

Canned Green Beans Require Temperatures Only Reached with Pressure

By Janet Hackert, Nutrition Specialist

Canning produce safely requires making it safe in the first place, then keeping it safe by sealing the jar. Low acid foods like green beans and other vegetables require a temperature that is only attained by adding pressure. So the only recommended safe way to can vegetables is with a pressure canner.

The health concern with home canned produce is botulism. This silent enemy cannot be seen, smelled or tasted in canned products. But when it is present, it causes a very deadly type of food poisoning that shows up within 72 hours of eating the contaminated food. Symptoms of botulism range from upset stomach (sometimes mistaken as the flu) to paralysis or even death.

Clostridium botulinum is the microorganism that causes botulism. It is a spore former, which means that under certain conditions the microorganism forms a protective structure called a spore. This spore then germinates and forms a toxin in the food stored at room temperature. It is this toxin that causes the food poisoning.

But this whole process can be prevented by pressure canning. To destroy the botulism and its spores in low acid foods, the foods must be heated through and through to 240 degrees Fahrenheit. Water boils at 212°F at sea level. So the only way to reach the temperature needed to make vegetables safe is by using pressure. The pressure in the canner increases the temperature of the water and steam inside the canner, thus making it possible to increase the temperature of the food to the safe level. No amount of boiling a food at 212°F will make that food hot enough to make it safe.

The US Department of Agriculture research labs have carefully studied what it takes to make all the food in a jar reach the necessary temperature. Their recommendations include very precise directions for pressure and time of processing. They also include the type of food, the form of the food and the size of the jar.

For more information on preserving food safely, you can contact me at 660-425-6434, or contact your local University of Missouri Extension office or go on-line for the publication called [How to Can Vegetables](#), GH 1454.

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