



## Is My Sealed Jar Safe?

Safety of a canned good depends upon more than a lid pinging as it cools. Proper canning methods destroy micro-organisms that cause food spoilage and illness and control the activity of enzymes.

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*“My jars all sealed; so, they must be safe.”*

*“If it isn’t safe, wouldn’t it look bad—or wouldn’t it smell bad—or wouldn’t it taste bad?”*

*“I must be doing things right because no one has ever gotten sick.”*

*“Grandma did it that way and she never killed anyone.”*

Extension Educators have heard all the above comments and/or some version of those

when people find that scientifically recommended methods differ from what they learned from parents, grandmother, friends, or the internet. So, let’s look at each statement.

## Why is a sealed lid not a sign that the contents inside are safe?

Home food preservations methods are based upon destroying microorganisms and enzymes. These can be molds, yeasts, and bacteria that are destroyed by heat from cooking and processing. The most dangerous of the organisms are spores produced by bacteria—especially spores of *Clostridium botulinum*. Spores are tiny seed like units that are produced by living organisms and are inactive until conditions become suitable for

reproduction. *C. botulinum* spores become extremely dangerous when they germinate because they produce a [deadly toxin](#) .

## If it looks, smells, feels, and tastes ok it must be safe, right?

Indeed, our sensory system will alert us to some types of spoilage. See [The Spoilers](#) article for more information.

- We can **see** some molds but not all. If bubbles are present, it's a good indication that yeasts have caused fermentation. If the product has turned dark or soft, enzymes have been active or there was too much air present that caused oxidation. **Note:** molds may lower the acidity of the product in the jar and allow *C. botulinum* spores to germinate.
- If something **smells** bad, bacterial or yeast activity would be suspected. Flat-sour spoilage, identified by contents smelling sour like vinegar and the food being tasteless, is caused by thermophilic bacteria that survive high temperatures and the product not being cooled in a timely manner. Never allow canned goods to sit in a canner overnight and do allow a few inches of space between jars on the counter for air to circulate. Also, never cover jars with a towel or anything else that will hold heat in when they should be cooling.
- Never **taste** food you suspect is spoiled. If a canned product has an off-taste, it is likely the work of one of the spoilage organisms. For example, yeasts often produce a sour flavor. Not all spoiled food will taste bad.
- The **most dangerous** of spoilage organism, *C. botulinum*, **does not have a taste, you cannot see it, and it does not have an odor**. Pressure canning recommendations for low acid meats and vegetables are based on destroying the spores produced by this bacteria before they have a chance of germinating and producing the deadly toxin that causes botulism food poisoning. Never taste a low acid food that has been improperly canned.

**Follow research-tested canning recipes like Penn State Extension's [Let's Preserve](#) series.**

**As always, when in doubt, throw it out!**