

Fuel Expert: Using Ag By-Products For Energy Making More Sense

UNIVERSITY PARK (Centre Co.) — Using agricultural by-products as an energy source these days is making more economic sense, according to a fuels expert in Penn State's College of Agricultural Sciences. But "biomass" is not free, he points out.

"We have the opportunity to use biomass — generally defined as organic matter including wood, agricultural crops, crop residues and animal manures — to produce several types of fuel," says Dennis Buffington, professor of agricultural engineering. "But we can no longer think of these materials as free."

Although energy prices have stabilized this year, there are increased concerns about the price and availability of energy in various forms, notes Buffington. "Just one year ago, we were fac-

ing energy prices of over \$2 a gallon for gasoline, natural gas prices approaching \$25 per 1,000 cubic feet and home heating fuel of \$1.40 a gallon in some markets," he says. "Considering the terrorist attacks last September and the continuing terrorist threats, we are now even more committed to reducing our vulnerability to world events by decreasing our dependence on imports of overseas petroleum."

Examples of biomass include ethanol produced from shelled corn, biodiesel from organic oils (derived from plants, animals and spent cooking oil), methane from digesting animal manures, ethanol from "cellulosic" plant materials and methane from landfill gases.

There are benefits in addition to the fuels produced, including

by-products that often can be used for animal feed, organic fertilizers and soil amendments, points out Buffington. And there is always the potential for creating jobs and spurring economic development in the communities where these processing facilities are located.

"Unfortunately, many analyses of the economic benefits of producing ethanol from cellulosic plant materials often regard the cellulose as free," he says. "Whether we are talking about straw, corn stover, corncobs or other crop residue, these materials are anything but 'free.'"

Obvious expenses, according to Buffington, include the labor,

equipment and fuel costs for harvesting these biomass materials, transporting the low-density materials to a central facility for producing the fuel and storing the materials for use in off-season.

"Less obvious expenses include increased soil compaction because of more equipment traffic on the fields, increased soil erosion because of the loss of vegetative cover, increased need for fertilizer and herbicides for the next cycle of crops, decreased moisture-holding capacity of the soil, and decreased food and shelter for wildlife," he says.

"Obviously it's difficult to place dollar values on indirect

costs of utilizing crop residues, such as soil compaction, soil loss and wildlife habitat," Buffington adds. "Direct costs of utilizing crop residues can be established for factors including labor, equipment and fuel."

Producers also need to consider that the crop residue has an opportunity cost from other competitive uses such as livestock bedding, landscape mulch, fiberboard and insulation.

"In all analyses, we must always include the economic costs and the environmental implications associated with utilizing crop residues to produce fuel," says Buffington.

New York Beef Producers Schedule Bull Test Sale

SYRACUSE, N.Y. — The New York Beef Producers Association (NYBPA) is facilitating a Central Bull Testing Program as a tool for evaluating and merchandising potential herd sires.

Following a 112-day feeding period, the top indexing bulls will be presented for sale on April 27 at the NYS Fairgrounds in Syracuse. The 56 bulls, representing eight breeds, are being fed and managed at Erwindale Farm in Waterloo, N.Y.

The purpose of a Central Testing Program is to:

- Compare individual performance of potential herd sires
- Provide an opportunity for seedstock producers to market individual bulls
- Provide a source of bulls for commercial and seedstock herds and
- Provide an educational opportunity for sellers and buyers alike.

After 56 days on test, the cumulative average daily gain was 2.95 pounds, the weight per day of age is 2.50 pounds.

Not all bulls that complete the test will be sold. Of the 56 bulls consigned, only 40 will sell. Bulls will not be allowed to sell if they fail the following two exams:

- Reproductive soundness. Each bull will undergo an internal and external exam by a veterinarian to evaluate his potential to breed females. A passing score indicates that from a reproductive standpoint, he is determined structurally fit to breed. Libido, which is his desire to find and service females in heat, will not be determined, nor will semen be evaluated, as the results are in-

conclusive on young bulls.

• Structural soundness. A herd sire is expected to travel a lot of ground to fulfill his duties in a short breeding season. Therefore bulls will be evaluated for defects in feet and leg structure that may inhibit their ability to service cows. As this evaluation can be subjective in nature, leaving it open to criticism, it will be completed by an individual with no direct ties to the consignors or the NYBPA.

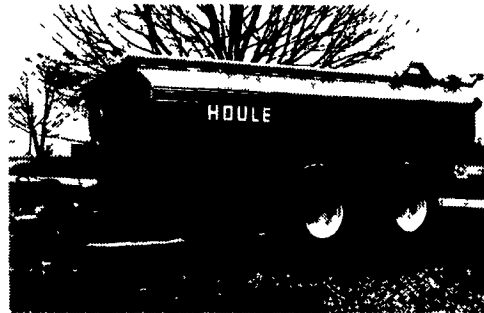
Those that pass the above tests will be ranked by an index which takes into consideration average daily gain (ADG), weight per day of age (WDA), ultrasound measured backfat (BF), intramuscular fat (IMF) and ribeye area (REA). These factors will be weighted to represent the relative importance to the commercial industry: ADG, WDA and REA will make up 90 percent of the index, the remaining 10 percent to be placed on BF and IMF. Bulls that rank 90 or better will be eligible for sale.

Following the bull sale, 29 Empire Heifer Development Program certified heifers, and some select purebred females and club calves, will be offered for sale. This will be an excellent opportunity to improve the genetics of an existing herd or begin a herd with some of the best cattle to be offered in the northeast.

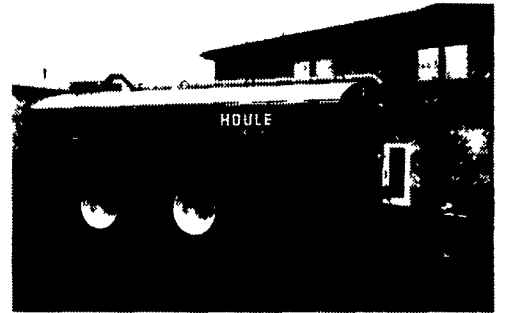
To receive a sale catalog, or for more information, contact Bill Miller, bull

test manager, at (585) 750-4663.

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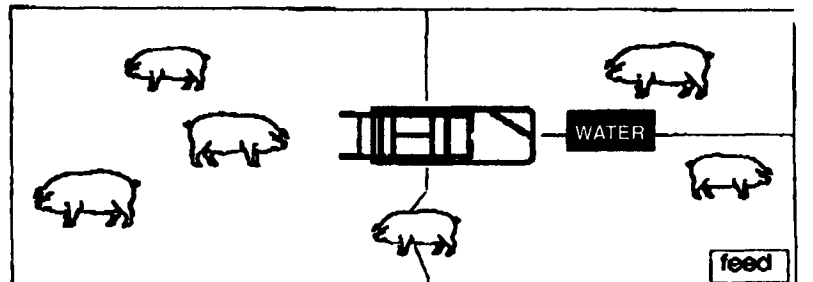
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