

Welcome!

April 11- 4-H Project Exhibit Judging
 April 18- Foods & Nutrition
 April 25- Foods Preservation

To help with tonight's webinar, please mute your mic.
 Thank you!
 This video will be recorded.

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Meet the Team!

 Linda Beech
 Extension Agent Emeritus

 Karen Blaeslee
 Extension Associate
 Rapid Response Center
 Dept of Animal Sciences and Industry

 Nancy Horig
 Extension Agent,
 Wild West District

 Amy Sollock
 Extension Specialist,
 4-H Youth Development

 Ashley Svaty
 Extension Specialist,
 Family & Consumer Sciences

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Follow Along!

Refer to the handout

**And the Winner is...
 A Guide to Judging
 Food Preservation**

All handouts are at
<https://www.rrc.k-state.edu/judging/index.html>

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



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The Science...Yes, it matters!



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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!



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Underprocessed Salsa Gone BAD!!



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Reasons for Canning/Seal Failures

99% due to user error!

Most common reasons:

- Using old/unsafe recipes
- Using untested recipes or untested guidelines
- Using old/unsafe methods passed down in family
- Using wrong jar size
- Using improper processing methods
- Storing in the wrong type of location
- Adjusting screw band too tight
- Not adjusting for altitude
- The list goes on.....



Photos: Becky Reid

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Source: Newell Brands, 2020

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Conditions for Growth

F Food	A Acid	T Time
T Temperature	O Oxygen	M Moisture

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3 Conditions that affect Food Preservation

A



Acid

O



Oxygen

M



Moisture

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Acidity of Foods

Acid foods – pH ≤ 4.60
Acidified foods – Start above 4.60 but lowered with added acid

pH 4.6

After processing – pH must equilibrate in 12-24 hours

Approximate growth limits for:

1	Strong Acid
2	Molds
3	Yeasts
4	Bacteria
5	Neutral
6	Neutral
7	Neutral
14	Strong Alkali

High-Acid Foods

- Lemons
- Pickles
- Gooseberries
- Apricots
- Plums
- Apples, Blackberries
- Sour Cherries
- Peaches
- Sauerkraut
- Peas
- Tomatoes

Process at 212°F in Boiling Water Canner

A



Acid

Low-Acid Foods

- Oats
- Carrots
- Beets, Turnips
- Green Beans, Spinach
- Asparagus
- Lima Beans

Process at 240°F in Steam-Pressure Canner



Ball Blue Book, Newell Brands

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Water Activity

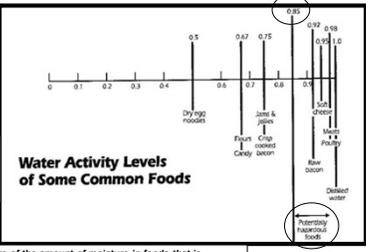
M



Moisture

Fruits & Vegetables 0.97-0.99

Dried foods 0.55-0.80



Water Activity Levels of Some Common Foods

Water activity = a measure of the amount of moisture in foods that is available for microbes to use.
Scale: measured on a scale from 0 to 1.0, with distilled water having a value of 1.0

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Oxygen Requirements

Microorganisms have different oxygen needs for growth.

- Aerobic - need oxygen to grow
- Anaerobic - grow only when oxygen is absent
- Facultative - can grow with or without oxygen



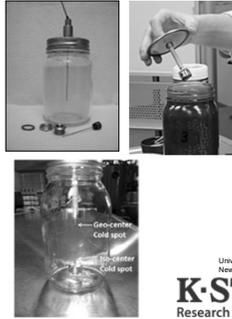
University of Georgia



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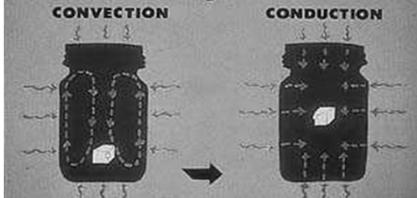
Importance of Heat Penetration

- Process time is affected by whether food heats by convection, conduction, or a combination of both.
- Heat penetration studies scientifically determine safe processing times.
- The "cold spot" must reach the correct temperature for the correct length of time to destroy target pathogens.
 - Geocentric - conduction - dense recipes
 - Isocentric - convection - liquid recipes



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FOODS HEATING by:



Isometric center -
Convection heating -
liquid recipes

Geometric center -
Conduction heating -
dense recipes



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Heat Penetration, cont.

- Follow recipe exactly
- The following slow down heat penetration:
 - Extra sugar or fat
 - Oversize food pieces
 - Added thickeners
- Use recommended canners
 - Heat-up and cool-down times in pressure canners are counted toward sterilizing value of the process.
 - **Don't rush them.**
- **Science of Canning: Recipe Development (Newell Brands)**
 - <https://youtu.be/01ITxSgXlys>



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Just Wait!

