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AVIAN INFLUENZA AND SALMONELLA ENTERITIDIS: WHAT'S NEW?

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Avian disease detection and reduction programs, whether they exist at the regulatory, industry, or individual farm level, are constantly changing.

Changes are necessary in response to new circumstances, perceived risks, and evolving scientific information that impacts on testing and control of the disease. Recent modifications are soon to be enacted in two disease program areas that are of crucial importance to the Pennsylvania poultry industry: avian influenza and Salmonella enteritidis.

These programs are very different in scope and objectives. Avian influenza (AI) is of importance to all poultry species and is regulated by state and federal agencies. Highly pathogenic AI can result in disastrous morbidity in bird populations. For these reasons, eradication of this form of AI is the goal.

In contrast, Salmonella enteritidis (SE) can infect many avian and mammalian species, but very rarely causes clinical disease in mature poultry species. Salmonella enteritidis, as currently being addressed in Pennsylvania, is of primary concern in commercial egg flocks because of the potential for infected hens to periodically lay eggs that contain SE bacteria. If improperly handled or cooked, contaminated eggs used for human consumption can cause outbreaks of human salmonellosis. Because complete elimination of SE from all animal and bird populations and environments is impossible, the goal of SE control measures becomes reducing the risk to public health.

Voluntary enrollment of some Pennsylvania chickens flocks in the SE Pilot Project (USDA-VS) has helped to elucidate some of the epidemiologic data necessary to formulate a risk reduction plan.

The following is a brief look at the proposed recent changes in each program.

Avian Influenza

During the last five months, tens of thousands of samples from Pennsylvania birds and premises have been tested for AI virus or antibody. Very few positives, indicating the presence of H5N2 AI virus, have been found, and most were limited to the live bird markets or poultry dealer conveyances or premises. Despite extensive testing, no live H5N2 AI virus has been found in commercial poultry flocks in Pennsylvania during this period.

For these reasons, modifications to the present restrictions on Pennsylvania flocks are being formulated and will go into effect on or about June 1, 1993. The modifications are the result of recommendations of state and federal animal health officials and avian disease

specialists representing Pennsylvania and surrounding states who convened at the Northeast regional meeting of the American Association of Veterinary Laboratory Diagnosticians and the U.S. Animal Health Association at Saratoga Springs, N.Y. on May 18 and 19.

The modifications will include a lessening of restrictions on the movement of all poultry. In most instances, this will allow free movement of poultry throughout the state. The current pre-movement test requirements on live birds would be suspended. At the same time, sampling of gathering points including live bird markets, auctions, and exhibitions as well as conveyances (trucks, vans, and crates) will intensify for a time.

Serologically positive flocks now under quarantine may have another option (other than depopulation) to qualify for release from quarantine. This will probably involve swabbing of birds and premises for AI virus at prescribed intervals as well as placement of sentinel birds.

The cooperative Pennsylvania AI surveillance program as currently in place will continue to operate. Routine, regular submissions of blood or eggs will be tested for antibody at the laboratories in the Pennsylvania Animal Diagnostic Laboratory system. These laboratory services are free of charge to the producer.

In addition, birds submitted to the laboratories for diagnostic evaluation will routinely be tested for antibody to AI. Any questions regarding the application of these changes should be directed to the

Pennsylvania Department of Agriculture, Bureau of Animal Industry, (717) 783-5222.

Salmonella Enteritidis

Learning from the related experiences and research of others is an important part of formulating new programs for disease control and risk reduction.

On May 19, scientists, veterinarians, and technologists working directly with the SE Pilot Project (USDA-VS) in Pennsylvania had an opportunity to exchange findings, ideas, and philosophies with Dr. Tom Humphrey of the United Kingdom at an informal meeting at the University of Pennsylvania, New Bolton Center.

Humphrey is a scientist at the Food Laboratory of the Public Health Laboratory at Exeter. The United Kingdom has recently had extensive experience with monitoring chicken flocks for SE. A particularly virulent strain known as phage type 4 appeared in poultry and eggs in the last 1980s, resulting in many human food-borne illnesses and deaths. Fortunately, this dangerous strain of SE is not present in the U.S.

Similarities were noted between the northeast U.S. and the United Kingdom in the actual rate of SE-contaminated eggs as well as the current difficulties in predicting flocks at high risk for shedding SE into the egg. Some important differences in the experiences of the U.K. compared to the U.S. are:

- The human salmonellosis outbreak and death rates are much higher in the U.K.
- Most human outbreaks in the U.K. are related to the consumption of single-service eggs or egg-containing foods prepared in family homes. In the U.S., most outbreaks associated with eggs are in institutional or restaurant settings where eggs or egg-containing foods are batch-prepared.
- Poultry house rodents do not appear to be as important to the maintenance and spread of SE in the U.K. poultry flocks as they are in the U.S.

