

Fuel From Farm Products

James E. Williams, Acting Program Director, Agriculture

Summary

Imported crude oil provides the raw material for just under half of the liquid fuel consumed in the United States. This dependency on foreign imported oil and shortages of farm fuels in 1979 sparked an interest in producing fuel from alternative sources such as farm products.

Alcohol is a liquid fuel that can be produced on the farm from farm products and holds promise as a substitute for some petroleum based fuels when used straight or as a blend. Considerable interest in alcohol production has been communicated by Arizona farmers and agri-businessmen to Cooperative Extension Service agents, specialists and administrators.

The Cooperative Extension program is a unique educational delivery system which has both financial and program support from federal, state, and local governments. The basic mission of the Cooperative Extension Service is to extend useful and practical information to the people of Arizona. For this reason, the Extension Service is a part of the land grant university system so that research information generated by the Experiment Station can become a part of the information diffused to the people. In Arizona the land grant university is the University of Arizona.

It is not the intent of the Cooperative Extension Service to advise clientele on what decision to make, but rather to provide information on which decisions can be made.

Motor vehicle fuel consumption in Arizona during 1978 amounted to almost one and one half billion gallons according to the Department of Transportation. If ethanol was substituted for ten percent of the total consumption it would amount to nearly one hundred and fifty million gallons. If two hundred gallons of alcohol can be produced per acre of agricultural products, it would require about seven hundred and fifty thousand acres to produce the one hundred and fifty million gallons. This is over half of our total crop acreage. Double cropping could however increase the crop acres each year and some biomass might be available from dry land acreage.

We will try to examine the feasibility of alcohol production from farm products in Arizona by farmers and agri-businessmen. We will try to discuss both the positive and negative aspects of alcohol production. The information presented is not intended to influence decisions as to whether or not anyone goes into ethanol production, but is intended only to inform you.

Farm-Produced Alcohol: Where Do We Go From Here?

Jim Porterfield, Assistant Director
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Summary

Farmers should protect their investment when buying a still by: 1) Requiring a warranty from the manufacturer; 2) Having an attorney check the warranty; 3) Placing the down payment in an escrow account and withholding a large portion of the payment until the still is installed and operating properly.

A basic unit consisting of a distillation column, cook/fermentation tank, and boiler, if bought commercially, will cost a minimum of \$20,000. Extra cooking and fermentation tanks, extra storage tanks, a new building to house the still, and automation could well run the cost of a commercial still to over \$250,000 for a unit that produces less than 250,000 gallons of alcohol/yr.

Seventy five percent of tractor horsepower in the United States is diesel. Farmers should be asking the question, "What can readily replace diesel?"

Farmers will have to decide whether or not they want to use their grain crops and wood energy sources to provide liquid fuel for their own operations, or whether they want to try to provide fuel for their urban neighbors. If fuel is provided to our urban neighbors, farmers run a risk. They are not assured necessary fuel for their own use from their own products if crude oil supplies were shut off by another Middle East crisis.