Importance of 5-minute wait

- After processing and removing canner lid
- **Allows temperature in jars to continue to rise**
- Gives extra chance for lids to seal
- Allows steam to escape from canner
- Written into Ball Blue Book recipes, KSRE recipes, in "Preserving Food" chapter of So Easy to Preserve



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How-to Guides to...

Water Bath and Steam Canning
<https://www.bookstore.ksre.ksu.edu/pubs/MF3241.pdf>

Pressure Canning
<https://www.bookstore.ksre.ksu.edu/pubs/MF3242.pdf>

- Also in Spanish!

- Also in Spanish!



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Question #1

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? ?

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Question #1

Which of these can be processed safely in a water bath canner?

- A. Halved or sliced peaches
- B. Corn relish
- C. Vegetable soup mix
- D. Barbecue sauce
- E. A, B, and D

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What Makes YOU a Food Preservation Judge?

- You love to educate!
- Know basic food science
- You understand the importance of preserving food safely
- Show them...
You enjoy preserving food!



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Tools to Take

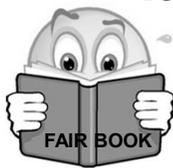
- Towels
- Washcloths
- Flashlight
- Ruler
- Water bottle
- Disinfectant wipes
- Resources
- Scorecards



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READ THE RULES!



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Session 3 - Food Preservation

- Just Because it Sells, Doesn't Mean it's Safe - Presentation index (PDF)
- Recording of Session 3
- and the Winner Go - Tips on judging food preservation, condensed version of PowerPoint
- 18 Tips for Safe Home-Canned Food (Spanish)
- Safe Safe Safe at Home (Spanish)
- What's Your Education? (Spanish)
- Dry Meat Safety at Home (Spanish)
- Food Preservation Judging Criteria
- Food Safety Recommendations for Food Preservation Exhibits - Updated March 2024
- Judging Home Preserved Foods - University of Georgia
- Food Preservation Problems and Solutions
- Canning Meat... Problems and Solutions
- Food Preservation Labels
- Food Preservation Labels Small 1 x 1.5 08
- Food Preservation Labels Large 2 x 4
- Kansas State Fair 4 H Fairbook
- 4 H Book - Nutrition (pp. 19-21)
- Scorecards
 - Judging Dried Fruits & Leather
 - Judging Meats
 - Judging Pickles
 - Judging Preserves
 - Judging Dried Meat Jerky
 - Judging Meat and Poultry
 - Judging Tomatoes and Tomato Products
 - Judging Dried Vegetables
 - Judging Vegetables



<https://www.rrc.k-state.edu/judging/index.html>

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Labels for Jars

Class No _____ Product _____
 Name _____
 County/District _____
 Altitude where processed _____ Process Time _____
 Canning Method: Water Bath OR Pressure _____
 Dial Gauge (psi) _____ Weighted Gauge (psi) _____
 Date processed (month/year) _____



<http://www.kansas4-h.org/events-activities/fairs/kansas-state-fair/>

Scroll down to "Food Preservation"
2 size options

Also on <https://www.rrc.k-state.edu/judging/index.html>



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Other Required Information

- **Must have recipe**
- Recipe source
- Processing adjustment for elevation, if needed
- Date of recipe source
 - If using Ball or Mrs. Wage's mix or pectin inserts, indicate date purchased
- Clear jars
- Jerky must list heat treatment



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Judging Standards

<https://www.rrc.k-state.edu/judging/index.html>



Food Safety Recommendations for Food Preservation Exhibits

General Guidelines:

- Exhibits should be prepared and displayed in a clean, sanitary environment.
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- Exhibits should be prepared and displayed in a clean, sanitary environment.

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

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Judge Visually

- **We do not recommend opening or tasting any jars of food!**
 - For safety of you, the judge
 - For safety of the food product at the fair and return home
- Safety is the #1 consideration in awarding food preservation entries
 - Unsafe methods should not be rewarded!
- **Why? Not all spoilage can be seen by normal human senses.**



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Problems and Solutions

FOOD PRESERVATION PROBLEMS AND SOLUTIONS

KAREN BLAKESLEE
KANSAS STATE UNIVERSITY

Sources:
So Easy To Preserve, Univ. of Georgia Ball Blue Book
USDA Complete Guide to Home Canning



CANNING PROBLEMS AND SOLUTIONS - MEAT	
Problem	Solution
Excess liquid in jar	Use less meat and more liquid.
Excess fat in jar	Use less fat.
Excess spices in jar	Use less spices.
Excess salt in jar	Use less salt.
Excess acid in jar	Use less acid.
Excess sugar in jar	Use less sugar.
Excess liquid in jar	Use less liquid.
Excess fat in jar	Use less fat.
Excess spices in jar	Use less spices.
Excess salt in jar	Use less salt.
Excess acid in jar	Use less acid.
Excess sugar in jar	Use less sugar.

