

## Just Because It Seals, Doesn't Mean It's Safe!




Food Safety for Fair Exhibits and Home  
Karen Blakeslee, M.S.






## It is the 21<sup>st</sup> Century!

- Just because Grandma did it her way, doesn't mean it's safe today!!




- It is important to use current food preservation practices

## Why Get Up to Date?

- Food preservation is a **science** and things have **changed!**
  - pH < 4.6 = high acid foods
  - pH > 4.6 = low acid foods
    - Supports growth of botulism!
  - Water activity
  - Heat penetration through the jar
  - Thickness of the food mixture
  - Size of food pieces
  - Size of jar
  - Raw pack or Hot pack
  - Altitude of residence
  - Time and temperature
  - Headspace





## Creative Canning → Foodborne Illness!

- Improperly home canned vegetables are the most common cause of botulism outbreaks in the U.S.
  - Did not pressure can
  - Ignored spoilage signs
  - Improper instructions
  - Unaware of the risks






Canned peppers with botulism  
CDC - Public Health Imaging Library

<http://www.cdc.gov/features/homecanning/>




## The Basics

- Use USDA processing methods
- Clear, standard canning jars
- High acid foods **MUST** be water bath processed
  - Jams, jellies, fruits, pickles
- Low acid foods **MUST** be pressure canned
  - Vegetables, meats
- Tomatoes, with added acid, may be processed either way

## Trusted Recipe Sources



6<sup>th</sup> edition

● **Not recommended to can homemade recipes**




## Packaged mixes

- For quick and easy canning
- Pickles
- Salsa
- Sauces
- Many more!



Follow instructions exactly!!!!



Jarden Home Brands





Boys and Girls Club Work, canning demonstration, 1920. Minnesota Historical Society Photography Collection • SA1.31 r30, 81684

- Recipes older than 1994 may be unsafe




## Unsafe Recipes Sources

Just because a food is canned commercially doesn't mean it can be canned safely at home!!

- Blogs
- Pinterest
- Old recipe books
- Recipe magazines
  - May not be adequately tested
- Many others...







## Unsafe Processing



Dishwasher



Oven or Microwave



Open Kettle Canning



Pressure Cooker



Sun Canning

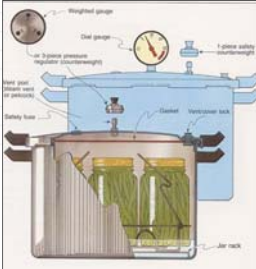


Steam Canning

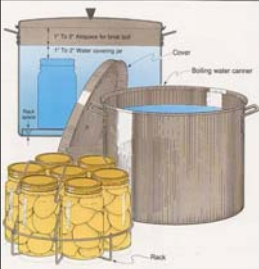



## Canning Equipment



USDA Complete Guide To Home Canning




Pressure Canner – Dial or Weighted Gauge



Water Bath Canner






## Pressure Gauge Testing



- Dial pressure gauges need yearly testing
- If more than 1 pound off, replace
- Weighted gauges do not need testing
- 1 pound error in a 20-minute process causes over 10% decrease in sterilizing value
  - 2 pound error a 30% decrease

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## Types of Jars

- Use regular or wide-mouth canning jars
  - 4 oz – ½ gallon sizes
  - ½ gallons for fruit juice only
- Clean, not damaged
- NO Mayonnaise jars!!
- Clear jars only!
  - No colored jars for the fair








Jarden Home Brands





## Types of Lids

- Use two-pieced lid
- Always use new lids
- Pretreat lids per manufacturer's directions
  - Newer lids don't need pretreating, but it's a good idea






USDA Complete Guide To Home Canning





## Headspace





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- Space in jar between bottom of lid and top of food/liquid
- Varies by type of food
- Proper headspace creates vacuum seal
- Usually:
  - 1/4" jellied fruit products
  - 1/2" fruits, tomatoes and pickles
  - 1" to 1-1/4" low acid foods

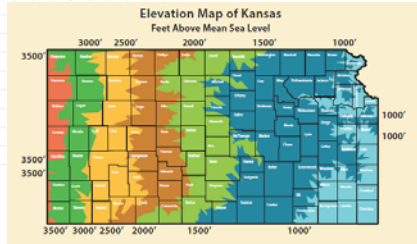


USDA Complete Guide To Home Canning

## Adjusting for Altitude

This is the number one reason for disqualification!!





