

Egg Quality Program, While Successful, Still Has Room For Improvement

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— Before the Salmonella Pilot Project began in 1992, 44 percent of all outbreaks of Salmonella Enteritidis (SE) in the nation could be traced back to Pennsylvania layer flocks.

Since then, that's changed.

In 1992, 38 percent of the 70 flocks in the program tested environmentally positive for SE. Twenty-eight percent of the samples were positive.

A few years later, that also changed.

In 1995, just three years after the project's beginning, through the efforts of study and eradication, 13 percent of the flocks tested positive. Only 3.2 percent of the samples were positive.

As a result, we've "drastically reduced the load in the houses of SE," according to Marlin Heneger, head poultry inspector with the Pennsylvania Department of Agriculture.

Using the standards set up through the Hazard Analysis Critical Control Points (HACCP) guidelines, with the combined efforts of an array of industry and research associations, the Pennsylvania Egg Quality Assurance Program or PEQAP has gained a nationwide reputation for its significant progress in reducing the threat of SE to humans.

PEQAP, according to Heneger, has "gained the recognition as the most progressive HACCP-type production program in our country."

Heneger spoke to about 100 poultry sales and service professionals and agri-industry representatives Wednesday during the last day of a Penn State-sponsored Pennsylvania Poultry Sales and Service Conference at the Holiday Inn in Grantville.

Despite all the good news, however, in the last year, the number of flocks testing positive has gone up slightly, to 9 percent as of the end of March, according to the inspector. In the test year from July 1, 1997 to March 31, 1998, 1.3 percent of the samples have tested positive. There are 277 flocks participating in the program.

The reasons? "Statistically," said Heneger, "we're feeling a little bit of pain because of A.I. (avian influenza)." He noted that the testing, because of the quarantine restrictions in the zone in the northern part of Lancaster County, home to most layer flocks in the state, was not quite as regular as the protocol called for.

Though the test program remains quite effective, the inspector noted that 25 flocks in Pennsylvania continue to be environmentally positive. Of the 25, 14 tested positive the very first time they were tested.

Heneger blames the following on some reasons why flocks can still be testing positive:

- Layer houses aren't getting effectively cleaned and disinfected (C&Ded), and are holding a "reservoir" of pathogens, perhaps in areas such as corners of feed units, where the bacteria can still thrive.

- A possibility could be that there could be a low level of SE infection in pullets, and testing may not be sensitive enough to identify SE. Also, the stresses of moving the birds and placing them into production could contribute to picking up the bacteria.

- A large percentage of flocks



Mike Smullens, growout manager with Empire Kosher Poultry, Inc., spoke about the importance of turkey brooding at the conference.

still testing positive come from layer complexes, he noted. In fact, 86 percent of those flocks testing positive the first time were in complexes. Still, 64 percent of flocks in the program are in complexes. Are we testing adequately? Is there something being overlooked? And is biosecurity being followed to the letter?

- Managers need to make a closer examination of water cups, feed boxes and feed corners, cleaning areas that could be suspected of carrying the bacteria more thoroughly.

- Rodent control. In the houses which tested positive for SE, the project trapped a lot of mice, said Heneger. In the positive houses, 84 percent of the mice tested positive for SE. When the lights go out, the mice flock to the feed areas, leaving droppings all over — and which are readily ingested by the birds.

In the end, maybe even the questions need to be re-examined. "Are we really asking the right questions, even in this business?" he said.

But what PEQAP found was significant — at least to those concerned about human health risks. The level of contamination stands at only 2.6 or 2.7 per 10,000 eggs. That equates to one egg in every ten 30-dozen cases.

In the end, the project was set out to be a "risk-reduction program," said Heneger. "We've been successful in moving in that direction."

Those 277 flocks participating in the program make up 85 percent of the state egg industry. "No other industry organization has anything near to that level of participation," Heneger said. "It says something of the industry. You people need to be commended. You have committed yourself in actively trying to do something about it."

But even the best efforts of the industry can go unnoticed if those who prepare food don't follow proper preparation procedures to stop foodborne illness.