<https://www.rrc.k-state.edu/judging/index.html>

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Judging Resource

- Judging Home Preserved Foods
- Great tips on judging visually




https://nchfp.uga.edu/publications/nchfp/tech_bull.html#gsc.tab=0
<https://www.rrc.k-state.edu/judging/index.html>



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What Judges Consider

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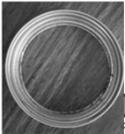


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Showmanship Tips

While not critical for food safety or quality, these can affect final ribbon placing.

- Use same color rings and lids
- Using the same brand of jars and lids
- Hard water residue present on jar surface should be removed
- Sticky label residue on the reused jars should be removed
- Rings should be free of rust
- Remove rings, check for sticky residue
- No fabric lid covers or other décor




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Recipe Source List

<https://www.kansas4-h.org/events-activities/fairs/kansas-state-fair/index.html>

2023
Kansas State
Fair
4-H Exhibitor Handbook

You cannot take your own recipe and apply processing recommendations from tested sources!!



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Recipes



- © Not recommended to can homemade (your own creation!) recipes
- © Freeze homemade recipes for long-term storage



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4-H Curriculum

- <https://shop4-h.org/collections/home-food-preservation>

HOME FOOD PRESERVATION CURRICULUM COLLECTION



HOME FOOD PRESERVATION: BOILING WATER CANNING PROJECT MANUAL \$7.95



HOME FOOD PRESERVATION: DRYING PROJECT MANUAL \$7.95



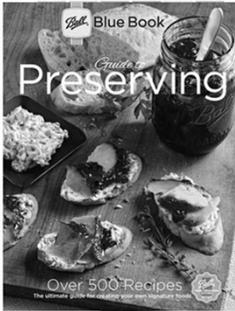
HOME FOOD PRESERVATION: PRESSURE CANNING PROJECT MANUAL \$7.95



HOME FOOD PRESERVATION: FREEZING PROJECT MANUAL \$7.95



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Blue Book
Canning and Preserving
Edition 37
Over 500 Recipes
The ultimate guide for creating your own pantry at home

Will be updated to Edition 38 in 2024!

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Packaged mixes

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

Follow their directions and do not add extra ingredients!



Newell Brands Mrs. Wages

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Food Preservation Apps

- Oregon State University
– <https://catalog.extension.oregonstate.edu/pnw689>
- Colorado State University
– <https://apps.chhs.colostate.edu/preservesmart/>



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Untested Recipe Example

Puree all vegetables to the max. Add all of the loads to a large pot, stir it all together, and bring to a boil. As it heats, use a spoon to sample the base, adding salt, black pepper and chili pepper if necessary. Turn off the heat and immediately transfer the hot salsa into warm sterile jars and screw on sterile lids. They will seal as they cool on the counter.

CLARIFICATION
In the story "Labor of love" on the Wednesday Food page, the salsa processing time was omitted. The instructions should read: Turn off the heat and immediately transfer the hot salsa into warm, sterile jars and screw on sterile lids. Process in a boiling water bath for 20 minutes (no need to pressure-can because of the added vinegar). The jars will seal as they cool on the counter.

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New from Mrs. Wages

- 1 Step Pickling Brines
- ONLY makes 1 pint
- REFRIGERATOR STORAGE ONLY!!

1 Step - Vinegar Colelaw Mix

1 Step Creamy Colelaw Mix

1 Step Kimchi Mix

1 Step Pickled Bread and Butter

1 Step Pickled Cherry Habaneros

1 Step Pickled Kosher Oil

1 Step Pickled Pickled Vegetables

1 Step Pickled Spicy Quail

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New from Heinz

- Ready to use
- Already diluted with water
- Has sugar and salt included
- ONLY for REFRIGERATOR PICKLES!!!!
- Pickling vinegar strength ONLY 2.5%

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Question #2

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Question #2

Which of these recipes is NOT from a reliable source?

- A. Bread and Butter pickles – USDA
- B. Pumpkin Butter – The Frugal Navy Wife
- C. Reduced Sugar Peach Pineapple Spread – Preserve Smart app
- D. Strawberry Jelly – Sure Jell website

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Types of Jars

- Use regular or wide-mouth canning jars
 - ½-pint up to 1-quart sizes only
 - Do not use jar larger than stated in recipe
- Clean, not damaged
- No colored jars
- No Mayonnaise jars
- Ball, Kerr, Golden Harvest



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Types of Lids

- Use two-pieced metal lid/ring
- Always use new lids – wash them!
- **Current lids don't need preheating**



Hand Wash Rings

USDA Complete Guide to Home Canning



Buckled lid – ring screwed on too tight

Do NOT BAKE food in the lids/rings!!

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Preheated Lids Evaluation - 2023

- Newell Brands tested regular and wide mouth lids in water bath and pressure canning
- After canning and cooling overnight, internal vacuum pressure was measured
- 30% of pressure canned regular mouth preheated lids buckled
- 17% of pressure canned wide mouth preheated lids buckled
- **DO NOT PREHEAT LIDS!**
 - No definitive advantage compared to just hand-washing in warm water
 - Can result in less vacuum pressure with preheated lids which can lead to seal failure and buckling

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Type of Pack



Hot pack

Raw foods are heated 3 to 5 minutes in a stockpot or blancher, then poured into jars.



