Researchers say community still can produce $1.21 gasohol

LANCASTER — A well-built, well-run small community corn-alcohol distillation plant can produce 200-proof ethanol for gasohol for about $1.21 a gallon when credits are allowed for by-products.

That's almost as cheap as an efficient on-farm plant can distill 190-proof. But many farmers won't need the 'dry' or anhydrous 200-proof ethanol.

These are among gleanings from a report to the U.S. Department of Agriculture by a Kansas research group. The group also found that an efficient and large on-farm still should be able to produce 190-proof corn ethanol for about $1.13 a gallon — net of the credits mentioned — compared to $1.34 for a small on-farm still and $1.63 a gallon if the fuel is distilled with a farmer's "pot still" — a commercial model of the moonshiner's still.

Researchers qualify their estimates carefully, stressing efficiency and proper management and the sensitivity of their estimates to changes in prices of corn and other ethanol sources as well as distillery byproducts.

The estimates show the farm opertor paying less for his ethanol 'feedstock' — in this case, corn — than the larger distiller would pay. A 56-pound bushel of shelled corn yields about 2.5 gallons of ethanol in a highly efficient plant. The report says the farmer can estimate his corn feedstock cost at $1 per gallon, while the community distiller would calculate it at $1.10 for each gallon of ethanol.

Milton L. David, director of the group that produced the report, said the study showed, "If the boiler in a plant has an efficiency of 80 percent, it uses about 100,000 Btu of energy to produce dry stillage — the animal-feed byproduct — and one gallon of anhydrous or 200-proof ethanol that has somewhat less energy value — 76,152 Btu.

But to produce 190-proof ethanol and wet stillage would require only about 40,000 Btu — about 40 percent of the total energy needed for the five steps for higher proof ethanol and dry stillage."

The report, by Development Planning and Research Associates, Inc of Manhattan, Kans., includes an eight-page "checklist of design and performance criteria for small still alcohol plant loan applications." Prospective ethanol producers might use it in seeking funds from private lenders of USDA's Farmers Home Administration.

FmHA has about $10 million this fiscal year for direct farm-ethanol loans to farmers who can't obtain credit elsewhere. FmHA is authorized to guarantee as much as $100 million in business-and-industry loans to distillers by September 30.

The multi-section report, containing about 220 pages, is entitled "Small-Scale Fuel Alcohol Production" — stock number 001-000-04124-0 — and may be obtained for $6 per copy from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20401.

Of the report, David said, "It covers suitability of ethanol in spark ignition and diesel engines, fuel use on and off the farm, principles of ethanol production, use and cost of feedstock, by-production utilization, production plant characteristics and costs to produce ethanol. Potential uses of fuel ethanol include powering farm and commercial stationary engines, grain dryers and boilers, but its most practical near-term use will be as fuel for mobile engines.

"Spark ignition engines would be most easily converted to ethanon use because they can burn gasoline or 200-proof ethanol mixed with gasoline — gasohol," David said.

"Next easiest would be engines modified to burn lower-proof ethanol in lieu of gasoline. Still another approach would be engines that could burn either lower-proof ethanol or gasoline by having dual fuel systems.

"The value of ethanol in a spark-ignition engine is increased if the engine's compression ratio is increased from 8 to 1 to about 12 to 1. Conversion costs would vary greatly — from $700 to $2,000 or more.

"As for diesel engines, most feasible fuel for the near term is 100- or higher-proof ethanol injected into the engine air intake just upstream from the turbocharger. This idea is getting most attention now because of the availability of a conversion kit sold by M&W Gear Company, Gibson City, Ill."

Ethanol can be produced from many farm crops and wastes. The report suggests how farmers and others may assess suitability of various feedstocks, classified into three groups: those mainly consisting of starches — currently most often considered — sugars or cellulose.

Land sales for development can bring farm problems

NEWARK, Del. — Farm owners considering the sale of part of their land for building lots, shopping centers or similar development may wish to think about future uses of the land they retain.

Normal farm operations may be considered nuisances by your new neighbors, warns University of Delaware extension pesticide specialist John McDaniel. Dust resulting from tillage procedures, noisy farm equipment, and odors from poultry and livestock operations, have all caused complaints in the past.

Recently the U.S. Environmental Protection Agency has begun to monitor pesticide drift in parts of Arizona. The area involved was predominately farmland until recent times. Then residential construction boomed. With it came shopping centers, schools, roads, parks and all other improvements needed to give new arrivals the services they needed.

Cotton is the principal crop grown on the farms in the area. It is a standard practice to apply a defoliant chemical to remove the leaves before machine-harvesting the cotton. Some of the defoliants used are irritating and have a disagreeable odor. The newcomers complained. National television came on the scene, followed by a congressional committee, and the situation became very controversial.

As a result, the EPA has published what they call an advisory opinion covering application of defoliants to cotton in Arizona. This Advisory Opinion spells out methods for minimizing drift of pesticides. After the monitoring and exposure studies are complete, more stringent regulation may be announced. Application by ground equipment is also clearly covered in the advisory opinion.

Sometime in the future the application of pesticides near residences, schools, highways, shopping centers, and other sensitive areas could well be restricted. Such restriction would have a serious effect on uses which could be made of fields lying next to such sensitive areas, notes McDaniel.

This situation is a possibility farmers need to keep in mind as they consider selling off part of their land for strip development. Judging by events already experienced in the long run such development could seriously affect future farming operations on their remaining land.