Dr. Chuck Benson, professor of microbiology at the University of Pennsylvania New Bolton Center, recalled an incident in which a pancake house in nearby Maryland was shut down because of an SE outbreak. It just so happened that the cooks in the restaurant were cracking eggs at 4 in the morning for the breakfast rush at 7:30. The eggs sat out at room temperature for three and a half hours.

Even if the SE present in the eggs were small, the amount, at

room temperature, doubles every 20 minutes. That's three generations in an hour, he said. So starting out with 10,000 bacteria could lead to millions and millions of bacteria.

Benson recalled how he visited a local market. He was looking at a case of eggs, filled to overflowing from the refrigeration case. Cases of eggs were sitting on the floor at room temperature. Benson claims he took pictures to show to his classes about improper storage. He even joked about how store management would "follow me around."

The point Benson was trying to make: SE control is "part of food safety and it's everybody's business," he said. At New Bolton, "we teach food safety as a group activity."

Benson, who works with the Salmonella Reference Center, a PADL Component with the School of Veterinary Medicine, spoke about his work since 1969 with the bacteria. He said that there are more than 2,500 different Salmonella serotypes — but there are only 10-12 "we worry about medically," he said.

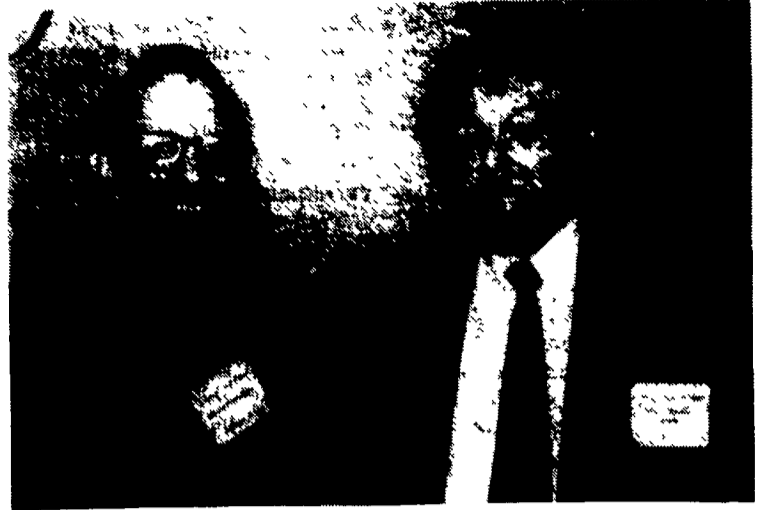
Salmonella organisms can be carried and colonize in chickens, dogs, cats, humans, snakes, though some carry a certain preference for particular animal species. But some Salmonella can wreak "havoc in human intestines," Benson said.

Benson focuses on the disease as it affects humans. There are three ways humans can display an infection:

- Enteric fever. This effects humans only. It's also known as typhoid fever. It is an invasive organism that colonizes the Peyer's Patches (the lymph nodes inside the intestine) and spreads through the body. It creates a condition in the body of malaise, fever, nausea, diarrhea, abdominal tenderness, cough and delirium. It can manifest itself as rose spots on the hands. It's treated with antibiotics.

- Septicemia. This rare condition amounts to only about 1-2 percent of all cases. It creates lesions everywhere on the body, almost like acne. It is often associated with defects of the host defense mechanism.

- Gastroenteritis. This is the most common clinical syndrome. Whether someone contracts this



Marlin Heneger, head poultry inspector with the Pennsylvania Department of Agriculture, left, spoke to about 100 poultry sales and service professionals and agri-industry representatives Wednesday during the last day of a Penn State-sponsored Pennsylvania Poultry Sales and Service Conference at the Holiday Inn in Grantville. Dr. Chuck Benson, professor of microbiology at the University of Pennsylvania New Bolton Center, also spoke at the conference.

condition depends on how much of the bacteria is ingested. The incubation period is 4-48 hours. It has a sudden and violent onset. Benson said, "Everybody has... had a close, personal experience with gastroenteritis" at one time. Symptoms include headache, chills, fever, nausea, vomiting, diarrhea, and general muscle pain. It lasts from one to four days. Death is possible for the very young, very old, and immunosuppressed. Many can get over the infection, however, without treatment, Benson noted.

