

Farmland Preservation

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R1, Lititz, Lancaster County

—Photo by Dick Anglestein

Poultry virologist wins \$60,000 grant

NEWARK, Del. — John K. Rosenberger, a poultry virologist at the University of Delaware's Agricultural Experiment Station, has received a national competitive grant for \$60,923.

The three year grant was awarded under the U.S. Department of Agriculture's animal health research program. It will permit him to investigate the possibility that certain viruses, known to cause skeletal disorders in broiler chickens, may do so indirectly by damaging the intestinal tracts of infected birds, thus causing malabsorption of the nutrients needed for proper bone development and growth.

Skeletal abnormalities such as crippling or leg weakness in young growing broilers are a major problem for poultry producers on Delmarva and other parts of the U.S. Nationwide, economic losses due to clinically apparent leg

weakness alone have been conservatively estimated at \$15 million a year. Additional unrecognized losses may be occurring because of the overall poor performance of afflicted birds, including those which show less obvious effects of infection.

Rosenberger and other researchers have demonstrated that skeletal problems such as arthritis and osteoporosis (brittle bones or femoral head necrosis), as well as stunting and feather abnormalities, can be caused by a number of reoviruses which affect poultry.

He has isolated 109 such viruses from crippled chicks in commercial broiler houses on Delmarva since 1978 when he began to study the problem. These viruses can be found not only in leg joints, but also in the intestinal tracts of affected birds. It has been suggested that virus-related in-

testinal damage may result in malabsorption of nutrients.

"If this proves to be the case," says the virologist, "no matter how much feed these birds consume, they're not going to put on weight or grow properly."

Cooperator on the project will be Michael Ruff, a parasitologist at the USDA's Agricultural Research Center in Beltsville, Md. Ruff has developed a procedure to assay for malabsorption in vitro in the laboratory which will permit the researchers to pinpoint any intestinal problem much more exactly than would be possible with live birds.

Rosenberger, who heads Delaware's department of animal science and agricultural biochemistry, considers the Maryland parasitologist's participation highly important because it will save time and duplication of effort.

"Much of today's research is so sophisticated that we simply have to cooperate, share equipment and expertise," he says. "We could do the work here at Delaware to test for malabsorption, but we'd have to cover the same ground Ruff already has, in order to set up the test. That would take a lot of time and doesn't make sense when he has the expertise and is prepared and willing to cooperate with us."

It's important to determine the potential role of reoviruses in a possible malabsorption syndrome, Rosenberger says, because the effects of such a syndrome on bird productivity and performance could be of enormous economic significance. Should he and Ruff establish a definite connection, the next step will be for the virologist to try to develop a vaccine to protect broiler chicks from infection by the reoviruses involved.