

Food: You know it's spoiled when.....

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About ten years ago, a posting on the Internet created a few laughs and snickers within the Food Science community. An anonymous source had posted a "Food Spoilage Table" containing insightful clues for determining if various foods had spoiled (it's still there, if you care to take a look). This sage advice included hints like "A carrot that you can tie a clove hitch in is not fresh". Of course, you don't need to be a rocket scientist to know that being able to tie one of the six basic Boy Scout knots in a carrot is a major warning sign that something is amiss. Other such observations as "If you can take chip dip out of its container and bounce it on the floor, it has gone bad"; and "Bibb lettuce is spoiled when you can't get it off the bottom of the vegetable crisper without Comet" serve to drive home this rather humorous view of a very serious matter.

Many people, including me, feel that throwing away food is wasteful and somewhat irresponsible, especially in light of the hunger that we see in the world today. On this basis, it seems only natural that we would think twice before discarding the pound of hamburger that has been lurking in the bottom of our freezer and is about to celebrate its second or third anniversary of residence there. When it is finally discovered (usually during a rare defrosting operation), the question invariably arises, "Can I still use this hamburger?" Even though the meat has been severely freezer burned or has ice crystals the size of the Hope Diamond all over the inside of the plastic wrap, there is still a reluctance to part with it. These ice crystals are caused by moisture coming out of the meat and collecting on the inside of the wrapping and are an indication that the meat is well beyond its prime.

When people call to ask whether or not a certain food (especially meat) is still okay to use, I tend to pose a few questions of my own. If they say that the meat has been in the freezer all this time, I ask them if they are absolutely sure that it has been frozen during the entire period. During even a brief thawing period, potentially nasty microorganisms may have proliferated before being rendered dormant once again by the cold temperatures when the meat was re-frozen. I also ask them about the condition of the packaging and the appearance of the meat itself. Usually if it looks unpleasant, it's easier to talk the person into getting rid of it. However, the three really important questions are:

"How much would it cost to throw the meat away and buy a fresh supply?"

"How much is your health worth to you?"

"Is risking a potential case of food poisoning for those eating it worth the few dollars it would take to replace the meat?"

My approach for any situation involving food safety, as I have said many times before, is, "When in doubt, throw it out."

Despite a number of food contamination cases that have received national attention in recent years, and a series of food recalls, we need to keep things in perspective. Canada still has one of the safest food supplies in the world. You only need to travel to developing countries, which lack the sophisticated food handling chain that we take for granted, to see just how fortunate we are.

In spite of efforts to maintain a safe food supply, there are many things that can go wrong, especially in the home. Improper storage after opening a container is one of the major problems. Products like mayonnaise are a good example. Sealed jars of mayonnaise are seen safely displayed in neat rows on the grocery store shelves without the benefit of refrigeration. This is due to the fact that they are hermetically or aseptically packaged under such highly sanitary conditions that the product has been rendered commercially sterile at the time of packaging. Once the seal is broken and the lid removed, the product can no longer be considered as being commercially sterile. As such, it must be kept refrigerated and cannot be left at room temperatures for any prolonged period of time. The same is true for anything that uses mayonnaise as an ingredient. It too must be kept refrigerated and not allowed to stand in warm surroundings prior to being eaten. The "Food Spoilage Table" says that if you become violently ill after eating it, the mayonnaise is spoiled. However, this is like closing the barn door after the horses have escaped - by the time the symptoms of illness arise, the damage has already been done!

Instructions on any label stating "Refrigerate after opening", are not just a suggestion. They are there for a very good reason and should be followed.

We all know the unpleasantness of "food poisoning" or more appropriately "food-borne illnesses". We are also familiar with the ravages of E. coli O157:H7, salmonella, listeria, and other nasty food-borne microorganisms. However, have you ever stopped to think of the impact they have on the national economy? We certainly cannot put a value on human life and chronic suffering - these should never be trivialized. However, we can take a look at absenteeism from work and visits to doctors or hospitals that result from food poisoning cases. An article appearing in Canadian newspapers in May 2008 stated that up to 13 million Canadians, or more than 40% of our population, would suffer from food-borne illnesses that year. The overall cost in lost productivity and medical expenses was estimated at a staggering \$1.3 billion!

Many incidents of food-borne diseases could be avoided by following a few simple precautions. Hand-washing with soap and warm water before and after preparing or handling food has to rank at the top of any list. You also need to be sure to store foods properly (e.g., refrigerate or freeze them as required); to thoroughly cook meats to kill harmful microorganisms; and to ensure that all surfaces coming in contact with your food are as clean as possible. Don't forget to wipe down these surfaces after preparing the food on them as well. Any food not consumed during a meal should be promptly returned to the refrigerator. If allowed to sit out at room temperature for more than an hour or so, it should be discarded in the interest of food safety. Complete lists of food safety instructions are available on-line.

The overall message is simple and clear. Take a critical view of how you handle your

food. Following proper measures to ensure its safety and wholesomeness will go a long way in preventing food-borne illnesses, thereby allowing you to enjoy the bounty of foods available to us.



Canadians are fortunate to have a supply of fresh wholesome foods readily available to them.