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## Cooking Dry Beans Safely



Slow cookers are convenient for cooking a variety of foods. But, when cooking certain dry beans in a slow cooker, it could be toxic.

The problem isn't bacteria, but a compound called "phytohaemagglutinin," also called PHA, or kidney bean lectin. Lectin is a type of protein that performs many functions in both plants and animals. But some types of lectin, including this one, can be toxic at high levels.

If this lectin isn't destroyed by thorough cooking, you'll be sorry. According to the U.S. Food and Drug Administration's "Bad Bug Book," eating as few as four or five improperly cooked red kidney beans can cause severe vomiting within a few hours, followed by diarrhea.

Although some cases have required hospitalization, people normally feel better within three to four hours after symptoms start. That's one reason why there aren't many recorded cases of this particular foodborne illness in the U.S.: People usually begin to get over the illness just about the time they might think of contacting their doctor.

Other types of beans also contain PHA, but it's much more concentrated in red kidney beans. For example, the unit of measurement for the toxin is called "hau," for "hemagglutinating unit." Raw red kidney beans have anywhere from 20,000 to 70,000 hau, but that drops to 200 to 400 hau when the beans are fully cooked — not enough to be a problem. White kidney beans, or cannellini beans, contain only about one-third of the toxin as red kidney beans. Broad beans, or fava beans, contain just 5 to 10 percent of what's in red kidney beans.

The FDA recommends these steps for preparing dry red kidney beans:

- Soak beans for at least five hours in water. Change the water periodically, but it's not necessary for safety.
- Drain the beans from the final soaking water.
- Boil beans in fresh water for at least 30 minutes. Note: The toxin is destroyed when boiled at 212 degrees F for 10 minutes, but scientists recommend 30 minutes to be certain the beans reach the proper temperature for the amount of time necessary. **Don't use a slow cooker: It likely won't get hot enough.**

[www.fda.gov/downloads/food/foodsafety/foodborneillness/foodborneillnessfoodbornepathogensnaturaltoxins/badbugbook/ucm297627.pdf](http://www.fda.gov/downloads/food/foodsafety/foodborneillness/foodborneillnessfoodbornepathogensnaturaltoxins/badbugbook/ucm297627.pdf)

## Adding Lavender to Food

Lavender is often used in soaps, perfumes and in home décor. But have you tried it in food?

English lavender is for culinary use. French lavender is used in cosmetics. While purple is the common color of lavender, varieties range from vivid purple to almost pink.

Lavender blooms are

used for cooking and baking. The blooms should be crushed to release the fragrant oil. Here are some tips:

- Lavender is an anti-microbial and should not be used in yeast bread.
- Fat brings out the lavender flavor.
- When infusing liq-

uids, use fresh or dried lavender. Do not boil lavender in liquid, it will become bitter. Squeeze the lavender to get more flavor.

- Lavender has a strong flavor; a little goes a long way!

Sources: <https://nancyslavenderplace.com/>

<http://bit.ly/2xArv8Z>



***Lavendula angustifolia***  
Pair with lemon, blueberry, vanilla, thyme, or chocolate



## Cooking Class and Baking Class for Kids

Need new ideas to teach cooking and baking to kids? Kids book author, Deanna Cook, has some fun cookbooks that can help!

The cookbooks are tar-

geted to various age groups. They have leader planning tips, promotional materials, lesson plans, easy and fun recipes, gift tags, stickers, bake sale signs, and many other fun ideas.

Learn more about these books and the author at [www.deannafcook.com](http://www.deannafcook.com).

## Myths about the Alkaline Diet

Can food change your blood pH measurement? Proponents of the alkaline diet claim that eating alkaline foods can prevent many ailments, including cancer, by changing your blood pH, or acid content.

This fad diet eliminates dairy, eggs, meats and cheeses from the diet. It allows fruits, vegetables, nuts, and plant-based protein foods like beans and soy products.

The body does its own work to regulate blood pH. What foods you eat will not change how the body does this work. While foods can change urine pH, food will not change blood pH or cause negative health issues.

The best diet is eating from all food groups and in moderation.



[www.foodinsight.org/alkaline-diet-science-myth](http://www.foodinsight.org/alkaline-diet-science-myth)

## Freezing Yeast Dough



Other tips for prepping dough ahead for later use can be found at <http://redstaryeast.com/yeast-baking-lessons/postpone-baking/>

To save time during the holidays, or any time of year, prepare yeast dough ahead of time and freeze into dough balls for rolls to bake later. The trick is using a dough with extra yeast because slow freezing can damage yeast.

According to Fleischmann's Yeast, it is best to use dough recipes developed for freezing. These recipes are high in yeast and sugar and low in salt. It is recommended to use bread flour to help maintain bread structure. After preparing and kneading the dough, shape into rolls or flatten into a disk and wrap airtight. The dough can be frozen up to four weeks. When ready to use, thaw at room temperature or slowly in the refrigerator. Once thawed, shape, let rise, and bake as directed.