**How to Adjust**

Boiling Water Bath  
↑ time


Pressure Canning  
↑ pressure



Search Kansas Elevation Data at <http://geonames.usgs.gov/pls/gnispublic>  
<http://www.ksre.ksu.edu/bookstore/pubs/MF3172.pdf>

## Processing Time

- Each food and preparation style has its own processing time
- Time differs with size of jar
- Too Little (Underprocessing)
  - Spoilage
- Too Much (Overprocessing)
  - Overcooked
- After removing canner lid...
  - Let jars sit in canner for minimum of 5 minutes



## Sensational Salsa!

Please do not experiment with canning your own recipe that mixes low-acid vegetables together, even with "some" acid like vinegar or lime juice. If done improperly, you put yourself at risk for botulism, a potentially fatal food poisoning.




<http://nchfp.uga.edu/publications/nchfp/factsheets/salsa.html>  
<http://www.ksre.ksu.edu/bookstore/pubs/MF3171.pdf>




## Tomatoes Need Acid


- All Tomatoes have pH between 4 - 4.6
  - Borderline for safe boiling water canning
  - This includes all colors of tomatoes!
- For Pints
  - 1 Tablespoon bottled lemon juice
  - ¼ teaspoon citric acid
- For Quarts
  - 2 Tablespoons bottled lemon juice
  - ½ teaspoon citric acid



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## More on Tomatoes

- Vinegar may be used, but....
  - 4 Tablespoons vinegar per quart or 2 Tablespoons per pint
  - Flavor may be objectionable
- Add acids directly to jar before filling
- If too acidic, add sugar to taste
  - Example: 1 tablespoon per quart




Fermenting tomatoes

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## Pie Filling

- Must use Clear Jel® as thickener
  - This will not break down during processing, which would cause a runny filling
- Regular corn starch or flour will get clumpy or separate due to repeated heating.
  - Think clumpy gravy!



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## Safety of Jerky

- Jerky
  - Must be heated to 160°F
    - Heat in marinade prior to drying
    - Heat in 275°F oven for 10 minutes after drying
  - Strips should be ¼-inch thick or less
  - <http://nchfp.uga.edu/how/dry/jerky.html>
  - Recipe needs to reflect the heating method



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<http://www.ksre.ksu.edu/bookstore/pubs/MF3173.pdf>

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## Labels for Jars

Class No. \_\_\_\_\_ Division \_\_\_\_\_  
 Product \_\_\_\_\_  
 Canning Method: Water Bath or Pressure  
 Process Time \_\_\_\_\_ Pressure (psi) \_\_\_\_\_  
 Date processed include month & year \_\_\_\_\_  
 Altitude of residence \_\_\_\_\_  
 Name \_\_\_\_\_  
 County/District \_\_\_\_\_

<http://www.kansas4-h.org/p.aspx?tabid=46>

Scroll down to "Food Preservation"

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## Judging Standards


<http://www.kansas4-h.org/p.aspx?tabid=490>

- Judging Scorecards
  - Canned Fruits and Tomatoes
  - Canned Meats
  - Canned Pickled Products
  - Canned Vegetables
  - Dried Fruits and Leathers
  - Dried Vegetables and Herbs
  - Fruit Preserves
  - Meat Jerky





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# READ THE RULES!





FAIR BOOK

## What Judges Consider

Disqualification	Lowering a Ribbon Placing
<ul style="list-style-type: none"> <li>• Jar unsealed</li> <li>• No label, missing information</li> <li>• Wrong processing method</li> <li>• Underprocessing</li> <li>• Jerky not heated to 160°F</li> <li>• Wrong jar size</li> <li>• Added thickeners, rice, pasta</li> <li>• Moving bubbles</li> <li>• Not acidifying tomatoes</li> <li>• Mashed or pureed pumpkin/winter squash</li> <li>• Paraffin wax on sweet spreads</li> </ul>	<ul style="list-style-type: none"> <li>• Not following fair book rules</li> <li>• No recipe</li> <li>• Different color rings/ bands</li> <li>• Messy jars, rusty rings</li> <li>• Not enough liquid</li> <li>• Improper headspace</li> <li>• Wrong color (artificial color added if not in recipe)</li> <li>• Food over mature</li> <li>• Uneven sized food pieces</li> <li>• Using new blue, green or purple jars</li> <li>• Brands of jar/lids not the same</li> <li>• Food above liquid</li> <li>• Fancy pack</li> <li>• Foreign material</li> <li>• Sediment in jars</li> </ul>

## Get Educated!

4-H Foods Project Curriculum and online resources



<http://www.rrc.ksu.edu/p.aspx?tabid=18>  
10 Tips for Safe Home-Canned Foods

<http://www.ksre.ksu.edu/bookstore/pubs/MF3170.pdf>





<http://nchfp.uga.edu/putitup.html>

<http://nchfp.uga.edu/>






## For the Fair **AND** Home!

- This is not JUST for the Fair!!
- All foods need to be canned safely for any use!
- Be Smart!
- Be Safe!






Need a judge's training, leader's training?  
Food preservation class?  
Resources?

### How Can I Help?




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