

Scientists win grant to study poultry bronchitis

NEWARK, Del. — Two University of Delaware poultry virologists, Jack Gelb, Jr., and John K. Rosenberger, have received a \$40,000 national competitive grant to study infectious bronchitis, a respiratory disease of chickens.

Gelb, a researcher at the Delaware Agricultural Experiment Station, says respiratory tract infections are a major problem of poultry producers.

A recent broiler industry survey estimates that infectious bronchitis and other diseases of the respiratory tract are a constant health threat and economic problem costing well over \$8 million a year on the peninsula alone.

Infectious bronchitis may well have as much economic impact on the poultry industry as infectious Newcastle disease, says the scientists. It is an explosive disease in broilers, with a

short incubation period. It spreads rapidly and no treatment is possible during its acute stage because the virus does not respond to antibiotics or other medication.

Because it weakens their natural defenses, bronchitis leaves birds vulnerable to secondary infections. It is believed to be one of the agents that causes air sac disease, a complicated condition which affects both growth and condemnation rates in broilers. In hens, the virus can also cause oviduct damage, thus affecting table egg production.

There are three diseases for which chickens are routinely vaccinated—Newcastle disease, Marek's disease, and infectious bronchitis.

Unlike the first two, which have only one kind of infection-causing antigen and so require only one kind of vaccine, the bronchitis virus has at least 10 or 12 variant

forms, or serotypes, each capable of causing infection.

Though chickens in commercial production are immunized for one or two of these serotypes, they can still contact bronchitis if they are exposed to any other variants.

Gelb and Rosenberger's grant is to study how these variant viruses occur. Scientists think that bronchitis in chickens may resemble influenza in humans in that the virus is always taking new forms, each slightly different.

When a new flu serotype develops and causes a disease outbreak, such as the Hong King strain a few years ago, it may run rampant until a vaccine can be developed for its control. A similar situation may occur with infectious bronchitis.

There are several theories about how new bronchitis strains emerge, but very little is actually known. The work is difficult to do because it involves serotyping, is isolating and identifying, each form of the virus.

Gelb is one of a handful of scientists in the U.S. now

working with this technique. It is a time-consuming, expensive process most people don't want to tackle.

He says the challenge is to develop experimental procedures that will allow for valid interpretation of the results. This is basic research for which the present three-year grant is just a start.

"We hope to make the University of Delaware a significant contributor in the area of infectious bronchitis serotyping as it already is in some other areas of poultry disease research," says the virologist.

"If we can get an idea of how these viruses emerge, it may be easier to control infectious bronchitis in the field. Because of the density of broiler production on Delmarva, there's a tremendous opportunity for new serotypes to develop."

While studying another disease—air sacculitis—with fellow Experiment Station researchers, Gelb has already succeeded in isolating five bronchitis serotypes, including two "rather interesting" isolates.

"We feel present-day vaccines do not protect against these two," he says. "We're exploring virgin territory here, as far as any previous research is concerned."

If young broilers in the field are infected with one of the variant forms of the virus he's found, he can confirm this a few weeks later by using the new isolates to challenge live birds from a broiler house.

If birds are already immune, this would imply previous infection by these variant serotypes.

This, in turn, could mean that these forms of infectious

bronchitis are contributing to poor growth rates and condemnation from air sac and other diseases on Delmarva. If this is the case, says the virologist, we may need to develop a new vaccine.

While conducting research on this project, Gelb and Rosenberger will be working with fellow scientists in the department of animal science and agricultural biochemistry.

They will also work closely with Paul Allen of the University's poultry diagnostic laboratory at the Georgetown Station, as well as with various industry representatives.

Ag chemical head hits handling of nitrites issue

WASHINGTON, D.C. — A top spokesman for agricultural chemicals Tuesday cited the federal government's flip-flop handling of the nitrites issue as another example of regulation by emotion rather than by sound science.

Jack D. Early, President of the National Agricultural Chemicals Association, offered this view at a House Agriculture Committee hearing called primarily to cross-examine witnesses from the U.S. Department of Agriculture and Food and Drug Administration for their abortive 1978 decision to move against nitrites based on data which was later provide scientifically unsound.

In his criticism of the government's handling of now-vindicated nitrites, Early testified that "what is so very disturbing in this issue is the unscientific handling of scientific information by regulatory officials responsible for making societal decisions."

