities. Very specific procedures are provided along with safety guidelines for this informative, hands-on laboratory experience.

Biodiesel Basics:

Curriculum and Production Kit

_____ Please send me more information about Biodiesel Curriculum Kit.

Name: _____

School: _____

Address: _____

City: _____

State/ZIP: _____

Phone: _____

Email: _____



_____ Register me to **WIN a FREE Biodiesel Curriculum Kit.**

I will use the FREE Kit in my classroom this fall and welcome the National Soybean Research Laboratory staff and University of Illinois personnel to join me in presenting the lab portion of the curriculum and serve as technical support.

The National Soybean Research Laboratory at the University of Illinois has a biodiesel production facility for research, outreach and education purposes. NSRL provides biodiesel information, training and technical services related to the production of biodiesel. Visit nsrl.uiuc.edu or contact Danny Erickson at 217-333-4750 or drericks@illinois.edu for more information.