



July 2005

Food Facts For You!

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The Saga of Mad Cow Disease in the United States; Wisconsin Residents: Enjoying Fish as Part of a Healthy Diet; Safely Preserving Garden Produce; Hot Weather Tips and Tomato Canning Recipes; Food Safety Resources for Working with Schools; What's On Your Mind: food safety in the new Dietary Guidelines power point; Let's Preserve!

The Saga of Mad Cow Disease in the United States

In June 2005, the first ever case of Mad Cow Disease (bovine spongiform encephalopathy or BSE) was noted in a cow that was apparently born in the United States. The previous case in December 2003 in Washington State was in an animal that had been born and raised in Canada, but was on a farm in Washington State at the time of diagnosis. The more recent case which came to light in June 2005, apparently involved a native-born animal.

Controversy has surrounded the news of this positive test result. The animal, which had died in November 2004, was suspected of having BSE. At the time, the standard test used to evaluate whether an animal has the disease (the USDA's 'gold standard' test) yielded a negative result. At the same time, however, an 'experimental test' was conducted and this experimental test gave a positive result. Even through test results were contradictory, no part of the animal entered the human food chain.

In mid-June of this year, for reasons which are not clear, the USDA's Inspector General arranged for further tests on specimens of the same cow, and this second stage of testing generated another positive result. A sample was then sent to a pre-eminent laboratory in England. Several tests were conducted at the British laboratory, and all came up positive. Two other cattle that initially tested positive were also retested, but were not found to have BSE.

What are the implications of this positive test result? Perhaps the greatest impact of this finding will be on the U.S. export market. Numerous countries barred the importation of U.S. beef in 2003 when the first case of BSE was noted in an animal on a U.S. farm. Before the crisis, the U.S. beef export market amounted to roughly \$3 billion per year. These countries have been slow to re-open their markets to U.S. beef. [Note: The U.S. has also adhered to a policy to import beef only from BSE-free countries. As a result, the U.S. continues to restrict imports of beef from Canada which first noted a case of BSE in June 2003. Large beef processors in the Midwestern states have, for some time, been urging the U.S. government to reinstate the importation of Canadian beef. Lack of beef animals has led to plant closures and layoffs due to an insufficient beef supply. Australia

has stepped up its beef exports to meet the demand of countries that no longer accept U.S. beef.]

What does this positive test result say about testing U.S. cattle for BSE? Roughly 338,000 samples have been tested in the past year to monitor the presence of BSE in the U.S. cattle population, with one in every 90 cattle being tested. When the first case of BSE was detected in 2003, the U.S. was testing one in 1,700 animals. Critics argue that Japan's model of testing every cow or Europe's model of testing of one in every four animals, is more appropriate for this country where the beef export market is so important. However, testing more animals would be more expensive for processors and the increased testing is likely to uncover more positive samples which may unnecessarily heighten concern over the safety of U.S. beef.

How did the cow become BSE-positive? Testing suggests that the diseased animal caught BSE from food; the animal was born before the ruminant-to-ruminant feeding ban in 1994. Legislation has been slow in coming that will close loopholes which still exist in the ruminant feeding ban. The FDA still allows ruminant meat and bone meal to be fed to cattle as long as it has been offered to chickens first. This current issue has renewed interest in re-evaluating, and possibly strengthening, animal feeding regulations.

What, if any, are the food safety risks? Experts in risk analysis have concluded that BSE poses a very small risk to consumers. Consumer confidence in U.S. beef appears to have remained high, as borne out by a lack of heightened concern over this positive test result. In other countries, such as England, where BSE has been a factor for over 10 years and several hundred people have died from the human nv-CJD, concern has also diminished as animal testing has increased and processing methods have been adapted to minimize the risk of contamination of bovine muscle tissue.

Wisconsin Residents: Enjoying Fish as Part of a Healthy Diet

For many Wisconsin residents, fishing is an enjoyable past-time and a way to provide a family with lean, high quality protein. And the 2005 Dietary Guidelines for Americans recommend consuming fat from sources of polyunsaturated and monounsaturated fatty acids such as fish. There are, however, two contaminants of concern in fish caught in Wisconsin waters: **methyl mercury** (mercury) and **polychlorinated biphenyls** (PCBs).

In order to clarify and summarize recommendations for Wisconsin residents on consuming fish, I have prepared a fact sheet *Wisconsin Residents: Enjoying Fish as Part of a Healthy Diet*. That fact sheet can be found online: www.wisc.edu/foodsafety. Please feel free to use this resource in programming.

