

Home Canning Foods



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Important “Musts” for Canning

- Food must be properly prepared and processed the correct amount of time.
- Canner must be accurate and operated correctly.
- You may need to make altitude adjustments, depending on your altitude.
- Directions from a reputable source
- Only up-to-date methods and information should be used; beware of “granny’s method.”



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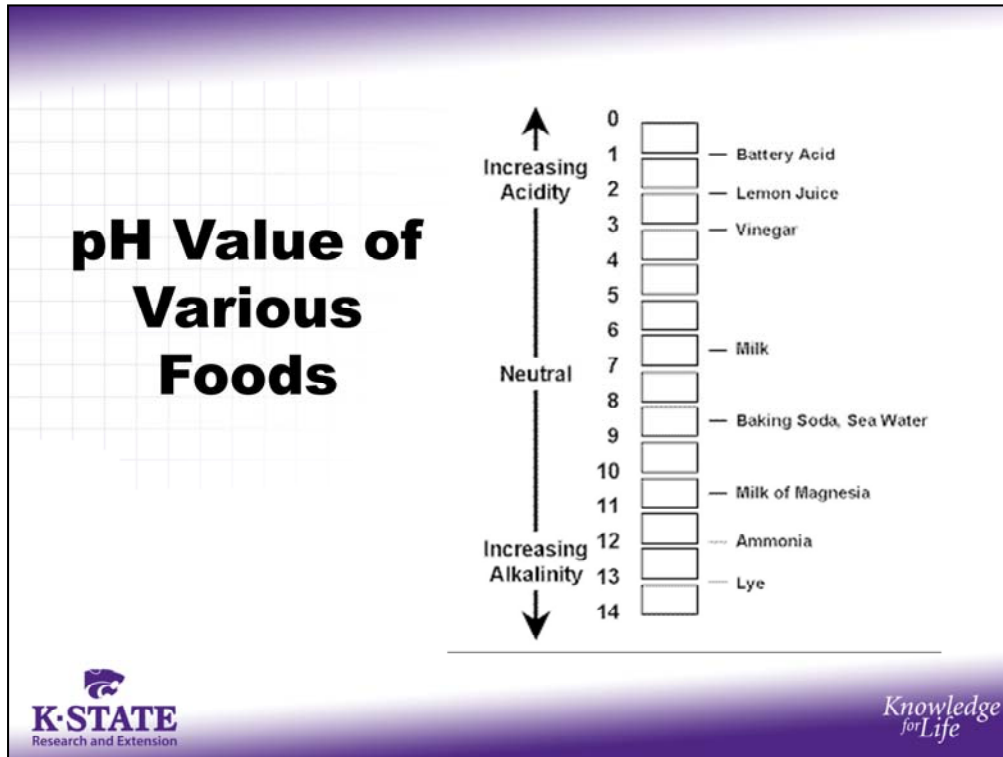
Besides selecting the appropriate method of canning, there are certain other rules you must follow to have safely canned products.

- 1) If the directions say to peel and chop, then peel and chop. If they say to leave whole, then leave whole. If it says process 30 minutes for pint jars, then put it in pint jars and process not 20, not 25, but how long??? ... 30 minutes.
- 2) If pressure canning in a dial gauge canner, your gauge must be tested and accurate. Whatever type of canner you have, it must be operated correctly.
- 3) You may need to make altitude adjustments, depending on where you live.
- 4) Only use directions from reputable sources such as USDA, Cooperative Extension, the National Center for Home Food Preservation, the *Ball Blue Book* or *So Easy To Preserve*.
- 5) Don't rely on recipes from granny or your friends. Check reputable sources before you begin. Canning recommendations have changed over the years as new research has led to safer methods.

Canning Method to Use???

- Water Bath
- 212⁰F
- Pressure Canner
- 240⁰F +





Vinegar,

3 -4 - pickles, apricots, rhubarb, apples, blackberries, gooseberries, plums, oranges, grapefruit, sour cherries, peaches, pineapple, kraut, raspberries, strawberries, blueberries, sweet cherries

3.9 pears

4.3 tomatoes

4.4 figs

4.6 division between high acid and low acid

5 – 5.6 squash, pumpkin, carrots, pimentos, turnips, cabbage, green peppers, beets snap beans, sweet potatoes, white potatoes, spinach, asparagus, mustard greens, baked beans, red kidney beans, onions

5.9 most meats, lima beans

6.1 – 6.6 chicken, succotash, peas, corn, oysters, mushrooms, clams, crabmeat

7 hominy, ripe olives, shrimp

Preventing Botulism

- Spores won't germinate in acid environments.
- Spores are destroyed when heated long enough at a specific temperature.
- USDA recommends a canner temperature of at least 240°F at sea level for canning low acid foods.
- Pressure canner must be used for all low acid foods.



