

SALMONELLA: BEYOND RAW CHICKEN AND EGGS

Salmonella is a microscopic bacteria commonly found in the United States. Theobald Smith discovered Salmonella over 100 years ago and named the bacteria for his supervisor, Dr. Daniel Salmon. Since the microorganism was first discovered, more than 2,000 subtypes of Salmonella have been identified.

Most recently, a multistate outbreak of Salmonellosis associated with peanut butter and peanut butter-containing products spread across the United States. Between late November, 2008 and February 2009, over 500 persons from 43 states were infected. Over 100 individuals were hospitalized, and the infection was



Continued page 2

INCLUDING LOCAL PRODUCE IN YOUR MENU

There is a growing movement across the country for people eating out to choose restaurants that buy local products. Restaurants purchase food grown or produced locally and incorporate these items into their menu. Grocery stores and markets are also advertising their purchase of local

products. Your potential customers called "Locavores" identify themselves as people who pay attention to where their food comes from and commit to eating local food as much as possible.

How does this impact you as a food establishment? You may

already be buying local products or have made a commitment to buying local. You may choose to expand this effort and focus your marketing campaign on your local food sources. Ideally, you get a fresher product that your customer appreciates.

Continued page 3

COOL FOOD QUICKLY

What would you do in this situation?

Last winter your new beef stew lunch special was a favorite with your customers. Anticipating this year's sales to match last year's, you prepare the same amount. Unfortunately, the sluggish

economy results in fewer sales and only half of the beef stew you prepared was sold. You place 4 gallons of leftover stew in a 5-gallon plastic tub in the walk-in to cool for reheating tomorrow. It is now 3 hours since it was placed in the cooler. You check the temperature of the

beef stew and find it is 85° F. What would you do?

While you might be tempted to let the stew continue to cool, the best course of action would be to reheat it quickly to 165° F.

Continued page 4



SALMONELLA: BEYOND RAW CHICKEN AND EGGS *Continued from page 1*

suspected in the death of eight patients. At the writing of this article, all cases could be traced back to one brand of peanut butter produced at one Georgia facility.

Although the peanut butter was never sold directly to consumers, it was sold for institutional use and to companies as an ingredient in peanut butter-containing foods that were distributed throughout the United States and at least 23 other countries. The Food and Drug Administration has traced the peanut butter to at least 2,100 company accounts for use in a wide variety of products.

Salmonella lives in the feces of animals and people. It can easily be passed from animals or people to other animals or people. Most often the foods associated with Salmonella are foods of animal origin, such as beef, poultry, milk, or eggs, but any food can become contaminated. Salmonella can also be found in the feces of small pets, especially birds and reptiles, such as turtles, lizards, and snakes. It's especially important to wash hands with hot water and soap after playing with or petting animals, or after cleaning bird cages or feeders. Food handlers should always wash hands properly after using the bathroom, and immediately before preparing food.

Persons who ingest Salmonella bacteria develop the infection

Salmonellosis, and within 12 to 72 hours develop diarrhea, fever, and abdominal cramps, which may last from 4 to 7 days. Every year, there are approximately 40,000 cases of Salmonellosis reported in the United States. That figure doesn't include all of the cases that remain undiagnosed or reported.



Most people recover without medical treatment, but some become so ill they need to be hospitalized. People with severe diarrhea can usually restore hydration with oral fluids, but some may require intravenous fluids. If the infection spreads from the intestines to the blood stream or other body sites, immediate treatment with antibiotics may be necessary to prevent death. The people most at risk for developing a serious illness are infants and young children, the elderly, and anyone who has an impaired immune system.

Since the symptoms of Salmonellosis are so common, only a laboratory test can determine

the presence of Salmonella for certain. Usually the symptoms of the infection improve with the proper medication, but a small number of patients develop a secondary condition known as Reiter's syndrome, with painful joints, eye irritation, and painful urination. It can last for months or years, and can result in chronic arthritis.

Salmonella can be killed by thorough cooking, so it is especially important to never eat raw or undercooked eggs, poultry, or meat. Raw or unpasteurized milk or dairy products should not be consumed. Foods that contain raw eggs should never be served or eaten. The list includes raw cookie dough, homemade ice cream, homemade mayonnaise or Hollandaise sauce, Caesar and other homemade dressings, some frostings or meringues, and other desserts that contain raw eggs.

Salmonella is easily transferred through cross-contamination, so when preparing foods it is extremely important to keep uncooked meats separate from produce, cooked foods, and ready-to-eat foods. Cutting boards, counters, knives and other utensils should be thoroughly washed and sanitized between use. And, of course, it can't be said often enough: always wash hands with hot soap and water before handling food, and again between handling different food items.