Raw pack

Add very hot canning liquid or water to cover raw food, but leave head space.

Raw foods packed and packed tightly.

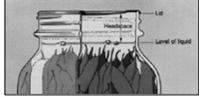
USDA Complete Guide To Home Canning

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Headspace

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



• Follow guidelines on the scorecards!

USDA Complete Guide To Home Canning

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Adjusting for Elevation

Preserve It Fresh. Preserve It Safe.

What's Your Elevation?

As elevation increases, the boiling point of water decreases

4,000 ft	204°F	Increase time when water bath or steam canning
3,000 ft	202°F	
2,000 ft	203°F	
1,000 ft	212°F	Increase pressure when pressure canning
Sea level	212°F	

Prevent botulism! Adjust processing for elevations above 1,000 feet

Search Elevation Data at
<https://www.daftlogic.com/sandbox-google-maps-find-altitude.htm>
<http://www.ksre.ksu.edu/bookstore/pubs/MF3172.pdf>

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Examples of Altitude Adjustments

Boiling-Water Method

The processing times given in this book for high acid foods are based on processing at or below 1,000 feet above sea level using the boiling water method. When processing at altitudes higher than 1,000 feet above sea level, adjust the processing time according to the boiling water canner chart.

Altitude in Feet	Required Processing Time
1,000 to 3,000	5 Minutes
3,000 to 4,000	10 Minutes
4,000 to 6,000	15 Minutes
6,000 to 10,000	20 Minutes

Pressure Method

This pressure method is used for low acid foods. The correct pressure canner for use and ready-to-use instructions are given in a weighted-gauge canner and processing at or below 1,000 feet above sea level. When using a dial-gauge canner, processing at altitudes higher than 1,000 feet above sea level should be done according to the pressure canner chart.

Altitude in Feet	Required Weighted Gauge Pressure (PSI)
0 to 1,000	10
1,000 to 2,000	10
2,000 to 4,000	10
4,000 to 6,000	10
6,000 to 8,000	10
8,000 to 10,000	10

From Ball Blue Book

Table for Example A
Recommended process time for Peaches in a boiling water canner

Style of Pack	Process Time at Altitude of			
	Sea Level	1,000 ft	3,000 ft	Above 6,000 ft
Hot	25 min	30 min	35 min	40 min
Hot	25	30	35	40
Hot	25	30	35	40
Hot	30	35	40	45

Table for Example B
Recommended process time for Peaches in a dial-gauge pressure canner

Style of Pack	Jar Size	Canner Pressure (PSI) at Altitude of			
		Sea Level	1,000 ft	3,000 ft	Above 6,000 ft
Hot	10 min	6 lb	7 lb	8 lb	9 lb
Hot	10 min	6	7	8	9
Hot	10 min	6	7	8	9
Hot	10 min	6	7	8	9

Table for Example C
Recommended process time for Peaches in a weighted-gauge pressure canner

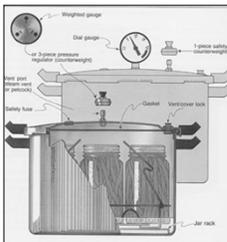
Style of Pack	Jar Size	Canner Pressure (PSI) at Altitude of	
		Sea Level	1,000 ft
Hot	10 min	5 lb	10 lb
Hot	10 min	5	10
Hot	10 min	5	10

From USDA recipes

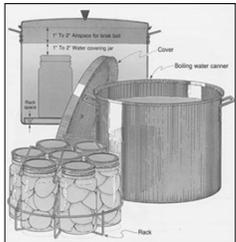
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Canning Equipment



Pressure Canner – Dial or Weighted Gauge



Water Bath Canner

USDA Complete Guide To Home Canning



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Steam Canners

- Use water bath canning recommendations
- Limited to **45 total minutes** of processing
- Must maintain 212°F



Victorio Steam Canner





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Presto Digital Pressure Canner

- Also a water bath canner
- Not tested by USDA!
 - Only meets USDA guidelines for processing
- Presto must stand behind their product

<https://www.gopresto.com/downloads/canning/DigitalCannerFactsandFAQs.pdf>




NOT FOR COOKING!!
 *The USDA and the National Center for Home Preservation provide guidelines for home canning. Neither agency certifies or approves home canning equipment.
 Source: National Center for Home Food Preservation



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Unsafe Processing



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Fancy Packs

From Univ. of Georgia

- Many types of fancy packs produce potentially unsafe products.
- The adequacy of process times is dependent on using specified preparation procedures.
- Fancy packs may not have received adequate heat penetration to kill harmful microorganisms.



https://nchfp.uga.edu/publications/nchfp/tech_bull/1Judging_Preserved.pdf



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Allowed Fancy Packs

- Cucumber spears for pickles
- Asparagus spears
- Pickled asparagus spears
- Pickled okra
- Whole green beans
- Pickled green beans
- Pickled baby carrots



USDA recipes are available for these



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Question #3



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Question #3

I live in SE Kansas, where the altitude is 900 feet. But I went to my Grandma's house in NW Kansas, where the altitude is 2,750 feet, to can food. Which altitude should be listed on the entry label for the fair in SE Kansas?

