



Lewis County
Master Food Preservers
WASHINGTON STATE UNIVERSITY
EXTENSION

Food Safety and Preservation



Lewis County
17 SW Cascade Ave.
Chehalis, WA 98532

Julie Pirtle 360-740-1212
<https://extension.wsu.edu/lewis/mfpmaterials/>

What are food molds?

Molds are microscopic fungi that live on plant or animal matter. Mold grows from tiny spores that float around in the air. When some of these spores fall onto a piece of damp food, they grow into mold.

How Mold Grows

Mold is a type of fungus. In many molds, the body consists of “root” threads that invade the food it lives on, a stalk that rises above the food and spores that form at the ends of the stalks. The spores give the mold the color you see. When airborne, the spores spread the mold from place to place like dandelion seed.

Once a good shows heavy mold growth, you can bet that the “root” threads have invaded it deeply. In dangerous molds, the mycotoxins are often contained in and around these threads. In some cases, the toxins may have spread throughout the food.

No one knows how many species of fungi exist, but estimates range from tens of thousands to perhaps 300,000 or more. Most are filamentous (thread like) organisms and the production of spores is characteristic of fungi in general. These spores can be transported by air, water, or insects.



Mold on Bread

Mold on Tomatoes

Are Molds Dangerous?

Yes, some molds cause allergic reactions and respiratory problems. And a few molds, in the right conditions, produce mycotoxins, poisonous substances that can make you sick.

What Are Mycotoxins?

Mycotoxins are poisonous substances produced by certain molds found primarily in grain and nut crops, but are

also known to be on celery, grape juice, apples, and other produce. There are many of them and scientists are continually discovering new ones. The Food and Agriculture Organization (FAO) of the United Nations estimates that 25% of the world's food crops are affected by mycotoxins, of which the most notorious are aflatoxins.

What is Aflatoxin?

Aflatoxin is a cancer-causing poison produced by certain fungi in or on foods and feeds, especially in field corn and peanuts. They are probably the best known and most intensively researched mycotoxins in the world. Aflatoxins have been associated with various diseases, such as aflatoxicosis in livestock, domestic animals, and humans throughout the world. Many countries try to limit exposure to aflatoxin by regulating and monitoring its presence on commodities intended for use as food and feed. The prevention of aflatoxin is one of the most challenging toxicology issues of present time.

Cheese Molds:

An exception is mold on hard cheese, as some cheeses are eaten only after they become moldy! Blue cheese gets its flavor from the veins of blue-green mold in it. When a blue cheese is formed into a wheel, holes are poked through it with thin skewers. Air gets into these holes, and a very special kind of mold grows there as the cheese ripens. If mold develops, cut away one (1) inch on each side of the cheese (throw away) and use the remainder as soon as possible.

According to the Mayo Clinic, some moldy cheeses are safe to eat after the mold has been sliced off, while others are toxic.

Hard and semisoft cheese, such as parmesan, Swiss, romano and cheddar, you can cut away the moldy part and eat the rest of the cheese. Cut off at least 1-inch around and below the moldy spot.

With soft cheeses, such as brie, chevre (goat cheese), blue cheese, and ricotta, the mold that grows on these cheeses cannot be safely removed so they should be discarded. One reason is that the molds can more easily penetrate into the heart of soft cheeses than they can into harder cheeses. This causes spoilage from within that cannot be scraped away. The same goes for any cheese that has been shredded, crumbled or sliced. If mold is found on soft cheese (i.e. cottage cheese, cream cheese) the entire package should be discarded. Mold on soft cheeses are toxic.

Don't Unknowingly buy Moldy Food

Quick shopping sometimes means you don't examine food well before you buy it. But it's important to check food in glass jars and fresh fruits and vegetables for mold growth. Check the stem areas on fresh produce. Notify the store manager about mold on any foods.

Fresh meat and poultry are usually mold-free, but cured meats and smoked turkey may not be. Examine them carefully. Exceptions? Some salamis -San Francisco and Italian types - have characteristic thin, white mold coating. They shouldn't show any other mold.

Why Can Mold Grow in the Refrigerator?

While most molds prefer warmer temperatures, they can grow at refrigerator temperatures, too. Molds also tolerate salt and sugar better than most other food invaders. Therefore, molds can grow in refrigerated jams and jelly and on cured, salty meats (ham, bacon, salami, and bologna).

Cleanliness is vital in controlling mold, because mold spores from contaminated food can build up in your refrigerator, dishcloths and other cleaning utensils.

