



Penn State switches to biodegradable hydraulic fluid in farm equipment

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University Park, Pa. -- In its latest "green" initiative, Penn State's College of Agricultural Sciences has converted all of its farm equipment to biodegradable, vegetable oil-based hydraulic fluid in an effort to reduce environmental damage from spills and leaks and cut cleanup costs.

To be unveiled with an informational display at Penn State's Ag Progress Days, Aug. 17-19, the move to use soy-based hydraulic fluid comes on the heels of another environmentally important program undertaken this summer when all fuel used in farm vehicles was changed to B20 biodiesel -- a mixture of diesel and 20 percent soy oil.

"We think it is important for the College of Agricultural Sciences to lead both the university and the rest of the state in taking these green initiatives," says Glen Cauffman, manager of farm operations and facilities. "Eventually, all Penn State diesel vehicles will burn biodiesel and use biodegradable hydraulic fluid -- even the elevators across campus will use biodegradable hydraulic fluid -- and then businesses will follow. The impact of this will be significant."

Cauffman ticks off the advantages of biodegradable hydraulic fluid: it provides an expanded market for Pennsylvania soybeans; increases use of a renewable resource; reduces dependence on foreign oil; and its enhanced lubricating properties result in lower operating temperatures.

But the most important factor, explains Lysa Holland, environmental compliance engineer in the university's Environmental Health and Safety Office, is that the conversion will prevent pollutants from getting into soil and groundwater.

"Hydraulic line breaks are the most common oil releases at Penn State and across Pennsylvania," she says. "If not attended to, these releases can cause contamination of soil, ground water and surface water. Although Penn State always cleans up oil spills, many other equipment operators do not, leading to the introduction of pollutants into the environment. Materials collected in the clean-up of a spill of biodegradable hydraulic fluid won't have to be sent to a hazardous waste landfill, greatly reducing costs."

Conversion to the soy-based hydraulic fluid is a joint demonstration project of the College of Agricultural Sciences, the College of Engineering, the College of Earth and Mineral Sciences, Environmental Health and Safety, and the university's Office of Physical Plant, along with study partner Cargill Inc., which has provided a significant portion of the 6,000 gallons of fluid needed for the changeover. Limited amounts of two other biodegradable fluids also are being tested in the College of Agricultural Sciences' 200-plus pieces of farm equipment, whose performance is being closely monitored.

One question to be answered is whether soil contaminated by spilled biodegradable hydraulic fluid can be reused after being composted to break down the oil. Another is whether the fluid can be recycled.

Penn State's Ag Progress Days is held at the Russell E. Larson Agricultural Research Center at Rock Springs, nine miles southwest of State College on Route 45. Hours are 9 a.m. to 5 p.m. on

Aug. 17; 9 a.m. to 8 p.m. on Aug. 18; and 9 a.m. to 4 p.m. on Aug. 19th. Admission and parking are free.

For more information visit the Ag Progress Days Web site at <http://apd.cas.psu.edu>.

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