A. 900 feet
 B. 2,750 feet
 C. 1,000 feet
 D. None

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Tomatoes Need Acid

- Tomatoes have pH ~ 4.0 – 5.2
 - Borderline for safe boiling water canning
 - This includes **all colors** of tomatoes!
 - Must acidify for BW and pressure canning
- 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 acid directly to jar before filling
- If too acidic, add sugar to taste
 - Example: 1 tablespoon per quart



Fermenting tomatoes

TOMATOES

- Freezing
- Canning
- Processing Methods
- Quality
- Problems and Solutions
- Recipes

For information, visit www.k-state.edu

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About Tomatoes...

- They may taste acidic, but many are low acid
 - Sugar content in tomatoes masks the acidity
 - Climate, soil, variety, maturity make a difference
- Univ. of Illinois tested 55 heirloom varieties
 - Average pH was 4.18-4.92
- NDSU results for salsa

Table 1. pH levels of tomatoes and salsa with and without lemon juice

Tomato variety	pH of tomatoes	pH of salsa with lemon juice	pH of salsa without lemon juice
Heirloom	5.04	4.74	4.66
Yellow Pear	5.08	4.58	4.54
Yellow Globe	4.87	4.78	4.78
Yellow Pear	4.87	4.58	4.56
Lechino	5.08	4.78	4.61
Cherokee	5.08	4.52	4.50
Yellow Pear	4.98	4.78	4.78
First Pear	5.08	4.58	4.67
Russian	5.08	4.58	4.67
Super Mar	5.08	4.52	4.55
Super Mar	4.93	4.78	4.78
Super Mar	4.93	4.78	4.78
Cherokee	5.08	4.58	4.58
Cherokee	5.08	4.77	4.58
Dr. Carter	5.08	4.58	4.72

* All tomatoes were grown in Illinois, U.S.
 ** Approximately 100 grams of raw tomato pulp was used to measure pH.
 *** Approximately 100 grams of cooked salsa was used to measure pH.



<https://www.ndsu.edu/agriculture/extension/publications/why-add-lemon-juice-tomatoes-and-salsa-canning>

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66



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Question #4

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Question #4

Which of these IS safely canned?

- A. Salsa in a quart jar
- B. Green beans processed in a boiling water bath canner
- C. Strawberry jam inverted to seal (open kettle canning)
- D. Acidified whole tomatoes in a pressure canner



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5 minute break!



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Judging Steps

- Review recipe and label information
- Check lid seal
- Examine jar appearance
- Remove ring, check for residue
- Measure headspace
- Examine contents with flashlight
- Rotate jar, lean on its side to check food consistency
 - Look for defects
 - Refer to judging scorecards for details
- Provide comments, how to improve
- Award ribbon placing



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Judging Tomatoes

Italian Tomatoes

12 cups halved cored peeled tomatoes (about 24 medium or 8 lb)
 Water
 Spice blend, see below
 Ball® Citric Acid or bottled lemon juice
 Salt, optional

Italian Spice Blend

4 tsp basil
 2 tsp thyme
 2-1/2 tsp oregano
 1-1/2 tsp sage
 1 tsp garlic powder
 1 tsp hot pepper flakes, optional
 Add 2-1/4 tsp of spice blend to each pint jar. If omitting hot pepper flakes, use only 2 tsp.

2019 PRESIDENT'S EXHIBITION - Judging General Tomatoes and Tomato Products

Name: _____ Product/Show: _____

Display/Exhibit: _____ Show: _____ State: _____ Fair: _____

Use this set of instructions to complete, mark entries, and awards on entries to be displayed.

Category	Quality	Quantity	Comments
Appearance	Well packed, uniform, clean, bright, and attractive	Well packed, uniform, clean, bright, and attractive	
Flavor	Well packed, uniform, clean, bright, and attractive	Well packed, uniform, clean, bright, and attractive	
Texture	Well packed, uniform, clean, bright, and attractive	Well packed, uniform, clean, bright, and attractive	
Color	Well packed, uniform, clean, bright, and attractive	Well packed, uniform, clean, bright, and attractive	
Label	Well packed, uniform, clean, bright, and attractive	Well packed, uniform, clean, bright, and attractive	
Seal	Well packed, uniform, clean, bright, and attractive	Well packed, uniform, clean, bright, and attractive	
Head	Well packed, uniform, clean, bright, and attractive	Well packed, uniform, clean, bright, and attractive	
Foot	Well packed, uniform, clean, bright, and attractive	Well packed, uniform, clean, bright, and attractive	
Stem	Well packed, uniform, clean, bright, and attractive	Well packed, uniform, clean, bright, and attractive	
Other	Well packed, uniform, clean, bright, and attractive	Well packed, uniform, clean, bright, and attractive	

Processed 40 + 5 minutes for altitude
 Source: <https://www.ballmasonjars.com/blog?cid=herbed-tomatoes>, 2019

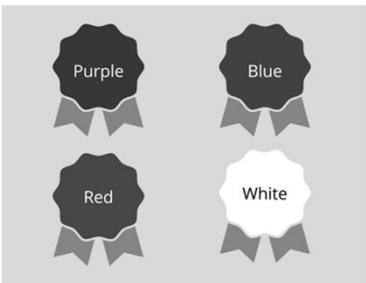


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75

Choose the ribbon!



