

# Two Ag Engineers Honored

UNIVERSITY PARK — Two agricultural engineers from The Pennsylvania State University have been honored by the American Society of Agricultural Engineers.

Albert R. Jarrett, associate professor of agricultural engineering, is the winner of the 1985 A.W. Farrall Young Educator Award for teaching excellence, and Dennis Murphy, associate professor of agricultural engineering extension, is the winner of the 1985 Packer Engineering Safety Award. Both awards were presented at the society's annual winter meeting in Chicago.

The Farrall Award was given to Jarrett for outstanding contributions to the advancement of teaching and professional achievement in education. Jarrett was cited for "constantly offering improved instruction for his students, and structuring courses to meet student needs at various levels of development," the ASAE judges reported. "He motivates his students to high levels of performance, and they in turn are

complimentary of his teaching."

Jarrett is vice chairman of the ASAE's Pennsylvania section. He is also a member of the Ag Progress Day committee and college of engineering's academic and planning committees. He's a registered professional engineer and surveyor, and his research is concentrated on runoff and soil erosion.

Murphy is the first recipient of the Packer Engineering Safety Award, developed to "recognize outstanding contributions to the advancement of agricultural safety engineering in research, design, education or promotion," the ASAE judges reported. "Murphy has been an energetic, enthusiastic, creative and innovative farm safety educator. He has developed 12 instructor guides, 12 video tape programs and 57 other publications on a variety of engineering safety topics."

Besides being an ASAE member, Murphy is president of the National Institute for Farm Safety and a member of the executive committee on the National Safety Council.



Dennis Murphy



Albert R. Jarrett

# Futuristic tools may help farmers cope with future

COLLEGE PARK, MD — Technology gives Maryland farmers a better chance to keep their financial balance during a troublesome period for American agriculture.

Dick Levins, farm management specialist for the Cooperative Extension Service, says computers and robots are futuristic tools that are becoming more practical.

Levins says using computers as troubleshooters lets farmers improve their efficiency and save labor. Adding machinery to a computer system takes efficiency a step further. The result—robots that can reduce labor and hazardous conditions in agriculture.

"Robots are becoming more popular in industry and we can apply the same technology to agriculture," says Dr. Ali Farsaie, agricultural engineer at The University of Maryland. The most likely use is harvesting crops that normally require lots of manpower, he says.

"A study done by one of the (agricultural equipment) companies identified certain crops that have the feasibility of using robotics in agriculture," Farsaie says. Labor intensive crops like tobacco, fruit, citrus and strawberries are at the top of the list, he says.

Farsaie and others believe the day is coming when farmers will be able to program their equipment to harvest, spray or plant without constant human supervision.

With cameras and a computer on board to act as the "eyes and brain," a mechanical fruit picker can spot its target and take it off the tree without the aid of human hands. And a computerized spray rig can send out its chemical mist without having humans close enough to be affected by the pesticide, Farsaie says.

Researchers in several states are applying robotic techniques to agriculture, Farsaie says. Borrowing techniques from other industries, agricultural engineers are using computer technology to improve mechanical efficiency.

Computers are the key to the changes in agriculture, say the Maryland specialists. Programs that are a form of "artificial intelligence" make it possible to reduce labor and give expert management help to individual farmers. This means the program can make decisions based on the information fed into the computer.

Dairy farmers, for example, are taking a special interest in technology. Dr. Mark A. Varner, an Extension dairy specialist, and Levin have completed a computer program that analyzes reproductive problems in dairy herds.

"Basically, we've taken the steps I normally take and the things I consider when I go out to a dairy farm, and put that logic into a computer program," Varner says.

By questioning the farmer ahead of time about an individual cow or the whole herd, Varner can reduce trips to the farm, suggest management changes and recommend veterinary services.

The key to the process is asking the right questions, Varner says. The farmer may already know there is a reproductive problem, but the computer helps find how much it is costing the farm, the source of the problem, where more data need to be collected, and what solutions are available, he says.

About 100 Maryland farms also use computers to feed dairy cows individually, says Extension dairy specialist Dr. E. Kim Cassel. The idea is for each cow to get the amount of feed it needs to most efficiently produce milk, she says.

When the cow walks up to the feeder, a metal tag around its neck is read by the computer system and a portion of the feed that cow needs is dumped into the trough. This way, farmers with large herds can make sure the individual needs of their cows are met. And warnings show up on the daily printout if the cow did not eat enough feed. This helps detect sick or injured cows, Cassel says.

"We feel we should look out for the long term interest of both the consumer and farmer," Varner says of computerizing dairy farms. "It's good for the consumer because it keeps the price down, and it's good for the producers because it gives them an advantage over other states."

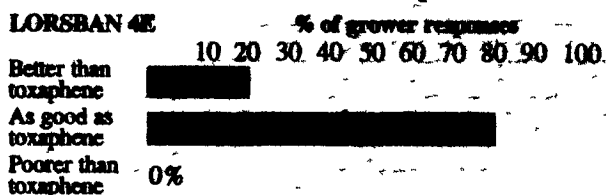
Agricultural economists say the long term effect of computers and robots in agriculture is increased efficiency. When used properly, technology helps farmers decrease the cost of production, Levins says.



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