



### Inside this issue:

Chia Seeds in Jam	2
Pearled Barley	2
Bacon in Canned Green Beans	2
Mayo Mix-ins	3
Accident Prevention	3
Bake for Good: Kids	3
Food Safety Tips	4
Back to School	4



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## The Science of Freezing Food



**Freezing food is a quick and convenient method of food preservation.**

Freezing food is an easy way to preserve high quality food with maximum nutritional value. But food in the freezer doesn't last forever as changes will occur during storage.

Freeze food as soon as possible after harvest to stop chemical compounds, called enzymes, that cause deterioration and spoilage. Enzymes are naturally in foods and must be inactivated to stop loss of color and nutrients, as well as flavor changes. Blanching vegetables is

an important step to inactivate enzymes. In fruit, color changes are prevented by using pure ascorbic acid (vitamin C) or a commercial ascorbic acid mixture such as Fruit Fresh®.

Because of high water content in fruits and vegetables, texture changes occur. Water expands when frozen which ruptures food cell walls. Freezing food quickly will help reduce texture damage. Don't overload the freezer with unfrozen food and keep the freezer as cold as possible, at least 0°F or below.

Over time, food loses moisture during freezing which leads to freezer burn. Use packaging designed for freezing to reduce this problem.

Freezing does not kill bacteria, it only slows it down. When food thaws, any bacteria present will become active again. Always inspect food and packages carefully before use.

Source: <http://bit.ly/2vhb0gG>

## Why do home canned green beans get cloudy liquid?

There are several reasons. First, the beans may be too mature which makes them too starchy. The starch settles out of the food during canning. Second, minerals in hard water can give a cloudy

appearance. Third, using table salt instead of canning salt. Table salt contains anti-caking agents that can cause cloudiness. With any of these three causes, it is a quality issue. Finally, it could be

spoilage due to improper heat processing. Do not consume them in this case.



## Chia Seeds in Jam

Chia seeds are finding their way into many recipes such as baked goods, smoothies, or salad toppings. Because they form a gel when added to water, are they suitable for making fruit jam?

The structural component that makes chia seeds gelatinous is water-soluble fiber. This slimy

material forms a gum that can be used to thicken or emulsify ingredients.

There are no recipes for using chia seeds when canning jam in a water bath canner. They only storage method for this type of product is to refrigerate it and use within a couple months.

The University of Arizona has a publication on chia seeds and includes a recipe to make a Fresh Berry Chia Seed Jam. Go to <https://extension.arizona.edu/sites/extension.arizona.edu/files/pubs/az1692-2016.pdf>.



**Chia Seeds**  
Photo: University of Arizona Extension

## What is Pearled Barley?

**Pearled barley cooks quickly. There is also a quick pearl barley that is a barley flake that cooks in about 10 minutes.**

Barley is used in salads, soups or in place of rice. Pearled barley is commonly found in grocery stores. But what is pearled barley?

When barley is polished, or “pearled”, it removes

some or all of the bran layer as well as the barley hull. If it is heavily pearled, it has a white color. If it is lightly pearled, it has a tan color.

It is classified as a re-

finer grain, but is still healthier than other refined grains because it still has some bran and fiber throughout the entire kernel.

Source: <https://wholegrainscouncil.org>

## Can I add bacon to green beans before canning them?

This is an example of creating your own recipe can be a dangerous practice. While bacon and green beans are both low-acid foods, there are no processing recommendations for canning bacon. Therefore, can the beans by themselves. Then when ready to eat the beans, add the bacon just before serving.

Adding any fat or butter to home-canned products, unless specifically stated in the recipe may slow the rate of heat transfer during processing. This will result in an unsafe product. Additionally, the fat could seep in between the lid and jar rim and the lid will not seal properly.

Spices or herbs may be added in small amounts before processing.

Source: <https://learningstore.uwex.edu/Assets/pdfs/B1159.pdf>



## Mayonnaise Mix-ins!



Commercial mayonnaise isn't the culprit for food poisoning at a picnic. In fact, its high acidity helps keep food safe. More likely, unsanitary handling and preparation of food used with the mayonnaise—such as chicken, ham or potatoes—is the problem.



Mayonnaise is a basic ingredient in most homes. Quick mix-ins of common ingredients add extra zing and variety to foods typically made with mayo. Try these mix-ins:

For each 1/4 cup of mayonnaise (enough for 4 servings, 1 tablespoon each), use a spoon or small wire whip to add these amounts of mix-ins. Taste and add more if desired.

- 1/2 teaspoon of one of these spices:  
Cumin powder, Curry powder, Chili powder, Smoked paprika, Cinnamon (use just 1/4 teaspoon)
- 1 finely chopped tablespoon of one of these fresh herbs:  
Chives, Rosemary, Tarragon, Thyme, Basil, Parsley, Dill, Oregano

For extra punch, add a dash of cayenne pepper or garlic powder. Add color and spicy flavor with 2 teaspoons of your favorite mustard.

