

Poultry Industry Must Find Ways To Control Campylobacter

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Lancaster Farming Staff
MANHEIM (Lancaster Co.) — One Lancaster County man remembers the time he improperly handled raw poultry. He recalls not using plastic gloves, not cleaning his hands, and then eating food contaminated by bacteria on his fingers.

And he remembers the pain of the severe intestinal infection that followed.

The man vows to do whatever is necessary to keep from getting the illness again. But his encounter with the infection is symptomatic of what experts call a problem that outweighs the current Salmonella uproar in the poultry industry.

This time, poultry producers, packagers, and food industry workers are confronting a bacteria called *Campylobacter jejuni*, present in virtually all poultry. The bacteria can cause a devastating flu-like illness in humans.

Importance of education

Steve Knabel, assistant professor of food science at Penn State, spoke to about 30 poultry industry representatives at a meeting on Monday. Knabel stressed the importance of educating the poultry producer, handler, and consumer about the nature and control of *Campylobacter*.

"*Campylobacter* is now recognized as a significant food-borne pathogen for the last 10 years," said Knabel. "And it's the most common bacteria cause of acute intestinal infection in humans, exceeding the rates of illness caused by *Salmonella* and *shigella*."

The organism was first identified in 1913. In 1957, researchers determined it caused acute enteritis (inflammation of the intestines) and high temperatures were responsible for causing infections in the intestinal tract of warm-blooded animals and man. In 1980, the World Health Organization warned that the bacteria may be a very common cause of food disease.

Knabel said about 81 million cases of food-borne disease are reported each year. "And a lot of people think it's just the flu, and they don't report it," he said.

Chickens tested positive

About 20 to 100 percent of chickens, according to a market survey, tested positive for *Campylobacter*. From 3 to 94 percent of the turkeys also tested positive for the bacteria. About 5 to 99 percent of the pork tested positive for it, and 3 to 5 percent of the beef. About 1 percent of eggs tested positive for *Campylobacter*.

"There's a good chance that you go to the supermarket and you grab some fresh poultry, you're going to have *Campylobacter* present," said the researcher.

Campylobacter is a Greek word meaning "rod-curved bacteria." The organism is microaerophilic — meaning it loves only a little oxygen (3 to 6 percent). Too much oxygen can kill it.

It also loves carbon dioxide — about 10 percent is sufficient — and thrives in a medium when the temperature is about 108 degrees Fahrenheit. (Chicken body temperature is about 107 degrees Fahrenheit, providing a near-perfect medium for growth.)

Carcass contaminated

Poultry can have the organism in them and show no signs of the

disease. But the surface of the carcass becomes contaminated during defeathering and evisceration.

The bacteria has a "corkscrew motility," allowing it to burrow into the mucosa, or the intestine wall. The bacteria can survive cold temperatures, the outside air, and some drying, according to Knabel. But it's sensitive to heat, freezing, salt, and oxygen.

The important thing for producers, packagers, and handlers to know, according to the researcher, is that the bacteria can be destroyed easily by pasteurization. It is more sensitive to heat than *Salmonella*. Proper cooking and pasteurizing techniques will kill the organism.

Some of the important things to know about the bacteria:

- In the intestinal tract of man, it can multiply from 10 million to 100 million organisms per gram, "which is very high numbers," said Knabel. If poultry have the bacteria, and shed fecal material, there can be high number of *Campylobacter* present. But the infective dose is low, said Knabel. Only 500 cells can infect a human, causing the illness.

- There are three observable species of *Campylobacter* — *Campylobacter jejuni* (90 percent and more of all gastrointestinal illness due to *Campylobacter* are this species); *Campylobacter coli* (3 to 5 percent of all gastrointestinal illness due to *Campylobacter*); and *Campylobacter laridis* (least common and similar to *Campylobacter jejuni*).

- If infected, humans experience a range of flu-like symptoms, including watery diarrhea, bloody stools, abdominal pains, and fever. Humans exhibit the symptoms from 2 to 5 days after ingesting the bacteria. The illness lasts up to 10 days. Hospitalization is often required. (But, according to Knabel, the disease is not deadly — only two deaths were reported between 1973 and 1987, he said.)

- The bacteria is spread by undercooking the product containing *Campylobacter* and through cross contamination (using equipment or hands contaminated by the bacteria). Water sources are easily contaminated.

- The organism can be controlled by using simple cleanliness. "Anything that allows the organism to get from the intestinal tract onto the surface of the carcass is a bad practice," said Knabel. It is important to keep the area clean and maintain a barrier between cooked and uncooked products.

Rid bacteria

To rid the bacteria, poultry products must have a 165 degree F. minimum temperature in the cold spot (typically the thickest part of the breast.)

"Do not use the same equipment to handle both the raw and the cooked products," said Knabel. Many infections occur during the summer at cookouts, when the raw and cooked product are handled with the same utensil.

"The biggest thing with this organism is education," he said. "Educate people on how to prevent cross-contamination and how to cook poultry properly so this isn't a problem. Most problems are going to occur either in the house or in food service operations."