- Clean the refrigerator or pantry at the spot where the food was stored. Check nearby items the moldy food might have touched. Mold spreads quickly in fruits and vegetables.
- Clean the inside of the refrigerator every few months with 1 tablespoon of baking soda dissolved in a quart of water. Rinse with clear water and dry. Scrub visible mold (usually black) on rubber casings using 3 teaspoons of bleach in a quart of water.
- Keep dishcloths, towels, sponges and mops clean and fresh. A musty smell means they're spreading mold around. Discard items you can't clean or launder.
- Keep the humidity level in the house as low as practical – below 40 percent, if possible.

How Can You Protect Food from Mold?

- When serving food, keep it covered to prevent exposure to mold spores in the air. Use plastic wrap to cover foods you want to stay moist (fresh or cut fruits and vegetables, and green and mixed salads).
- Empty opened cans of perishable foods into clean storage containers and refrigerate them promptly.
- Don't leave any perishables out of the refrigerator more than 2 hours.
- Use leftovers within 3 to 4 days so mold doesn't have a chance to grow.

How Should You Handle Food with Mold On It?

Buying small amounts and using food quickly can help prevent mold growth. But when you see moldy food:

- Don't sniff the moldy item. This can cause respiratory trouble.
- If food is covered with mold, discard it. Put it into a small paper bag or wrap it in plastic and dispose in a covered trash can that children and animals can't get into.
- Clean the refrigerator or pantry at the spot where the food was stored.
- Check nearby items the moldy food might have touched. Mold spreads quickly in fruits and vegetables.

| Molds on Food | | |
|---|------------------------------|---|
| FOOD | HANDLING | REASON |
| Luncheon meats, bacon, or hot dogs | Discard | Foods with high moisture content can be contaminated below the surface. Moldy foods may also have bacteria growing along with the mold. |
| Hard salami and dry-cured country hams | Use. Scrub mold off surface. | It is normal for these shelf-stable products to have surface mold. |
| Cooked leftover meat and poultry | Discard | Foods with high moisture content can be contaminated below the surface. Moldy foods may also have bacteria growing along with the mold. |
| Cooked casseroles | Discard | Foods with high moisture content can be contaminated below the surface. Moldy foods may also have bacteria growing along with the mold. |
| Cooked grain and pasta | Discard | Foods with high moisture content can be contaminated below the surface. Moldy foods may also have bacteria growing along with the mold. |

| | | |
|---|---|---|
| Hard cheese (not cheese where mold is part of the processing) | Use. Cut off at least 1 inch around and below the mold spot (keep the knife out of the mold itself so it will not cross-contaminate other parts of the cheese). After trimming off the mold, re-cover the cheese in fresh wrap. | Mold generally cannot penetrate deep into the product. |
| Cheese made with mold (such as Roquefort, blue, Gorgonzola, Stilton, Brie, Camembert) | Discard soft cheeses such as Brie and Camembert if they contain molds that are not a part of the manufacturing process. If surface mold is on hard cheeses such as Gorgonzola and Stilton, cut off mold at least 1 inch around and below the mold spot and handle like hard cheese (above). | Molds that are not a part of the manufacturing process can be dangerous. |
| Soft cheese (such as cottage, cream cheese, Neufchatel, chevre, Bel Paese, etc.) Crumbled, shredded, and sliced cheeses (all types) | Discard | Foods with high moisture content can be contaminated below the surface. Shredded, sliced, or crumbled cheese can be contaminated by the cutting instrument. Moldy soft cheese can also have bacteria growing along with the mold. |
| Yogurt and sour cream | Discard | Foods with high moisture content can be contaminated below the surface. Moldy foods may also have bacteria growing along with the mold. |
| Jams and jellies | Discard | The mold could be producing a mycotoxin. Microbiologists recommend against scooping out the mold and using the remaining condiment. |
| Fruits and vegetables, firm (such as cabbage, bell peppers, carrots, etc.) | Use. Cut off at least 1 inch around and below the mold spot (keep the knife out of the mold itself so it will not cross-contaminate other parts of the produce). | Small mold spots can be cut off fruits and vegetables with low moisture content. It's difficult for mold to penetrate dense foods. |
| Fruits and vegetables, soft (such as cucumbers, peaches, tomatoes, etc.) | Discard | Fruits and vegetables with high moisture content can be contaminated below the surface. |
| Bread and baked goods | Discard | Porous foods can be contaminated below the surface. |
| Peanut butter, legumes and nuts | Discard | Foods processed without preservatives are at high risk for mold. |

WSU Extension programs and employment are available to all without discrimination. Evidence of noncompliance may be reported through your local WSU Extension office.