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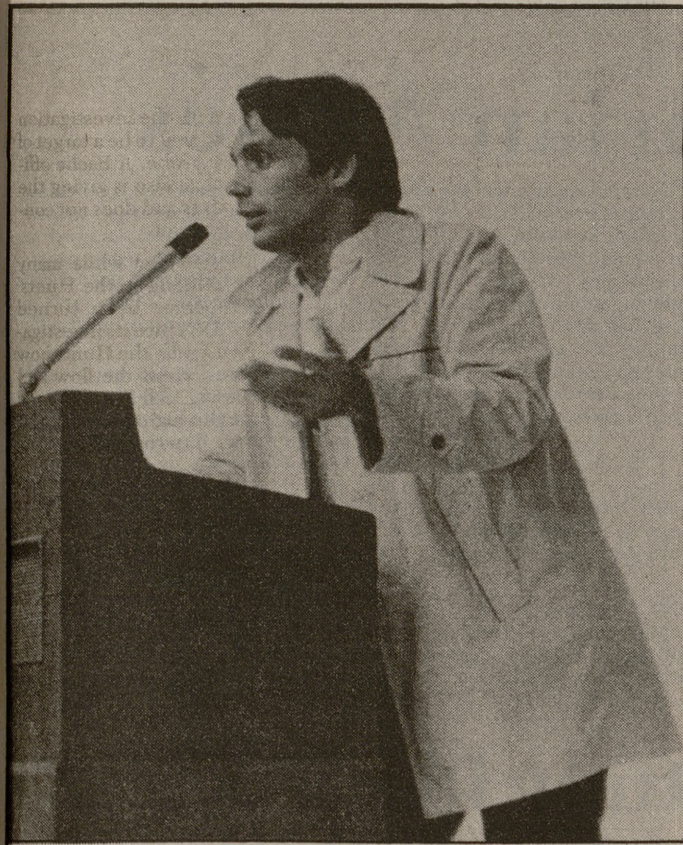


Photo by T. Garrett

Sam Olivieri, president of the International Students Association, explains the purpose of the seven seminars planned for this semester. The seminars are to "show international students the beauty of being able to live in a country where you can speak freely and to give Americans a chance to see different points of view held by foreign students."

Alcohol may be dream fuel

By DANA SMELSER
Battalion Reporter

Texas A&M University researchers are working on the farmer's dream — turning crops into fuel for his machinery and feeding the fuel residue to his livestock.

Researchers at the Texas Agricultural Experiment Station are operating an alcohol-distillation unit to see if alcohol would be practical as fuel for farmers.

Henry O'Neal, operator of the unit, said the ethyl alcohol, or ethanol, is produced by the fermenting crops such as corn, wheat, potatoes, sugar cane or sugar beets.

The researchers want to make distillation cheap enough that farmers could make their own on a small-scale basis.

The unit, which costs about \$90,000, stands 20 feet long, 10 feet wide and 26 feet high. It can produce 190-proof alcohol, O'Neal said.

The alcohol cannot be used to make gasohol, he said, because gasohol requires 200-proof alcohol. Gasohol contains 90 percent unleaded fuel and 10 percent alcohol.

The ethanol can be used for engine fuel without added petroleum.

If the carburetor is adjusted to allow more flow, O'Neal said, "the engine will just purr along just like gasoline."

"Before, we knew absolutely nothing about it (distillation)," O'Neal said. "Now we know how to cook, ferment and distill the grain."

One bushel of grain makes 2.5 gallons of approximately 185-proof alcohol, O'Neal said.

The process also leaves about 18 pounds of dried grains per bushel, which can be used to feed livestock. The dried grain contains about 25 percent protein.

Ethanol is produced in a series of steps:

— The grain is cooked with water and an enzyme for about an hour, to break down the starch it contains.

— The liquid, or mash, is cooled and another enzyme is added to change the starch to fermentable sugars.

— Distillers' yeast is added, and the mash is allowed to ferment for

two to three days, converting the sugar to ethanol, making what is commonly known as beer.

— The ethanol is separated from the fermented mixture by boiling it off and condensing the ethanol vapors into a liquid.

— Most of the water is removed from the vapors, making approximately 190-proof alcohol.

— The water is dried from the remaining residue, leaving distillers' dried grains, which can be used as feed.

Before the unit began operation in January, little information was available on producing alcohol on a small, farm-scale basis, O'Neal said.

"We wanted to make a small

plant that would be representative of what a farm-scale plant might be," he said.

Further research will be done in a number of areas.

Although the cost of production of a gallon of ethanol is hard to estimate, the researchers hope to collect enough data to help other producers estimate the cost of production in their own units, O'Neal said.

Plans are also being made to explore the long-term use of alcohol in an engine.

"We know that alcohol is a good fuel, but there may be some maintenance considerations under long-term use that we will have to take into account," he said.

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Internat'l students air seminar opinions

By DIANA SULTENFUSS
Battalion Reporter

Some of Texas A&M's international students spoke on their countries' histories and gave opinions on current problems Thursday.

Students from Algeria, Saudi Arabia, Sri Lanka and Palestine spoke to about 100 people in 102 Zachry in the second of seven seminars scheduled by the International Awareness Committee of the International Student Association.

Some of the students refused to allow publication of their names or photographs because of worry about possible retribution from their countries.

The time is right for Algeria to make its influence known in the international arena, said A. Bouhassoun, a student from Algeria. But this won't happen until economic independence has ensured that the country's voice will be heard, he said.

"The Palestinian voice has been muted and neglected by the world community for years," said the president of the General Union of Palestinian Students, who refused to give his name. "The Palestinians will keep on struggling as they have always done, for the liberation of Palestine and for the erection of a progressive democratic state where everyone can enjoy equal rights and privileges regardless of race or religious belief."

A representative of the Sri Lanka Student Association said it is difficult for an economy to achieve substantial levels of development at a reasonable rate on its own. But he said he dislikes many forms of foreign aid because the aid which is given is often a means of investment.

"I never consider oil a blessing to our country at all," said Abdullah Salamah, a graduate student from Saudia Arabia. "Oil put the country in a moving stream it could not resist."

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