Steve Knabel, assistant professor of food science at Penn State, spoke about the nature and control of *Campylobacter*.

The Superhuman Farmer

KRISTIN METZKER
Pennsylvania Dairy Princess
MARTINSBURG (Blair Co.)

— **HELP WANTED:** an independent business is in need of a person skilled in mechanics, plumbing, electrical work, agronomy, dairy science, veterinary medicine, artificial insemination, maternity and mid-wife work, calf raising, feed rations, sanitation, business management and accounting. Must be willing to work unlimited hours without holiday vacations or part-time pay on holidays or weekends. Must be reliable, patient, and resourceful. Pay varies due to uncontrollable factors such as weather.

You say you don't think such a person exists? Well, look again, because these qualities describe a dairy farmer. It has come to my attention that for the most part people neither understand or appreciate the type of work that goes into running a farm. An agriculture endeavor such as a dairy farm is a business, thus the operators of that farm: the farmer, a herdsman and any other hired help as well as the farmer's family, are all businessmen. But that isn't all, the farmer and his family must be skilled in all the requirements listed above, because each of them plays an active role in running the business. Just think of all the activities you performed today, it probably makes you tired just to think of them all. Often farmers themselves have to be reminded of how special their works truly are.

With all that is required of the dairymen today, it is no wonder that it takes a special kind of person with a unique personality. All the good management and hard work of the farmer can be destroyed by too much or not enough rain. The best cow in the barn can become ill and die from a mysterious disease that has nothing to do with the way she is treated at the farm. But, for the most part, the farmer never loses his spirit. He keeps getting up at four in the morning and working until seven in the evening. No, farmers aren't crazy, just special.

Agriculturalists are stewards of the land, perhaps today's best



Kristin Metzker

environmentalist. A farmer cares what happens to the land, because without its being in top condition it is useless to him. This analogy is a realistic way to explain to those outside of agriculture why a farmer would never harm his animals. "Imagine something that you own that is worth \$1,500. That is approximately what one cow is worth. Now imagine you have one hundred of these, totaling \$150,000. Now would you ever do anything to harm or destroy that possession? Of course not, and neither would the farmer do anything to harm or destroy his cows."

That story really made me think. It's true farmers have a lot financially invested in their animals, equipment and land. But I'm sure most farmers would agree that although investments and assets are high, income is not. Farmers are involved in agriculture because of a love. A love of the land, love of animals and a love of a way of life that created and shaped our country.

It is no wonder so many farmers hold God so dear in their lives. The life of the farmer and his family is considered by most to be a simpler, holier way of life. The country setting is serene and peaceful. There are no car horns, no sirens, only the calming call of

a cricket, the quiet moo of a cow and perhaps the grumbling engine of a tractor during the planting and harvesting seasons. The air is cleaner, the skyline more sky-like, the trees and woodlands still exist. Country and farm settings are great places to raise families, where kids can run and play freely and parents do not need to worry so much about drugs and gangs. Perhaps the location of a dairyman's occupation is one of the few benefits of his labors, because the country life is truly unmatched.

As Pennsylvania Dairy Princess I have seen a disappearance in the understanding of agriculture. I have heard the label "dumb farmer" for too long. I have watched my father do things that I am certain none of the non-agricultural adults I know could have dealt with. My job is to create an under-

standing and appreciation for the goodness of milk and dairy products. But the people that work to produce this product need to be understood, too.

Farmers, take pride in your work. Look at all the things you do each day and ask yourself if it isn't almost superhuman? Businessman, scientist, mechanic and family man, a farmer is all that and more. Our great dairy products are great today due to labors of farmers down through the years. I tell farmers to be proud of the milk you work to produce, because if you can't take pride in it, how can you expect today's picky consumers to appreciate its goodness? Maybe I should also remind you of this: Be proud of yourself, you've earned it!!!

Develops Pension Plan

SYRACUSE, N.Y. — Recognizing that farmers and their farm employees need the opportunity to participate in a pension plan, Dairylea Cooperative Inc. has developed a member pension plan that will become available during the first quarter of this year.

"Farmers, like everyone else, do retire. They need to take an active role in planning for their future on a financial level," said Rick Smith, chief executive officer of Dairylea Cooperative. "Our new pension plan offers a convenient way for our members to provide retirement income for themselves and their farm employees."

According to Smith, the pension plan allows participants to put away up to 15 percent of their annual earned income, to a maximum of \$30,000, on a pre-tax basis. Contributions to the pension plan can be made through deductions from members' milk checks. The pension funds are managed by a financial institution, but if participants want to, they can determine their individual investment strategies.

The pension plan is part of Dairylea's Farmer Flex, an innovative flexible benefits program

that allows farmer members and their employees to select benefits from a menu of options, and pay for those benefits on a pre-tax basis. Health, dental and life insurance costs, in addition to expenses for dependent child care, can be paid for without the penalties and costs of income taxes.

"We are pleased to add a pension plan to our Farmer Flex program," said Smith. "The basic reasons we developed Farmer Flex was to save our members money, and at the same time, help them provide a competitive benefits package in order to attract and retain good farm employees."