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Botulism can be prevented...IF YOU FOLLOW THE RULES!

The spores will not germinate in acid environments. This is why acid foods or foods that have acid added to them like tomatoes and pickles can be safely canned in a boiling water bath. Spores are destroyed when heated long enough at a specific temperature. For canning low acid foods, USDA recommends a canner temperature of 240°F at sea level. Temperatures this high can only be reached in a pressure canner. Pressure processing is the only safe way to can all low acid foods.

Botulium spores are on most fresh food surfaces. Found in dirt. Because they grow only in the absence of air, they are harmless on fresh foods.

washing

peeling

blanching

Salmonella destroyed at 140°F

Staphylococcus aureus destroyed above 140°F

Staph toxins destroyed at 240°F

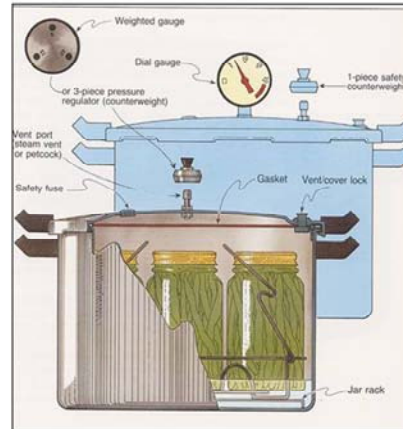
Bacterium Clostridium botulinum

Botulism spores destroyed at 240°F+

Live in 2% oxygen environment

Pressure Canner

- Low acid
- 240°F
- Base, rack, lid
- Fill with water based on manual recommendation
 - Vinegar?



All vegetables and meats MUST be pressure canned.

Gauges

- Dial gauges should be checked annually
- Weighted gauges are calibrated for life

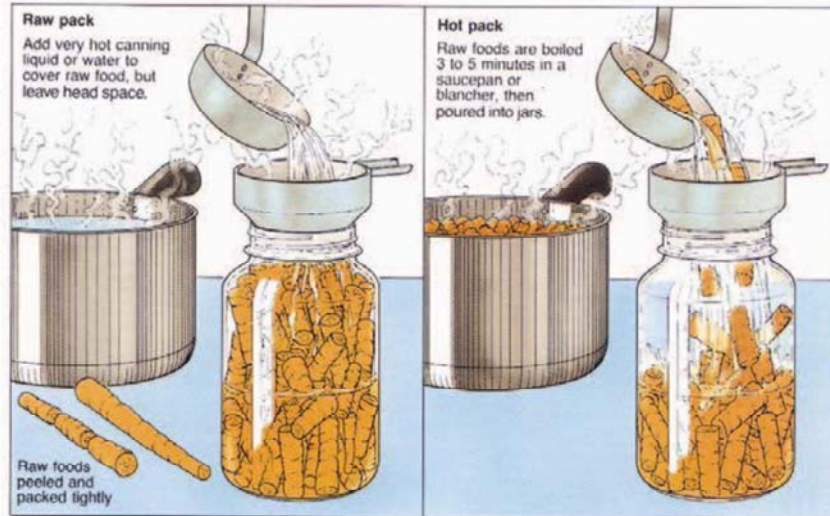


Equipment

- Mason Jars
- Two piece lid
 - Flats heated for 10 minutes
 - Simmer 180°F
 - **DO NOT BOIL FLATS**



Methods of Pack



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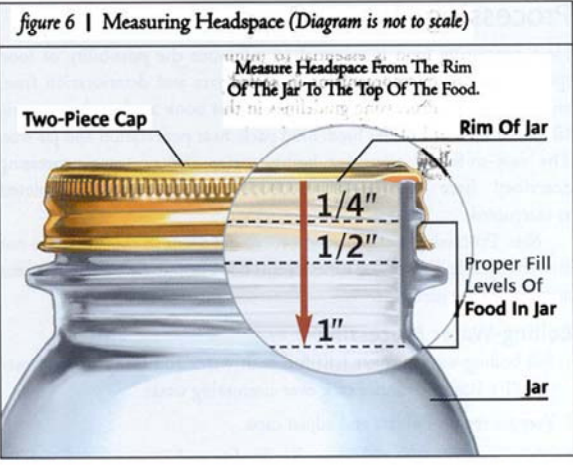
Raw Pack - raw, unheated food into jars, boiling hot water, juice, or syrup poured over
Pack tightly because fruits and vegetables will shrink during processing EXCEPT corn, lima beans, potatoes, peas