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Sensational Salsa!

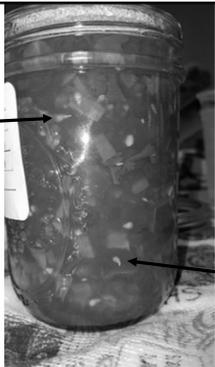
Please do not experiment with canning your own recipe that mixes low-acid vegetables together, even with "some" acid like vinegar or lime juice. If done improperly, you put yourself at risk for botulism, a potentially fatal foodborne illness.



<http://nchfp.uga.edu/publications/nchfp/factsheets/salsa.html>
<http://www.ksre.ksu.edu/bookstore/pubs/MF3171.pdf>
<http://www.bookstore.ksre.ksu.edu/pubs/MF3171S.pdf>

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Used a 24 oz (1 ½ pint) jar
No recommendations for jars bigger than a pint

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Judging Salsa

Mrs. Wages Salsa
6 pounds tomatoes
1 pouch Mrs. Wages Salsa mix
½ cup 5% vinegar

Processed 40 + 5 minutes for altitude
Mrs. Wages Salsa mix, purchased August 2019

Category	Criteria	Points
Appearance	Color	
	Texture	
	Consistency	
	Odor	
Taste	Flavor	
	Balance	
	Acidity	
	Spiciness	
Safety	Appearance	
	Odor	
	Texture	
	Consistency	

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Choose the ribbon!



Purple



Blue



Red



White



82

Fruit Pie Filling

- Don't use cornstarch!
- Use Clear Jel – cook type
– Do not use instant!





Cornstarch



Clear Jel



83

Judging Pie Filling

	Quantities of Ingredients Needed For	
	1 Quart	7 Quarts
Fresh or thawed sour cherries	3-1/3 cups	6 quarts
Granulated sugar	1 cup	7 cups
Clear Jel®	1/4 cup + 1 tbsp	1-3/4 cups
Cold water	1-1/3 cups	9-1/3 cups
Bottled Lemon Juice	1 tbsp + 1 tsp	1/2 cup
Cinnamon (optional)	1/8 tsp	1 tsp
Almond extract (optional)	1/4 tsp	2 tsp
Red food coloring (optional)	6 drops	1/4 tsp

K-STATE RESEARCH AND EXTENSION - Judging Contest Rules

These rules apply to all contests held by K-State Research and Extension. All contests are subject to change without notice. All contests are subject to the rules of the contest. All contests are subject to the rules of the contest. All contests are subject to the rules of the contest.

Contest	Contest	Contest	Contest
...

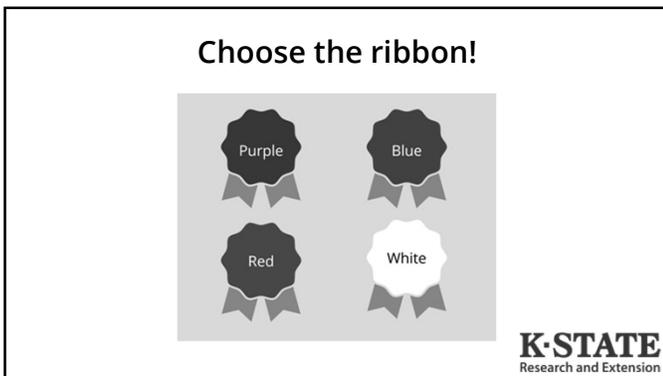


Processed 30 + 5 minutes for altitude
Source: Preserving Cherries, KSRE, 2015

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Jam and Jelly...Do Not...

- Use Paraffin wax
 - Can cause mold growth
 - Heat processing prevents mold growth
- Invert jars to seal
 - Not recommended by USDA
- Alter sugar or pectin
 - Exception - If using low- or no-sugar pectin, sugar can be altered
- Double recipes
 - Product will not set



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Judging Jelly

Cherry Jelly with liquid pectin

- 3 cups sour cherry juice (about 3 pounds or 2 quart boxes sour cherries and 1/2 cup water)
- 7 cups sugar
- 2 pouches liquid pectin

Item	Quantity	Unit	Notes
Sour Cherry Juice	3	Cups	
Sugar	7	Cups	
Liquid Pectin	2	Pouches	

Processed 5 + 5 minutes for altitude
https://hchfp.uga.edu/how/can_07/cherry_jelly_liquid.html
 June 2005

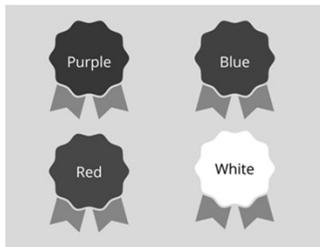


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Choose the ribbon!