Safely Preserving Garden Produce

Hot weather tips. In parts of Wisconsin we are already experiencing hot, dry weather this summer. I asked **Karen Delahaut**, horticulture specialist, to comment on changes in plant tissue under these weather conditions and how that might affect the quality of garden produce for preserving. Karen's response:

The hot dry weather will cause drought stress which will make the vegetables smaller and in some cases, fewer of them. In particular, tomatoes and peppers experience blossom abortion when the temperature gets about 85°F. Vine crops revert to producing all male flowers when they are stressed and so no fruit will be produced.

Tomatoes should be more acid because the acidity would be concentrated because of less water. However you'll have more cat-facing on the blossom end of the tomatoes because it's too dry to get the calcium from the soil to the developing fruit. This is not harmful but unsightly and must be cut off before processing. Eggplant will be more bitter in dry, hot weather.

"Wet" vegetables like cucumbers and summer squash will be smaller because of the lack of water. In cucumbers the amount of cucurbitacin (the stuff that causes indigestion) will be higher. Onions and garlic will be more pungent because of the drought.

All vine crops love hot weather. Melons love hot, dry weather - they will be smaller than normal but sweeter because there's less water.

Winter squash and pumpkins will likely be smaller due to the drought but their storage life shouldn't be affected by what's happening now - it's more important to get the right conditions at harvest and curing.

Plants in the cabbage family - cabbage, broccoli, cauliflower, Brussels sprouts, and kohlrabi - will have more concentrated isothiocyanates (mustard oil) and will have a much stronger flavor because of the heat and drought. As a result they may be unpleasant to eat and if processed may have an off-flavor.

Leafy greens will tend to wilt in the garden if not watered regularly. They will also be more perishable when picked. This may cause breakdown sooner in storage and the development of bacterial rot in the refrigerator.

Thanks, Karen!

Tomato Canning Recipes. Tomatoes are a popular garden item for home canning. Because some of the more flavorful varieties of tomatoes tend to be fresh-eating varieties which may be low in solids and high in juice, we often prefer to can tomatoes without added water. The USDA Complete Guide to Home Canning has two recipes for canning tomatoes without added liquid; a raw-pack method and a hot-pack method. Both recipes are included here:

Whole or Halved Tomatoes (packed raw without added liquid)

Quantity: An average of 21 pounds is needed per canner load of 7 quarts; an average of 13 pounds is needed per canner load of 9 pints. A bushel weighs 53 pounds and yields 15 to 21 quarts-an average of 3 pounds per quart.

Procedure: Wash tomatoes. Dip in boiling water for 30 to 60 seconds or until skins split, then dip in cold water. Slip off skins and remove cores. Leave whole or halve. **Add acid to jars: 2 Tablespoons bottled lemon juice or ½ teaspoon citric acid per quart jar.** Add 1 teaspoon of salt per quart to the jars, if desired. Fill jars with raw tomatoes, leaving 1/2-inch headspace. Press tomatoes in the jars until spaces between them fill with juice. Leave 1/2-inch headspace. Adjust lids and process according to the recommendations in Table 1, Table 2, or Table 3, depending on the method of canning used.

Table 1. Recommended Process Time for Whole or Halved Tomatoes (packed raw without added liquid) in a Boiling-Water Canner					
		Process Time at Altitudes of			
Style of Pack	Jar Size	0 - 1,000 ft	1,001 - 3,000 ft	3,001 - 6,000 ft	Above 6,000 ft
Raw	Pints or Quarts	85 min	90	95	100

Table 2. Recommended Process Time for Whole or Halved Tomatoes (packed raw without added liquid) in a Weighted-Gauge Pressure Canner				
			Canner Gauge Pressure (PSI) at Altitudes of	
Style of Pack	Jar Size	Process Time	0 - 1,000 ft	Above 1,000 ft
Raw	Pints or Quarts	40 min	5 lb	10 lb
		25	10	15
		15	15	Not Recommended

Table 3. Recommended Process Time for Whole or Halved Tomatoes (packed raw without added liquid) in a Dial-Gauge Pressure Canner						
			Canner Gauge Pressure (PSI) at Altitudes of			
Style of Pack	Jar Size	Process Time	0 - 2,000 ft	2,001 - 4,000 ft	4,001 - 6,000 ft	6,001 - 8,000 ft
Raw	Pints or Quarts	40 min	6 lb	7 lb	8 lb	9 lb
		25	11	12	13	14

Due to the extended processing time in a water bath canner, this product would benefit from pressure canning. http://www.uga.edu/nchfp/how/can_03/tomato_without_liquid.html

Crushed Tomatoes (no added liquid)

A high-quality product, ideally suited for use in soups, stews, and casseroles. This recipe is similar to that formerly referred to as "Quartered Tomatoes."