Hot Pack – heating food to boiling and then packing the hot food in boiling hot liquid –
don't pack food tightly because shrinkage has already taken place

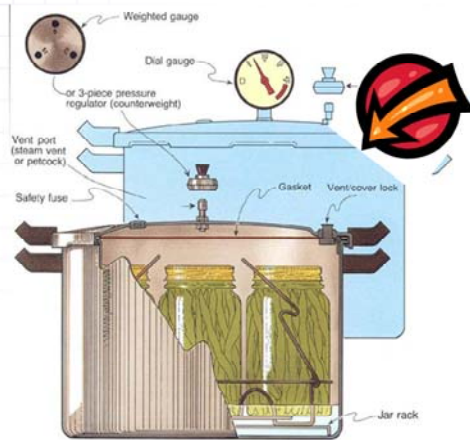
Process of filling jar



Head Space



Exhaust Pressure Canner



10 minutes then put weight on vent

Inside temperature may not read correctly with gauge

Place regulator on vent pipe or weighted gauge on psi of 5, 10 or 15

Air in cooker had been exhausted when control jiggles vigorously

Start processing time

Process Times

- Foods are prepared by a specific procedure.
- The length of time it takes to adequately heat the coldest spot in the jar is determined.
- Size of the jar, size of the food, consistency of the canning liquid, etc. all have an effect on how heat penetrates through the product.



Canning processes are determined for specific foods prepared by specific directions for a particular size of jar. The process time is determined based on the length of time it takes to adequately heat the coldest spot in the jar. The way the food is prepared (such as the size of pieces, with or without the peel, etc.), the consistency of the canning liquid and the size of the jar have an effect on how heat penetrates through the product.

The lower temperatures are not effective for killing bacteria, processing times need to be increased for water bath canner; pressure canners need to increase pressure.

Adjust for Altitude

Water Boils at Lower
Temperatures as Altitude
Increases

Altitude (in feet)	Temperature at which Water Boils
10,000	194°F
8,000	197°F
6,000	201°F
4,000	204°F
2,000	208°F
0 (Sea Level)	212°F

Kansas altitudes –

<http://skyways.lib.ks.us/kansas/counties/index.html>

By address –

<http://www.daftlogic.com/sandbox-google-maps-find-altitude.htm>



USDA Complete Guide
To Home Canning

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Recipes in So Easy to Preserve are based on an altitude of 0 – 1,000 feet. Tables are provided in each section to adjust for higher altitudes.

The Ball Blue Book recipes are based on an altitude of 0-1,000 feet. See chart on page 5 to adjust for higher altitudes.

Google earth or

Removing Jars

- Boiling Water Bath Canner
 - Wait 5 minutes before removing jars
- Pressure Canner
 - Wait 10 minutes, remove lid



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When process time is complete, turn off heat.

It may take awhile for pressure to drop (30-45 minutes). Do not rush cooling, could cause breakage.

Remove control/weight, then remove lid. Cautious as the steam will pour out.

Cooling Jars

- Do not retighten jar lids on hot jars from canner
- Jars not sealed?
 - Reprocess food
 - Within 24 hours
 - New flat
 - Same time and process



- Store in fridge and use within a week (freezer also acceptable)
- Store jars of food in cool dark place
 - Remove bands

Research on Canning

- Food inside of jar must reach proper temperature
- Shelf life of home canned foods



Cool dry place top quality for at least a year if properly canned and sealed.

Unsafe Canning Methods

- Pressure cookers not for canning
- Open-kettle canning
- Conventional or microwave ovens
- Dishwashers
- Slow cookers
- Steam canners
- Sun
- Aspirin



Unsafe Canning Methods

- Pressure canners should not exceed 15 psi
- Jars with wire bails and glass caps
- One-piece zinc porcelain-lined caps
- Glass and zinc caps with flat rubber rings



Research Based Home Canning Recipes

- K-State Research & Extension
 - <http://www.rrc.ksu.edu/p.aspx?tabid=18>
- University of Georgia Extension
 - <http://extension.uga.edu/food/preservation/>
- National Center for Home Canning
 - <http://www.uga.edu/nchfp/>

Design Your Own Recipes?



QUESTIONS???

