

Ethanol 40% greener than gasoline

By JOSH FLINT

ACCORDING to a new study released by the Illinois Corn Growers Association, ethanol's global warming impact is 40% lower than gasoline.

For the study, Steffen Mueller, principle research economist at the University of Illinois at Chicago, assessed the global warming impact of ethanol produced at the Illinois River Energy plant in Rochelle.

Mueller spent six months tabulating data from the ethanol plant and 29 farmers who supply corn to the plant. He pinpointed IRE ethanol's global warming impact at 54.8 grams of carbon dioxide equivalent per m² joule.

"The global warming impact is defined as the sum of the emissions of carbon dioxide, nitrous oxide and methane emitted on a life cycle basis weighted by the global warming potential of each gas," Mueller explains.

As a comparison, gasoline has an average global warming impact of around 92 gCO₂e/MJ, meaning IRE's ethanol has a 40% lower global warming impact than gas. The average global warming impact for corn ethanol is 69.1 gCO₂e/MJ.

For the most part, ethanol has a lower impact than gasoline because the corn plant receives credit for the carbon it absorbs throughout the growing season, Mueller explains. Once ethanol is combusted in the engine, the carbon credit is cashed in as the exhaust rushes out the tailpipe.

Most of ethanol's global warming impact is a result of farming and manufacturing practices. On the other hand, gasoline incurs its impact almost exclusively during combustion. Mueller says the production process accounts for only 10% of gasoline's impact.

Financing and purpose

Mueller's study was financed by checkoff dollars from the Illinois Corn Marketing Board. According to David Loos, ICGA technical and business development director, the study cost \$25,000.

As part of the 2007 Energy Independence and Security Act, the EPA was required to examine ethanol's contribution to greenhouse gas emissions. In doing so, Loos says EPA is proposing to penalize ethanol's emission status with an indirect land use factor.

In basic terms, the indirect land use factor says increased ethanol production means more corn acres, which means fewer bean acres. Therefore, a country like Brazil may increase soybean production to make up for lost supply. Loos says the problem comes in if Brazil chooses to destroy acres of rainforest or grassland to plant beans. ICGA feels EPA's proposed indirect land use factor is a stretch at best, Loos adds.

"The cause-and-effect relationship cannot be predicted with existing models and data," Loos explains. "We feel increased yields in corn and soybeans, both domestically and internationally, will offset any potential land use change."

Mueller's study should help ICGA

Key Points

- Ethanol's global warming impact is 40% less than gas.
- Ethanol still has room for improved efficiency.
- Indirect land use has sparked a debate between the EPA and ICGA.

and EPA come to agreement on ethanol's actual greenhouse gas contributions. "The corn growers of Illinois can be proud of their leadership in working with the EPA," Loos concludes.

To turn in a number lower than 54.8 gCO₂e/MJ, Mueller says additional green tactics would need to be implemented. For the farmers, this means more no-till,

winter cover crops and better N utilization. On IRE's part, corn fractionation and installing an anaerobic digester could help reduce the global warming impact, Mueller notes.

If farmers and ethanol plants work together and maximize efficiency, Mueller says the number could drop as low as 41.4 gCO₂e/MJ, or 55% that of gasoline.

THE CONDITIONING CHOICE



The model 1225 is equipped with flanged bearings.

UM The Unverferth Rolling Harrow®: The Most Choices For More Than 25 Years

With more than 25 years in the field, the Unverferth Rolling Harrow® soil conditioner is the one that's become synonymous with the ultimate in seedbed finishing.

Hitch the Rolling Harrow soil conditioner to your primary or secondary tillage tool and you're ready for planting in a single pass. The time-proven, robotically welded 12" diameter baskets feature eight scalloped and angled high-carbon steel blades for outstanding durability.

The spiraled, pitched blades of the aggressive basket till up to 4" deep for maximum soil conditioning, residue and chemical mixing. The spiraled, straight blades of the passive basket smooth and level the surface for quicker, more uniform germination and emergence.

The Most Choices

- Working widths from 12' to 63'
- Flat-, stack-, cross- and vertical-fold
- Free-floating or fixed-downpressure settings
- Shielded bearings for high-residue fields or flanged bearings for withstanding high side-load stresses
- Straight spike-tooth, diagonal round-tooth, coil-tine leveling bar or none
- Powder-coat finish of tractor-red or green



The model 225 is equipped with shielded bearings.

The right choice of which Rolling Harrow soil conditioner is best for your operation depends on acres of use, volume of residue and operating preference. See your nearest Unverferth dealer today for complete details, check our Web site at www.unverferth.com or call 1-800-322-6301.



P.O. Box 357 • Kalida, Ohio 45853
(419) 532-3121 • FAX (419) 532-2468
unverferth.com

1-800-322-6301

*** Innovative design • Quality manufacturing**