

Preventing Foodborne Illness

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approximately 400,000 cases per year in which SE could have been a cause of foodborne contamination, yet the total confirmed cases of ALL salmonella was only 40,000.

But campylobacter remains the number one cause of foodborne illness in the U.S. Meat birds can frequently test positive. However, the bacteria are readily killed by cooking — and are not as stable outside their environment as SE, noted Kradel.

Consumers are wary and international markets are increasingly concerned about antibiotic use for disease prevention or growth promotion, according to Kradel.

A controversial issue, one of extreme concern, noted Kradel, is the development of antibiotic-resistant organisms that can affect humans. Can the use of antibiotics in animals develop resistant strains of organisms in humans, resulting in real public health threats?

Kradel noted his impression is that the concern, for the public health professionals, is "settled in their mind," he said. "We do contribute to the problem as well as misuse (the antibiotics) in human medicine."

The wrong uses of antibiotics in humans could be a significant issue. "Inappropriate use in people is a major, maybe the major issue, in developing antibiotic resistance," Kradel said.

Eventually the use of antibiotics for disease prevention and growth promotion is likely to be prohibited. Its use for treatment may be by veterinary prescription only. These are many recommendations recently made by the World Health Organization.

At the center of intensive research and surveillance programs regarding antibiotic use is the National Antimicrobial Resistance Monitoring System, or NARMS.

Kradel noted the success of one program, the Pennsylvania Egg Quality Assurance Program (PEQAP), now used as a model nationwide to control SE in eggs.

In 1992, at the start of PEQAP, 22 percent of samples tested SE-positive. In 1999, that number had dropped to 1.4 percent, and in August this year, to 0.87 percent.

This points to the success of the program, at floor level, in controlling SE.

About 315 flocks in the state are enrolled in PEQAP.

"The overall reduction in SE with PEQAP has been tremendous," said Kradel.

Already a National Egg Safety Program has been proposed using PEQAP as a model. But the initial draft of the program will be delayed past September, according to Kradel.

In red meat processing, a standard Hazard Analysis Critical Control Points (HACCP) program is mandatory. The HACCP program is "science-based," rather than on sight, touch, or smell. Though some groups are challenging HACCP, the program may be helping reduce foodborne illness.

The technology continues to improve. Already, in western Pennsylvania, a company sells pasteurized in-shell eggs. Of course, the prices of the eggs are 35-40 cents more per dozen.

Some individuals believe it may be possible to wipe out, at the farm level, all food safety challenges. But that is impossi-

ble, noted Kradel, giving our current technology and the realities associated with animal production.

Perhaps it is because, in this country, we have "gotten too clean," that competing organisms can't help us in our fight against the insidious bacteria and viruses that have been in food animals for millennia. But great progress has been made in fighting SE while educational efforts about food preparation will prevent campylobacter problems.

The recent controversy over West Nile Virus (WNV), in which virus has been found in many Northeast states, continues to draw concern in the poultry industry. Kradel said, "We do not believe it is an issue at this time, nor do we think it will be."

To date, there has been no evidence of WNV in Pennsylvania. WNV can transiently (for a short time) infect poultry, but it does not make them sick nor can it pass the virus on to other animals or people.

This year the virus has affected humans in New Jersey and New York. Last year about six people died. This year, about eight people died and about 60 were infected and recovered.

Pennsylvania is spending \$10 million per year to monitor and institute preventive measures to combat WNV.

A big issue on human health arose when, recently, in Walkerton, near Ontario, Canada, the well water supply became contaminated with E. coli O157. About 2,000 people out of a population of 7,000 became ill, resulting in about 6-16 deaths. The infection was caused by contaminated wells and a failure of the chlorination system. During construction, wells were not properly sealed. According to



Dr. David C. Kradel, PennAg Industries Poultry Council consultant, left, spoke at the Penn State-sponsored Poultry Management and Health Seminar in Manheim at Kreider's Restaurant. At right is John Schwartz, Lancaster extension director.

the poultry veterinarian, animal production units in the area were incriminated as the source of the E. coli O157.

