

# Ag Engineers Address Needs Of Farmers

COLLEGE PARK, Md. — The extent of agriculture's impact on the environment is not clear, according to Robert C. Lanphier III, president of the American Society of Agricultural Engineers.

Nevertheless, the general public often perceives agriculture as the villain when it comes to environmental contamination, especially involving water quality. And publicly or privately, members of the agricultural community agree that agriculture does have some adverse effects on the environment. They're also working hard to minimize those effects.

"Farmers do a very good job with what they're given to work

with," said Lanphier. "They are willing to try new ideas . . . as long as they're economically as well as environmentally sound."

It is the responsibility of researchers, including agricultural engineers, he said, to develop new technologies that benefit both the farmer and the environment.

Agricultural engineers with the Maryland Agricultural Experiment Station and the Cooperative Extension Service University of Maryland System are doing just that. They are investigating ways to reduce agriculture's impact on human health and Maryland's valuable natural resources, including the Chesapeake Bay, without mak-

ing farming unprofitable. Some examples of their efforts in this area are:

- **Computer-assisted nutrient management.** Herbert Brodie is developing computer programs to improve agricultural producers' ability to manage animal wastes and municipal sludges. His goal is to help farmers maximize the nutrient benefits from wastes while minimizing negative environmental impacts.

- **Geographic Information Systems for Resource Management.** Blending the latest computer science and natural resource management technologies, Dr. William Magette is developing computer-

based decision support systems that will help farmers and resources managers control land-use activities for maximum environmental protection at least cost. In the future, these systems will incorporate the use of satellites that are part of the nation's strategic defense system.

- **Pollution reduction through computer modeling.** Dr. Adel Shirmohammadi is using current environmental research to improve existing computer models — and develop new ones — to simulate the natural environment. These models can then be used to predict the movement of agricultural pollutants and the effectiveness of different managerial control techniques. The models could play an important role in Chesapeake Bay cleanup efforts.

- **Pesticide safety equipment.** By combining bioengineering and biomedical principles, Dr. Arthur Johnson is developing more effective masks for people who need respiratory protection, including those who apply pesticides. He also is conducting research on the engineering principles that govern human and animal physical responses to environmental stimuli.

- **Computer control of water quality in aquaculture.** Dr. Fred Wheaton is developing sensors and control systems to automatically control the quality of water used for closed-cycle fish production systems. He also is exploring techniques for removing potentially hazardous environmental materials in wastewater generated by aquacultural facilities.

## Christmas Tree Growers Gather

WARREN (Warren Co.) — Sixty-five area Christmas tree growers from Warren and surrounding counties recently gathered at an educational program organized by Warren County Penn State Cooperative Extension.

The program was held near Torpedo in Warren County to address the production practices of Christmas trees.

According to Sanford Smith, Warren County Extension agent, the program topics covered included shaping Christmas trees for quality, shearing Christmas trees with a "Saje-Shear," and insect pest management in the plantation. "Christmas trees are becoming a significant agricultural crop in Northwestern Pennsylvania, but many growers need technical assistance and information," said Smith.

The presenters for the evening program included Dr. Jim Finley, k of Penn State's School of Forest Resources, Dr. Paul Heller, Penn State Department of Entomology; and Jack Ferrell, Strathmeyer Forests, Inc. The program was hosted by father and son team, Gib and Paul Sanford, of Youngsville. Both men are Warren County Christmas tree growers and members of the Pennsylvania Christmas Tree Growers Association.



Dr. Jim Finley of Penn State's School of Forest Resources demonstrated the art of shearing Christmas trees for quality at a recent educational program organized by Warren County Penn State Cooperative Extension. Sixty-five area Christmas tree growers from Warren and surrounding counties attended the event.

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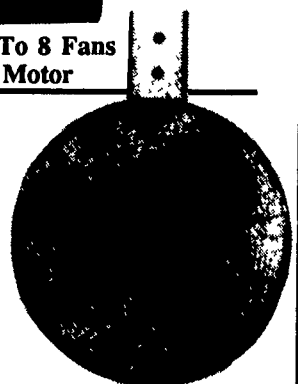
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