INCLUDING LOCAL PRODUCE IN YOUR MENU *Continued from page 1*

There are two general ways you can work with local farmers. You can purchase directly from a farmer or at a local farmer's market. In this case, you are at the whim of what is picked that day or in season. Your menu plans depend on your daily purchases.

The second option involves more planning but may make for a more reliable supply. You, the owner or cook, work directly with the local farmer(s) to identify what you want, how much you want of a certain product

and when you want it. In effect, you direct what will be planted and harvested. In one example, a farm plants heirloom tomatoes for a local restaurant that features the tomatoes as one of its signature dishes.

Both parties benefit from this arrangement. The farmer knows there is a buyer for his product and the chef knows that he gets what he wants. The customer also benefits by eating a fresher product and contributing to the growth of local agriculture.

What is GAP?

GAP stands for Good Agricultural Practices. GAP is a food safety program for fruit and vegetable growers. It focuses on food safety during key stages of food production. Preventing contamination is essential to producing safe, wholesome fruits and vegetables. By using good agricultural practices, growers can reduce or minimize microbial contamination during site selection, growing, harvesting, processing, and transporting fresh produce. GAP helps keep fresh fruits and vegetables safe and reduces the risk of foodborne illness. In NH, GAP is voluntary and not required. Ask your local farmer if they are using GAP.

Resources for Locally Grown Produce

NH Department of Agriculture, Markets and Food: <http://agriculture.nh.gov/publications/index.htm>

Look for these links:

- NH Farm to Restaurant Dining Guide: <http://agriculture.nh.gov/publications/documents/2005FarmtoRestaurantWeb.pdf>
- NH Wholesale Agricultural Products: <http://agriculture.nh.gov/publications/documents/2006WholesaleGuideweb.pdf>
- NH Farm Stand Directory: <http://agriculture.nh.gov/publications/documents/2006FarmStandDirectoryWebVersion.pdf>
- NH Farmers' Market Directory: <http://agriculture.nh.gov/publications/documents/2008FMNPDDirectory.pdf>
- NH Specialty Food Products Directory: <http://agriculture.nh.gov/publications/documents/SpecialtyFoodWeb.pdf>

Other websites:

- NH Farmers' Market Association: <http://www.nhfma.org/>
- Seacoast Growers Association: <http://www.seacoastgrowers.org/>
- NH Farm to Restaurant Connection: <http://www.nhfarmtorestaurant.com/>
- NH Made: <http://www.nhmade.com/>
- NH Farms Network: <http://www.newhampshirefarms.net/>
- Northeast Organic Farming Association: www.nofan.org



COOL FOOD QUICKLY *Continued from page 1*

Then cool it to 70° F within two hours, and from 70° F to 41° F within 4 hours. The other alternative would be to throw it out since it was not cooled properly.

What is the proper way to cool food?

The New Hampshire state regulations (He-P 23 Sanitary Production and Distribution of Food, 2006) outline a two-step cooling process for potentially hazardous foods:

1. Cool food from 140° to 70° F within 2 hours and
2. From 70° to 41° F or below within 4 hours

While the total cooling time is 6 hours, the first step is most important for keeping food safe – cooling food to 70° F within 2 hours. The beef stew for the lunch special described above, was not cooled quickly enough to meet this requirement.

How could the beef stew be cooled more quickly?

There are several ways to cool food quickly. Planning ahead and the necessary equipment is all you need. The 5-gallon tub used for the beef stew in this

example was too large and too deep to allow the stew to cool quickly. Thick or dense food cools more slowly. Also, plastic tubs hold heat in rather than disperse it. Switch to shallow stainless steel pans for quicker cooling.

To cool food quickly:

- Put food in shallow pans before putting it in the cooler.
- Cut food into smaller or thinner amounts before putting it in the cooler.



- Place the food container in an ice water bath and stir frequently.

- Use rapid cooling equipment such as ice paddles.
- Be sure to use a clean and sanitized thermometer to make sure the food is cooling within these timeframes.

Why is cooling food properly so important?

For foodservice operations, the cooling step in the flow of food is critically important for keeping food safe. Pathogenic microbes grow best in the temperature danger zone of 41° to 140° F. However, pathogens reproduce most quickly when food is in the 70° to 125° F. temperature range.

How would you cool the beef stew in our example now to keep it safe?

If you said pour it into shallow, stainless steel pans that would be a good start. Next, place the pans in an ice-water bath and stir. Better yet, stir with an ice paddle. Place the pans in the cooler and test with a clean and sanitized thermometer in two hours to make sure the temperature is 70° F or less. In another 4 hours test the temperature again to make sure it is 41° or less.

UNH Cooperative Extension Offices

Belknap County 527-5475	Hillsborough County 641-6060
Carroll County 447-3834	Merrimack County 796-2151
Cheshire County 352-4550	Rockingham County 679-5616
Coos County 788-4961	Strafford County 749-4445
Grafton County 787-6944	Sullivan County 863-9200

