# PSU's mobile lab does soil tests

UNIVERSITY PARK — It may look like a Winnebago, but it is actually a nutrient laboratory, on the road expressly to help clean up the Chesapeake Bay.

The Pennsylvania State University and the state Department of Environmental Resources have teamed up to turn a recreational vehicle into a moving lab that will perform the essential tests every farmer needs.

"Its name is mobile nutrient laboratory," says Dale Baker, professor of soil chemistry and the man behind the van. "That name has two meanings; the van is mobile, and it analyzes one of the most mobile nutrients in the soil, nitrate nitrogen."

Nitrate nitrogen is one of the nutrients which is a detrimental pollutant in the Chesapeake, getting there from the Susquehanna River, which picks up the nutrients from the manured and fertilized farm lands in southeastern Pennsylvania.

The lab is on its way to becoming a home for an important tool ecologists and consultants can use to help the farmers do their part to clean up the bay: a small, computerized spectrophotometer which rapidly analyzes nitrate-nitrogen, water soluble phosphorus and other elements in soil, water or manure.

"That is the secret to why this will work so well," says Baker. "Anyone who has used the type of measuring tools found in any kitchen can operate this machine." Private consultants who work with farmers could include the same laboratory equipment and methods in their existing programs, he adds.

The concept sounds simple. The lab will visit about three farms a day with a tractor-powered soil-core sampler which takes samples at selected field depths. Within an amazingly short period of time, a farmer can find out just how much nitrate nitrogen or other elements are in his soil, manure or water.

With this information, and an on-board Macintosh computer, plans can be made to alter manure and fertilizer management programs to maintain productive soil without losing excess nutrients to runoff.

The problem, says Baker, is that many farmers do not have adequate records, and just aren't sure how much manure and fertilizer they have been putting on their fields.

"They have to have good records for this to work. It's a good system, but not good enough without records," he says.

Even without the past documents, the team of DER specialists who will run the mobile lab (and hopefully private consultants with their own labs, as well as the Conservation District and Soil Conservation Service personnel using the Soil and Environmental Chemistry Laboratory at Penn State, Baker adds) will still be able to devise the all-important management plans.

Any prior tests performed at Penn State's Merkle Lab and the Soil and Environmental Chemistry Laboratory on an individual farm will be incorporated to help determine how much manure and commercial fertilizer a farmer should use.

Baker says farmers need not fear that any information will lose its confidential status. "This is not for regulatory purposes, but only to promote the cleanup of the bay," he says.

"Farmers are not the culprits," Baker says; they just need help performing their occupation. "The ultimate goal is to have more profitable and more environmentally compatible nutrient management plans on every farm in the Commonwealth."

Baker looks to private enterprise to pick up the manure farmers don't need. "For example, if they get the poulutry and swine manure out of Lancaster County, and market it, farmers should be able to handle the cattle and dairy manure," he says, referring to the waste which is applied to the fields.

"Dairy farming is the biggest farm industry in southeastern Pennsylvania, but with a little reshuffling of the manure usage, they can sustain it," he adds. Ivan Glick of Sperry New Holland has made calculations which indicate that the dairy industry in Lancaster County can recycle its manure nutrients if erosion is controlled. "Our highest priorities must be erosion control and manure management," Bakler says.

Private concerns can market manure, he says, for burning as a fuel, removing to other countries for use in farms or forests or as an animal feeding supplement after broasting or ensiling.

Since Baker began working on the Chesapeake Bay project, he's seen progress. "Oh, yes, Lancaster County certainly looks a lot different than it did a year ago," he says.

He's counting on the farmers and industrious marketers to do even more. "I plan to be out of this research business by the end of September in 1986," he says.

# Six students win Ag Alumni scholarships

UNIVERSITY PARK — The College of Agriculture Alumni Society awarded scholarships to six students who have demonstrated high academic achievement and leadership ability this year. The six were honored at the College of Agriculture Scholarship and Awards Banquet.

The alumni scholarship winners were: David A. Despot, a major in horticulture and the son of John and Helen Despot of Altoona; Tina A. Dreisbach, a major in plant science and the daughter of Thomas and Sandra Dreisbach of Wilkes-Barre; Todd A. Johnston, a major in agriculture from Lower Burrell; Timothy G. McElhinny, a major in food science and the son of Conrad and Phyllis McElwinny of Pittsburgh; Dale D. Persing, a major in animal bioscience from Bath; Charles H. Turner, a major in food science and the son of Charles and Linda Turner of Murrysville.

"The college has a strong financial assistance program for undergraduates," says James Mortensen, acting assistant dean for resident education. "This year 178 students have received awards from 89 separate scholarships, 11 of which are new or substantially expanded." he continues. Twenty five were awarded to freshmen. The College of Agriculture scholarship and awards program is one of the largest at Penn State.

Students in agriculture compete for nearly $200,000 in scholarships from annual and endowed funds, donated by friends, alumni and agricultural industries. Awards are made on the basis of financial need and academic promise. So far this year $140,000 of those funds have been awarded.