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Judging Jam

Spiced Plum Jam

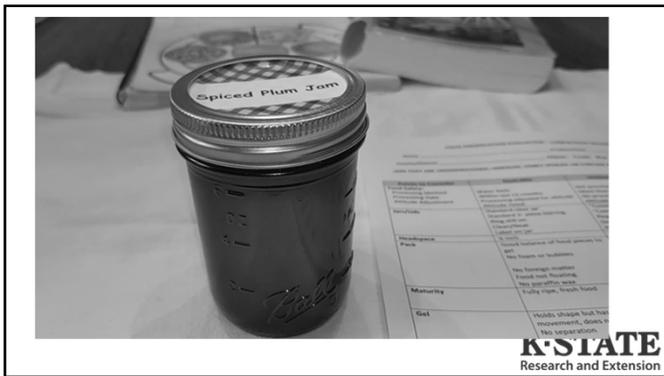
- 3 1/2 cups finely chopped fresh red plums (about 2 pounds plums)
- 1-2 Tablespoons water if needed to prevent sticking
- 2 teaspoons cinnamon
- 1/4 teaspoon ground cloves
- 1/4 teaspoon ground allspice
- 3 Tablespoons powdered pectin
- 4 cups sugar

Processed 10 + 5 minutes for altitude
 Sure-Jell pectin insert
 2019

Category	Item	Quantity	Unit
Ingredients	Plums	3 1/2	cups
	Water	1-2	Tablespoons
Spices	Cinnamon	2	teaspoons
	Ground cloves	1/4	teaspoon
	Ground allspice	1/4	teaspoon
	Powdered pectin	3	Tablespoons
Sugar	Sugar	4	cups

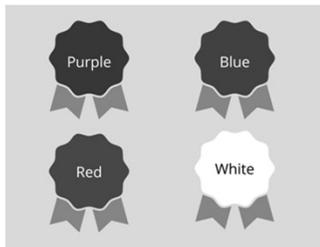


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Choose the ribbon!



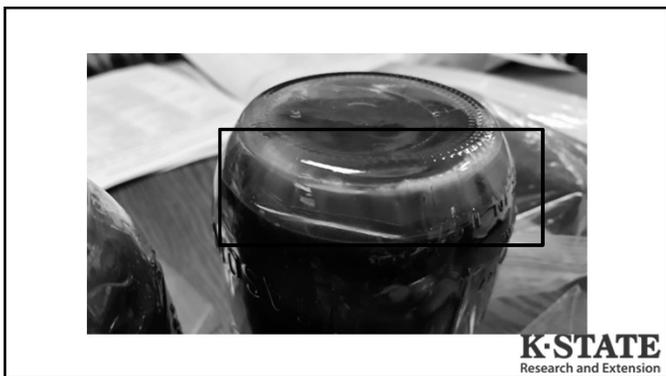
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100



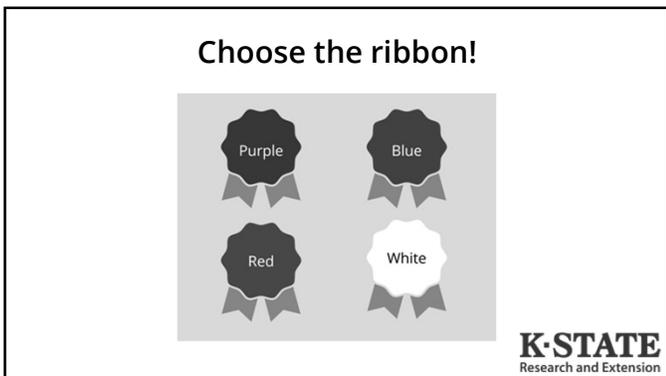
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Judging Vegetables

Carrots - Sliced or Diced

Select small carrots, preferably 1 to 1-1/4 inches in diameter. Larger carrots are often too fibrous.

Hot pack or Raw pack

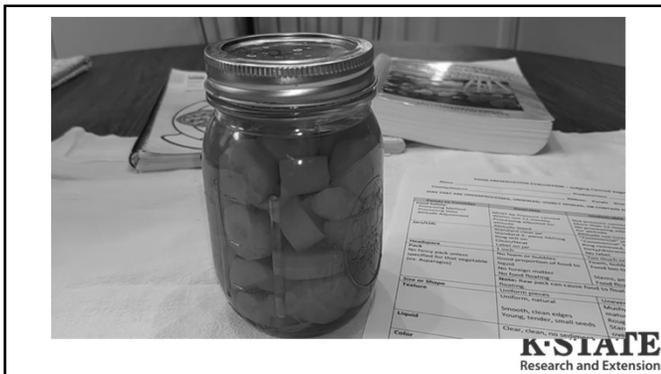
1 teaspoon of salt per quart to the jar, if desired. Add hot cooking liquid or water, leaving 1-inch headspace.