Source: <http://food.unl.edu/mayonnaise-mix-ins>

## Advancing Awareness of Accident Prevention in the Home

Everyone knows that children act fast and the importance of keeping them safe in the home. Learn how to prevent accidents in the home, the availability of American Cleaning Institute's

free educational materials as well as links to videos, infographics and children's activities sheets.

A free webinar is scheduled for **July 19, 2017**

from 11:30 AM to Noon CST. Register at [www.cleaninginstitute.org/clean\\_living/webinar\\_laundry\\_packets.aspx](http://www.cleaninginstitute.org/clean_living/webinar_laundry_packets.aspx)

**If you have any questions about this free 30 minute webinar or need additional information please email [education@cleaninginstitute.org](mailto:education@cleaninginstitute.org) or call (202) 347-2900.**



## Bake for Good: Kids

King Arthur Flour (KAF) wants to help kids bake for good! Bring this program to your local community to teach kids to make bread from scratch, bake the dough into bread or rolls, then share with the community and at home!

You can invite a KAF instructor to come to your community or do a self-directed group baking event. The in-school demonstration is for grades 4-7 and at least 50 kids. They give a 50-minute demonstration, provide flour and materials, kids bake the dough at home, then bring a loaf back to school to donate and keep a loaf at home.

Learn more about this fun program at [www.kingarthurfLOUR.com/bakeforgood/kids/](http://www.kingarthurfLOUR.com/bakeforgood/kids/). Apply for the program at <https://bfgk.wufoo.com/forms/z4hmb1x05n5vfm/>.

Kansas State University  
Research & Extension

Rapid Response Center  
221 Call Hall  
Manhattan, Kansas 66506

Phone: 785-532-1673  
Fax: 785-532-3295  
Email: kblakesl@ksu.edu



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HELP Prevent Food Poisoning!

## Safety Tips for handling and preparing common foods

Type of FOOD	AVOID	Better CHOICE
<b>MEAT &amp; POULTRY</b>	Raw or undercooked meat or poultry	Meat or poultry cooked to a safe internal temperature. Use a food thermometer to check. <a href="https://www.foodsafety.gov/keep/charts/mintemp.html">https://www.foodsafety.gov/keep/charts/mintemp.html</a>
<b>SEAFOOD</b>	<ul style="list-style-type: none"> <li>Raw or undercooked fish, shellfish, or food containing raw or undercooked seafood, such as sashimi, some sushi, and ceviche.</li> <li>Refrigerated smoked fish</li> </ul>	<ul style="list-style-type: none"> <li>Leftover seafood heated to 165°F</li> <li>Canned fish and seafood</li> <li>Seafood cooked to 145°F</li> </ul>
<b>DAIRY</b>	Unpasteurized (raw) milk	Pasteurized milk
<b>EGGS</b>	Foods that contain raw or undercooked eggs, such as: <ul style="list-style-type: none"> <li>Homemade Caesar salad dressing</li> <li>Raw cookie dough</li> <li>Eggnog</li> </ul>	Use pasteurized eggs and egg products when preparing recipes that call for raw or undercooked eggs.
<b>SPROUTS</b>	Raw or undercooked sprouts, such as alfalfa, bean, or any other sprout	<ul style="list-style-type: none"> <li>Cooked sprouts</li> <li>No sprouts</li> </ul>
<b>VEGETABLES</b>	Unwashed fresh vegetables, including lettuce/salads	<ul style="list-style-type: none"> <li>Washed fresh vegetables, including salads</li> <li>Cooked vegetables</li> </ul>
<b>CHEESE</b>	Soft cheeses made from unpasteurized (raw) milk, such as queso fresco, blue-veined, feta, Brie, and Camembert	<ul style="list-style-type: none"> <li>Soft cheeses that are clearly labeled "made from pasteurized milk"</li> <li>Processed cheeses, cream cheese, mozzarella, hard cheeses</li> </ul>

[www.cdc.gov/foodsafety](http://www.cdc.gov/foodsafety)

[www.cdc.gov/foodsafety/pdfs/safety-tips-for-handling-and-preparing-common-foods.pdf](http://www.cdc.gov/foodsafety/pdfs/safety-tips-for-handling-and-preparing-common-foods.pdf)



Karen Blakeslee, M.S.



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



## It's Back to School Time!

Pack the book bags and pack the lunch! It's time to head back to school! Help get your child to eat the lunch you packed with these tips:



**Source:**  
[www.eatright.org/resource/food/nutrition/eat-right-at-school/my-child-doesnt-eat-the-lunch-i-pack-what-do-i-do](http://www.eatright.org/resource/food/nutrition/eat-right-at-school/my-child-doesnt-eat-the-lunch-i-pack-what-do-i-do)

1. Have them help choose foods at the store they like. They can also help pack their lunch.
2. If lunch time is short, pack bite sized

foods. Cut sandwiches in fourths to grab easier. Pack grapes, string cheese, and whole wheat crackers.

3. Use easy open lunch bags and insulated bags with ice packs to keep cold foods cold.
4. Pack smaller portions so they don't waste food. Keep nutrition in mind to give them good fuel on the go!