

# State College High School Biodiesel Project

Integrated Approach to  
Science and Agriculture

# Partnerships

- CTC Programs and Science Dept
- State College Food Service Dept
- PA Dept of Education
- PA Dept of Agriculture
- PAAE & NAAE
- PSU Extension – grant participant, presenter at Extension In-service
- PSU Biodiesel Team, Glen Cauffman, et al

# Teacher Activities

- Alternative Fuels Conference, Harrisburg
- PA Dept of Ed Equipment grant, \$12,500 – Diesel Engine & Dynamometer
- Alternative Fuels Lessons written for the “Marketplace for the Mind” website
- PA Dept of Ag Rural Youth grant, \$2,500 – Biodiesel Reactor & Supplies

# Teacher Activities

- Biodiesel Project Entered in the PAAE “Ideas Unlimited” Professional Dev Category
- Biodiesel Lessons & concepts presented at the “Ag In The Classroom” Conference
- Biodiesel Programming to be presented at the PSU Extension Educators’ In-service
- Biodiesel Lessons to be presented at the NAAE / ACTE Conference as NAAE Region VI “Ideas Unlimited” winner

# Biodiesel Lesson Packet

- Cover and Six Lessons at:



- <http://www.marketplaceforthemind.state.pa.us/m4m/cwp/view.asp?a=3&q=151091>

# Student Activities

Completed Biofuel Lessons and labs

Built Biodiesel Reactor

Collected Used Oil

Processed Biodiesel

Conducted tests using the dynamometer

Operated diesel equipment using biofuels and hydraulic fluids. Gator, MedBed, Tractor.

# Student Presentations

- Biodiesel Exhibit at the PA Farm Show – “Growing Greener” Section
- Biodiesel Exhibit at the Grange Fair
- Biodiesel Project with the State College Young Farmers’ Chapter
- Biodiesel Project with Science, Auto and Engineering students

# Project's Future Goals

- Provide quality biodiesel fuels for district diesel equipment
- Suggest use of biofluids for district hydraulic equipment
- Continue investigations of alternative fuels
- Integrate with Auto & Engineering Technology Programs
- Enhance science, math and English learning activities – students & teachers
- Other



# Student Stations 11/08/07

- 1. Soybeans – Feed, Oil, Fluids
- 2. Bioreactor – System & Operation
- 3. Glycerol – By product
- 4. Washing – Remove Soaps
- 5. Diesel Equipment – Fuel & Fluids
- 6. Blending & Cold Flow
- 7. Burning Biofuel vs Diesel

# Biodiesel Unit

## Can you Believe It??