Some examples of freezer dough recipes include:

<http://www.breadworld.com/recipes/Freezer-Pizza-Dough>

<http://www.breadworld.com/recipes/Master-Bread-Dough>



## Tips & Tricks for Dental Health

Simply brushing your teeth each day helps improve your overall health. But there are many other advantages to keeping your oral health in tip-top shape.

[Oral Health Kansas](#) has many tips & tricks to help

educate consumers. They have many fact sheets, in English and Spanish, to address oral health issues for all age groups.

Learn more about these resources at [www.oralhealthkansas.org/Tipstricks.html](http://www.oralhealthkansas.org/Tipstricks.html).

They also have a free sugary drink display available for a one month checkout period. To reserve a display, see [www.oralhealthkansas.org/SugaryDrink.html](http://www.oralhealthkansas.org/SugaryDrink.html)

**What's your Oral Health Snapshot in your county? Find out at**  
[www.oralhealthkansas.org/2013KansasOralHealthSnapshot.html](http://www.oralhealthkansas.org/2013KansasOralHealthSnapshot.html)



Photo: USDA/ARS

## Low Oxalate Spinach

Spinach is one of many foods that contains oxalic acid, or oxalate. This naturally occurring chemical is linked to kidney stone formation. Of all foods that contain oxalate, spinach has the highest amount.

USDA Agricultural Research Service scientists have identified eight spinach varieties that are low in oxalate. Researchers analyzed the genetic code of 310 varieties. They found six DNA markers that affect oxalate levels. Research is ongoing.

Other foods that contain oxalate include beets, rhubarb, strawberries, nuts, chocolate, tea, wheat bran, and almost all dry beans. Like spinach, all of these foods can contribute to a healthful diet.

Source: [www.ars.usda.gov/news-events/news/research-news/2017/making-spinach-with-low-oxalate-levels/](http://www.ars.usda.gov/news-events/news/research-news/2017/making-spinach-with-low-oxalate-levels/)

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# The Holidays!

The holiday season is almost here! From Thanksgiving through New Year's Day, many events will happen to gather friends and family.

Keep food safety in mind when preparing, serving and wrapping up the tasty meal. Many tips can be found at [www.ksre.k-state.edu/foodsafety/topics/holiday.html](http://www.ksre.k-state.edu/foodsafety/topics/holiday.html).

Food pantry donations also increase during the holidays. Give safe food to help those in need have a safe holiday. Learn more at [www.bookstore.ksre.k-state.edu/pubs/MF3352.pdf](http://www.bookstore.ksre.k-state.edu/pubs/MF3352.pdf).

**Turkey Roasting Tips**

minimum 325°F  
Oven temperature 350°F

Internal temperature 165°F for turkey and stuffing  
Don't rely on "pop-up" indicator

Shallow roasting pan

**Stuffed Turkey Roasting Time (Hours)**

Weight	Roasting Time (Hours)
8-12 lbs	3 to 3 1/2
12-14 lbs	3 1/2 to 4
14-18 lbs	4 to 4 1/4
18-20 lbs	4 1/4 to 4 3/4
20-24 lbs	4 3/4 to 5 1/4

Internal temperature should reach 165°F

**Unstuffed Turkey Roasting Time (Hours)**

Weight	Roasting Time (Hours)
8-12 lbs	2 3/4 to 3
12-14 lbs	3 to 3 3/4
14-18 lbs	3 3/4 to 4 1/4
18-20 lbs	4 1/4 to 4 1/2
20-24 lbs	4 1/2 to 5

**To Stuff or Not?**

Stuffing temperature inside the turkey or in a casserole pan needs to reach 165°F

[www.ksre.k-state.edu/foodsafety/topics/holiday.html](http://www.ksre.k-state.edu/foodsafety/topics/holiday.html) K-STATE Research and Extension



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On the Web at [www.rrc.ksu.edu](http://www.rrc.ksu.edu)



## What is *Saccharomyces cerevisiae*?

These two large words can be scary to read. But the common word for these words is yeast, a sugar-eating fungus.

Yeast is a single-celled fungi used to leaven bread. To grow, yeast digests its favorite food, sugar, in its various forms, granulated or brown sugar (sucrose); honey, molasses, maple syrup, fruit (fructose and glucose); and maltose in flour. As the yeast digests the sugar, it fer-



ments to produce carbon dioxide (gas) and ethyl alcohol. The gas is trapped in the stretchy dough network and expands. The ethyl alcohol gives flavor and aroma to the bread.

Learn more about yeast and how it is used at:

[www.breadworld.com/education/Yeast-Basics](http://www.breadworld.com/education/Yeast-Basics)

<http://redstaryeast.com/science-yeast/>

[www.homebaking.org/foreducators/yeast\\_science-1.html](http://www.homebaking.org/foreducators/yeast_science-1.html)