

CAMPYLOBACTERIOSIS OUTBREAK

Failed Milk Pasteurization

What is Campylobacteriosis?

Campylobacteriosis is a disease caused by the bacteria, **Campylobacter jejuni**. Similar to Salmonellosis, the illness is characterized by diarrhea, abdominal pain, malaise, fever, nausea and vomiting. The illness is frequently over within two days and rarely lasts more than 10 days. However, Campylobacteriosis can lead to more serious/chronic illnesses in 2-10% of cases. In recent years, 2000-3000 cases are reported annually in British Columbia of which close to 10% are hospitalized for an average of 2.5 days.

Where Does it Come From?

Warm-blooded animals, such as cattle and poultry are the most common reservoirs. Infections occur on ingestion of contaminated food, unpasteurized milk or untreated water. Poor sanitary practices, such as not washing hands, may also lead to illness after handling infected pets, wild animals or birds. The period between infection and illness may be as long as 10 days.

What Happened in This Outbreak?

On August 2, 1992, doctors in Northamptonshire, England, reported an increased rate of diarrheal illness in the community. Within the week, 92 cases of diarrheal illness had been reported including 17 cases confirmed as having Campylobacteriosis. Preliminary enquiries by the public health inspectors lead them to suspect milk processed at a local dairy.

On August 5, 1993, samples of milk were collected from the dairy by public health inspectors and submitted for phosphatase and **E. coli** testing. Both failed to meet the standards. The dairy manager, upon hearing the results, informed the Health Department that there had been a problem with the pasteurizer but that it had been fixed.

On August 10, 1992, public health inspectors sampled again from a local store and found that the milk failed the phosphatase test. As the milk was not labelled, the expiry date and type of milk was not known.

The public health inspectors revisited the dairy on August 11, 1992, to collect more samples and again one of the samples of milk failed the phosphatase test. Maintenance engineers inspected the pasteurizer and identified several undisclosed faults which were immediately corrected. Samples of milk from the next days production passed the phosphatase test.

Note: The phosphatase test is an indicator of pasteurization efficiency. A failed test shows that there was insufficient time and/or temperature to kill pathogenic organisms.

How Many People Were Infected?

At least 110 cases of gastrointestinal illness resulted from this outbreak. Forty-one ill individuals were confirmed to have been infected by **Campylobacter jejuni**.

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What Can be Learned?

Several 'mistakes' are evident in the handling of this outbreak.

1. The initial notification and follow-up on the gastrointestinal illness was excellent. A probable source of infection was identified via the phosphatase test within 3 days of notification.
2. The dairy plant manager falsely informed the public health inspector that problems with the pasteurizer had been corrected.
3. The dairy plant manager took no remedial action to correct the pasteurizer deficiencies when first notified of the problem.

Points 2 and 3 place the manager in a difficult position should charges be laid. He did not do everything possible to ensure the safety of his dairy products.

4. The public health inspectors did not immediately initiate a public recall of the 'unpasteurized' milk implicated in the ongoing outbreak.
5. The public health inspectors did not verify that the pasteurizer had, in fact, been fixed or that the August 6th production met appropriate standards.

Points 4 and 5 place the Public Health Department in a difficult position should charges be laid. Adequate prevention steps were not instituted to stop an outbreak of gastrointestinal illness.

What Would Likely Happen in B.C.?

Upon notification of an outbreak, and the identification of a specific dairy as a possible source, the Dairy Plant Specialists would immediately initiate one or more of the following steps:

- sample products
- inspect pasteurizers and other equipment to identify contributing factors
- implement test - before - release programs
- shut the plant down until infractions were corrected
- initiate recall procedures.

How Does a Plant Protect Itself?

Implement a HACCP program and diligently monitor and record critical control points at a reasonable frequency. Daily checks are needed to verify that the critical HTST pasteurization variables of flow rate, temperature, and pressure are working on a daily basis.

For further information contact the Dairy Plant Specialist at Food Protection Services

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