The United Kingdom is concentrating most of its control efforts in two major areas: 1) maintaining all

breeder flocks free of SE and 2) educating consumers in the storage and preparation of eggs and egg products.

Additional risk-reduction measures in U.K. poultry flocks include the use of competitive exclusion flora (broilers only), lowered stocking densities, acid treatment of poultry feed, and testing of environments, eggs, and birds for SE to identify high risk flocks.

Humphrey also described his research that showed that SE organisms, if present in a newly laid egg, are in very low numbers and found exclusively on the outside of the egg yolk membranes or in the albumen close to the yolk. Factors in the albumen that deter bacterial growth keep the numbers low. However, as the egg ages to 3 to 4 weeks, the yolk membrane breaks down and the SE has access to the yolk material, which is an excellent medium for bacterial growth. At this time, SE numbers increase dramatically, and the egg becomes highly contaminated. The time needed for the breakdown of the yolk membrane can be greatly increased if eggs are kept at refrigerator temperatures. Therefore, in addition to adequate cooking, an effective way to reduce the risk of consuming highly contaminated eggs is to purchase fresh eggs and keep them refrigerated until use.

Discussion also centered on information to help formulate plans for the "Second Tier Project," which is a proposed voluntary poultry industry driven quality assurance program in Pennsylvania by which many Pennsylvania flocks can be routinely monitored for SE or SE risk factors. Set guidelines for rodent control, cleaning and disinfecting, and disposition of eggs are being discussed.

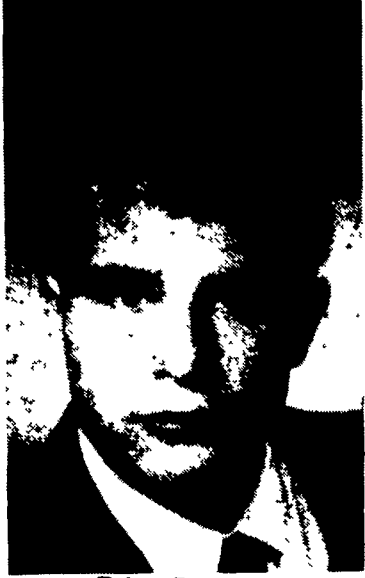
The Pennsylvania Poultry Federation has requested that USDA provide some administrative support for such a program. The particulars of sampling, testing, and administration will be worked out by committees comprised of industry volunteers, with input as needed from SE Pilot Project veterinarians and university scientists and veterinarians. Farm-based testing may be appropriate in some cases.

New laboratory procedures for testing eggs and identification of high risk flocks are being evaluated as ways to decrease labor requirements and turnaround time associated with traditional bacteriologic culture of samples for SE. It is hoped that the program will take shape and be implemented within the next few months, and will probably run simultaneously with the SE Pilot Project for a designated period of time.

Farm Credit Hires Field Rep

LEWISBURG (Union Co.) — Northeastern Farm Credit, ACA announces the addition of Brian Dygert to the position of "floating" field representative, receiving training and orientation until a service territory is assigned. Dygert is headquartered in the Lewisburg administrative office.

Dygert was graduated with an AAS in business administration from Alfred State College and a bachelor's in business administration from Fredonia State College. He comes to Farm Credit with an agricultural background of eight years of dairy farming and one year of beef farming. Dygert was formerly employed with Foster Fields Farm, Inc. He resides in Millifenburg.



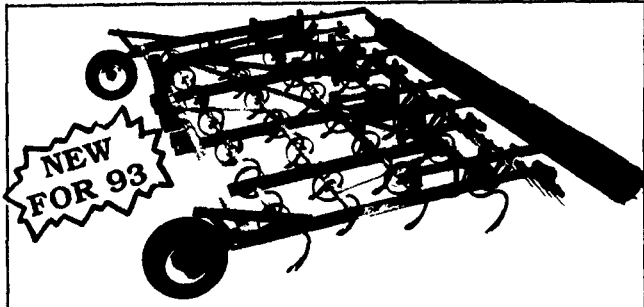
Brian Dygert

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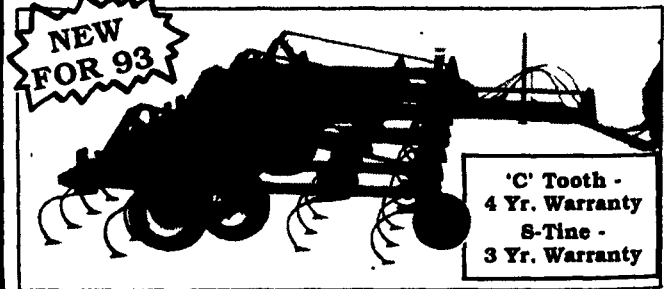
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