The dangerous thing about Salmonella is that animals or human can act as carriers but manifest no signs or symptoms, but can transmit the bacteria to others. The acute state can last from several weeks to several months. But the chronic stage can be dangerous. "Typhoid Mary," who transmitted the disease to thousands of people in the Northeast, was a chronic shedder. "She was a cook," he noted.

Benson noted that so many resources are used in the industry to combat the threat. "This beast is something that will keep a lot of people busy for a long period of time," he said.

Salmonella is the leading cause of foodborne illness, according to Benson, who quoted a story from Newsweek Magazine. There were 50,906 cases of salmonellosis reported to the Centers for Disease Control (CDC) in Atlanta, Ga. in

1987. Across the country, according to CDC, 47 percent of those infected died at various sites across the country — more prevalent than E. coli, of which only 6 percent died.

Benson indicated a "new kid on the block" is being watched by researchers: *Salmonella typhimurium* DT104. It's an invasive, indiscriminate pathogen that can infect cows, pigs, chickens, and humans.

The industry knows that in the chain, from source to consumer, every chain relates to personal hygiene — observing biosecurity, keeping eggs refrigerated, cooking them appropriately, and importantly, "get people to wash their hands," Benson said. "This will significantly decrease the number of Salmonella going around."

Mike Smullens, growout manager with Empire Kosher Poultry, Inc., spoke about the importance of turkey brooding. One key to environment control is knowing the exact temperatures necessary for turkeys in different stages of development. Some growers have invested in an infrared temperature gun. A quality gun, according to Paul Patterson, assistant professor of poultry science at Penn State and one of the event coordinators, costs about \$170.

There were 140 registered for the two-day event, according to R. Michael Hulet, associate professor of poultry science at Penn State, and a program coordinator.

Suiza Foods To Purchase DFA Joint Venture

SPRINGFIELD, Mo. — Dallas-based Suiza Foods Corporation announced early in February a definitive agreement to acquire Johnson City, Tennessee-based, Land-O-Sun Dairies LLC, a joint-venture partner of Dairy Farmers of America (DFA).

The transaction is valued at approximately \$287 million.

Land-O-Sun Dairies operates 13 fluid dairy and ice cream processing facilities in Tennessee, North Carolina, South Carolina, Georgia, Illinois, Kentucky and Virginia.

Last year, Land-O-Sun reported revenues of approximately \$464 million. Land-O-Sun produces and markets products under the Pet and Flav-O-Rich brand names.

The acquisition, which is subject to customary closing conditions, is expected to be completed during the first quarter.

Dairy Farmers of America's president and chief executive officer Gary Hanman said the transac-

tion marks the beginning of an important alliance with Suiza Foods.

"Suiza Foods has experienced tremendous growth in Class I fluid milk sales in the past couple of years and those Class I milk sales are crucial to our member farmers' success. Dairy Farmers of America will continue to supply raw milk to Land-O-Sun and we look forward to providing the growing raw milk needs of Suiza Foods."

Suiza Foods chairman Gregg L. Engles said that Land-O-Sun is a strong, well-run dairy business that complements existing manufacturing and distribution assets of the company. He added that dairy farmers are a critical link in the supply chain for all Suiza plants.

"We look forward to building a broader relationship with Dairy Farmers of America, as Suiza grows in the dairy processing sector," he said.

Suiza Foods has leading positions in the dairy, plastic packag-

ing and packaged ice industries. Its principal holdings are in fluid dairy processing, refrigerated, shelf-stable and frozen food products, packaged ice and plastic containers, and include Suiza Dairy and several other subsidiaries.

Dairy Farmers of America began operation on January 1, 1998, with the consolidation of four dairy marketing cooperative Associated Milk Producers Inc. (AMPI), Southern Region; Mid-America Dairymen Inc. (Mid-Am), Milk Marketing Inc. (MMI), and Western Dairymen Cooperative Inc. (WDCI).

The new cooperative has 22,000 members in 42 states. DFA markets more than 38 billion pounds of milk, supplying bottling and manufacturing plants that produce a complete line of dairy products for consumers in the United States and around the world.