Quantity: An average of 22 pounds is needed per canner load of 7 quarts; an average of 14 fresh pounds is needed per canner load of 9 pints. A bushel weighs 53 pounds and yields 17 to 20 quarts of crushed tomatoes-an average of 2¾ pounds per quart.

Procedure: Wash tomatoes and dip in boiling water for 30 to 60 seconds or until skins split. Then dip in cold water slip off skins, and remove cores. Trim off any bruised or discolored portions and quarter. Heat one-sixth of the quarters quickly in a large pot, crushing them with a wooden mallet or spoon as they are added to the pot. This will

exude juice. Continue heating the tomatoes, stirring to prevent burning. Once the tomatoes are boiling, gradually add remaining quartered tomatoes, stirring constantly. These remaining tomatoes do not need to be crushed. They will soften with heating and stirring. Continue until all tomatoes are added. Then boil gently 5 minutes. **Add acid to jars: 2 Tablespoons bottled lemon juice or ½ teaspoon citric acid per quart jar.** Add 1 teaspoon of salt per quart to the jars, if desired. Fill jars immediately with hot tomatoes, leaving ½-inch headspace. Adjust lids and process. Recommended process times are given in [Table 1](#), [Table 2](#), and [Table 3](#).

Table 1. Recommended process time for **Crushed Tomatoes** in a boiling-water canner.

		Process Time at Altitudes of			
Style of Pack	Jar Size	0 - 1,000 ft	1,001 - 3,000 ft	3,001 - 6,000 ft	Above 6,000 ft
Hot	Pints	35 min	40	45	50
	Quarts	45	50	55	60

Table 2. Recommended process time for **Crushed Tomatoes** in a weighted-gauge pressure canner.

			Canner Gauge Pressure (PSI) at Altitudes	
Style of Pack	Jar Size	Process Time	0 - 1,000 ft	Above 1,000 ft
Hot	Pints or Quarts	20 min	5 lb	10 lb
		15	10	15
		10	15	Not Recommended

Table 3. Recommended process time for **Crushed Tomatoes** in a dial-gauge pressure canner

			Canner Gauge Pressure (PSI) at Altitudes of			
Style of Pack	Jar Size	Process Time	0 - 2,000 ft	2,001 - 4,000 ft	4,001 - 6,000 ft	6,001 - 8,000 ft
Hot	Pints or Quarts	20 min	6 lb	7 lb	8 lb	9 lb
		15	11	12	13	14

Food Safety Resources for Working with Schools

There are two resources that may be of interest if you work with schools, one for working with the schools themselves, the other a series of food safety lessons for middle school students. Read on for more information.

The Food-Safe Schools Action Guide Kit - Because one case of foodborne illness is one too many. Are you interested in ensuring food safety in schools? Then, please take a look at the new school tool to do just that - The Food-Safe Schools Action Guide

Kit (FSSAG) This resource was developed by the National Coalition for Food-Safe Schools to help schools ensure food safety for all.

The Food-Safe Schools Action Guide Kit can help schools identify gaps in food safety and develop an action plan for becoming food-safe. It includes individual critical recommendations on what key school staff and community members can do to prevent foodborne illness. Kids First of Rhode Island and the Rhode Island Department of Education will print 1500 copies due to arrive on June 17th, 2005 using CDC funding. All Food-Safe Schools Action Guide contents, along with extensive partner resources, will be available on-line at no charge: www.FoodSafeSchools.org - the one-stop resource for preventing foodborne illness outbreaks.

Food Safety Lessons for Middle School Students from Penn State. Food safety from farm to table is the theme of a set of food safety lessons now available through Penn State University's Food Safety Web site. The 19 lessons reflect the sections of a Newspapers in Education (NIE) supplement of the same name. The lessons are organized into five units: an introduction to microbiology and food safety on the farm, in manufacturing, in grocery and retail units, and at home. Lessons are suitable for middle school students in consumer science classes but can be adapted to other settings. <http://foodsafety.psu.edu/toolkit.html> Contact Lynne Brown for information (f9a@psu.edu)

What's On Your Mind?

Alice Henneman (University of Nebraska) has put together a powerpoint presentation to accompany the new Dietary Guidelines: **"Foodborne Illness Can Cause More than a Stomach Ache"** <http://lancaster.unl.edu/food/myramid-foodsafety.htm> Available for download are the slide show, a printer-friendly copy of the slides, and the power point presentation.

Let's Preserve! is the name of the new display available from the UWEX Media Collection. This display was developed for use at Farm Technology Days but would be appropriate for farm markets, country fairs, or meetings. Please contact the Media Collection to schedule this display for your next event: <http://www.uwex.edu/ces/media/>

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