

# Fruitcake – will it last forever?

December 8 2014, by Matt Shipman

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Credit: Jonathunder, via Wikimedia Commons

I've always thought that, in the event of a nuclear apocalypse, the Earth will be populated solely by cockroaches, those Styrofoam hamburger containers that fast-food joints used in the 1980s, and fruitcakes. Since this is the season for loved ones to inflict fruitcakes on one another, I decided to get to the bottom of this mystery: will fruitcakes really last forever?

As it turns out, the answer depends on how you define "fruitcake."

Most fruitcake recipes include dried nuts, dried fruit, and "candied" fruit

or peel (meaning the fruit has been both dried and preserved in sugar). [Note: not all fruitcakes are made this way, see the safety note below.]

The U.S. Department of Agriculture says that fruitcake will last two to three months in the refrigerator without spoiling, and will maintain its quality if stored up to a year in the freezer. But it's a federal agency's job to think of the worst-case scenario. Could fruitcakes really last longer?

"All of these dried and candied ingredients have what we call 'low water activity,' meaning they have very little moisture available," says Ben Chapman, a food safety researcher at NC State. "Low water activity is important because many microorganisms, including foodborne illness-causing bacteria, need moisture in order to reproduce.

"In practical terms, this makes most fruitcakes extremely shelf stable, so they would be safe to eat for a long time – a really long time," Chapman says. "But it might taste pretty bad."

That's because a lot of things can significantly affect the quality of the fruitcake.

For example, mold could grow on the surface of a fruitcake, or yeast could cause some of the sugars in the fruitcake to ferment.

"But some people wrap their fruitcakes in linen that's been soaked in rum or other spirits to reduce the chance of mold or yeast problems," Chapman says.

"However, rancidity may still be an issue. Fruitcakes contain a variety of proteins, from eggs to butter to nuts – even the fruit items. And when proteins are exposed to air, they can become oxidized, which can create rancid flavors and odors," Chapman explains.

So, while you may be able to save that fruitcake forever, you should probably eat it now.

**Safety Note:** If a fruitcake has a significant amount of moisture (e.g., if it was made with fresh fruit) it is more likely to spoil or to give pathogens enough moisture to reproduce. In other words, it could make you sick if not kept refrigerated and eaten relatively quickly.

Provided by North Carolina State University

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