Early offered two

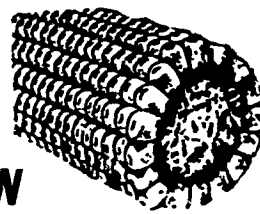
recommendations for improvement in federal procedures for the regulation of suspect cancer-causing chemicals:

Modify the 1958 Delaney Clause to allow regulators to evaluate benefits as well as risks of suspect chemical carcinogens.

Place responsibility for determination of carcinogenic potential with a "properly constituted scientific group devoid of any regulatory responsibility."

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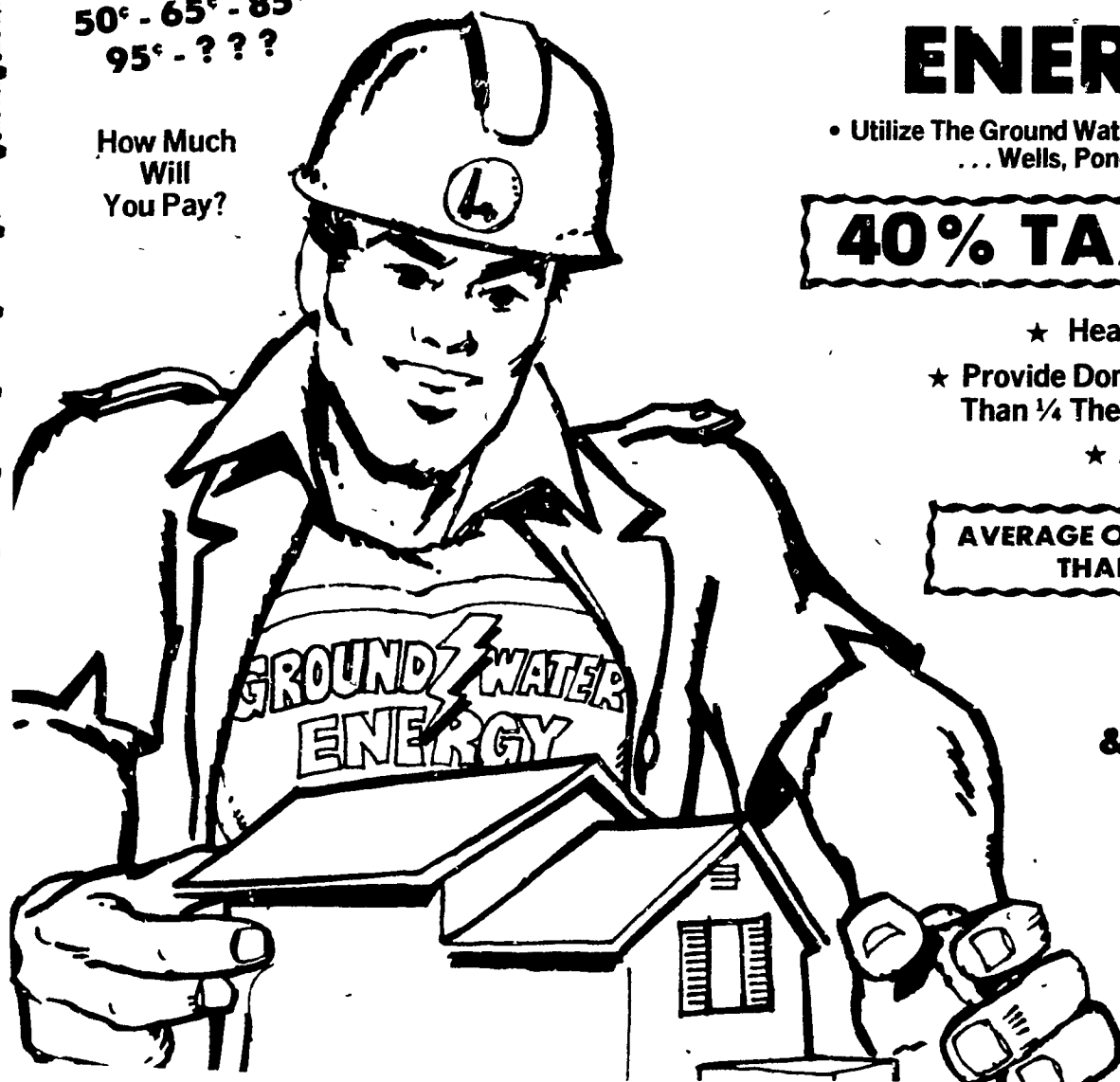
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