As for animal disease issues, highly pathogenic avian influenza (HPAI) has afflicted 423 flocks in Italy, resulting in depopulation of 18 million birds. The strain, H7N1, started as low pathogenic and mutated into a high pathogenic virus.

In 1924, according to Kradel, live bird markets in New York were the source of a disease subsequently identified as fowl plague (another name for HPAI). Today, about 40 percent of more than 83 live bird markets in New York and New Jersey test positive for A.I. About 93 percent of the serotype is the low-pathogenic H7N2, with 4 percent H3N2 and 3 percent other serotype.

Despite preventive efforts of all concerned, the rates of positive samples in markets have not decreased, said Kradel. The

virus can become highly pathogenic any time. The virus then could affect flocks, as it did in Italy, resulting in depopulations not seen in the U.S. since the 1983-1984 eradication of H5N2.

Bioterrorism — or incorporating diseases into health regimens as political or other form of threat — also concerns officials. As a result, a vaccination repository is being developed at a cost of \$50 million. Also, a reference diagnostic laboratory is being assembled in Louisiana to help quickly identify and manage such threats.

But what about plans to eradicate foodborne pathogens altogether?

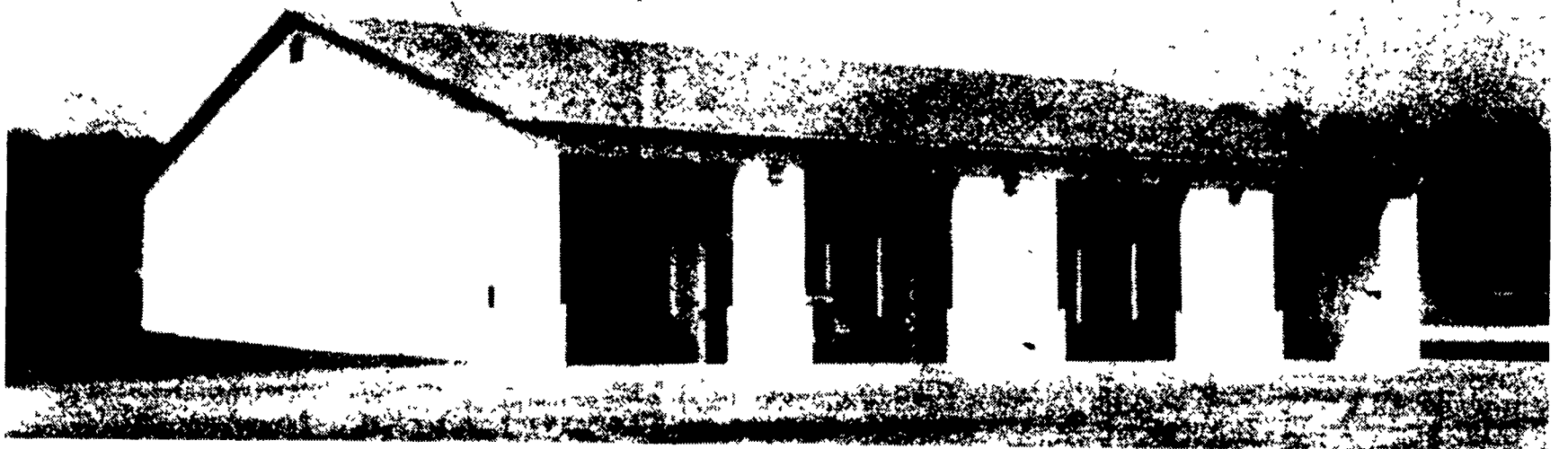
Rather than trying to eradicate all these bacteria, such as campylobacter, a better method would be to incorporate good management strategies. Because if the industry were to get rid of salmonella and campylobacter, "what could end up taking its place?" said Kradel. "It could be worse."

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