Processed at 15# pressure, weighted gauge canner
https://nchfp.uga.edu/how/can_04/carrots_sliced.html
 USDA, 2015

Vegetable	Preparation	Processing	Storage
Asparagus	Trim ends, wash, cut into 1/2 inch pieces	Boil 10 minutes	1 year
Beans	Soak overnight, boil 1 hour	Boil 1 hour	1 year
Broccoli	Wash, cut into 1/2 inch pieces	Boil 10 minutes	1 year
Brussels sprouts	Wash, trim ends, cut into 1/2 inch pieces	Boil 10 minutes	1 year
Cauliflower	Wash, cut into 1/2 inch pieces	Boil 10 minutes	1 year
Carrots	Wash, trim ends, cut into 1/2 inch pieces	Boil 10 minutes	1 year
Corn	Wash, cut into 1/2 inch pieces	Boil 10 minutes	1 year
Cucumbers	Wash, cut into 1/2 inch pieces	Boil 10 minutes	1 year
Eggplant	Wash, cut into 1/2 inch pieces	Boil 10 minutes	1 year
Kale	Wash, cut into 1/2 inch pieces	Boil 10 minutes	1 year
Kidney beans	Soak overnight, boil 1 hour	Boil 1 hour	1 year
Lentils	Soak overnight, boil 1 hour	Boil 1 hour	1 year
Peas	Wash, cut into 1/2 inch pieces	Boil 10 minutes	1 year
Potatoes	Wash, cut into 1/2 inch pieces	Boil 10 minutes	1 year
Spinach	Wash, cut into 1/2 inch pieces	Boil 10 minutes	1 year
Sweet potatoes	Wash, cut into 1/2 inch pieces	Boil 10 minutes	1 year
Tomatoes	Wash, cut into 1/2 inch pieces	Boil 10 minutes	1 year
Zucchini	Wash, cut into 1/2 inch pieces	Boil 10 minutes	1 year

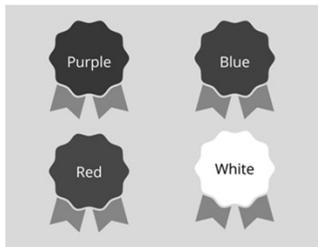


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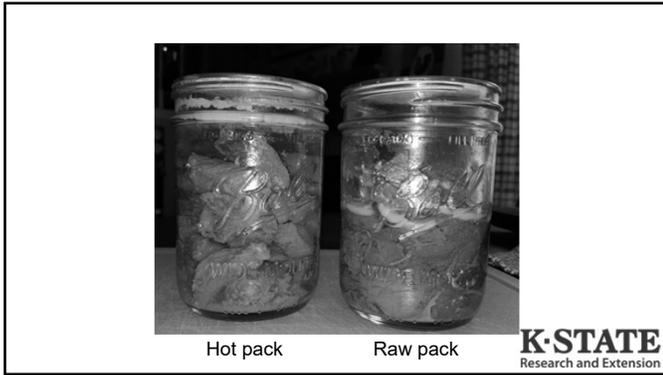


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Choose the ribbon!



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Judging Meat

Strips, Cubes or Chunks of Meat

Choose high quality chilled meat. Remove excess fat. Soak strong-flavored wild meats for 1 hour in brine water containing 1 tablespoon of salt per quart. Rinse. Remove large bones. The hot pack is preferred for best liquid cover and quality during storage. The natural amount of fat and juices in today's leaner meat cuts are usually not enough to cover most of the meat in raw packs.

Hot pack or Raw pack
Add 1 teaspoon of salt per quart to the jar, if desired.

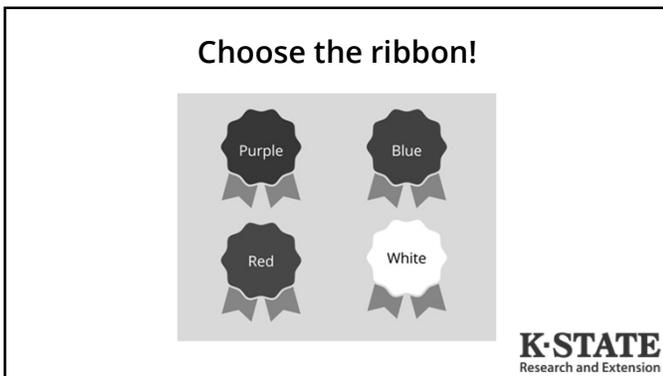
Processed at 15# pressure, weighted gauge canner
https://nchfp.uga.edu/how/can_05/strips_cubes_chunks.html
 USDA, 2009

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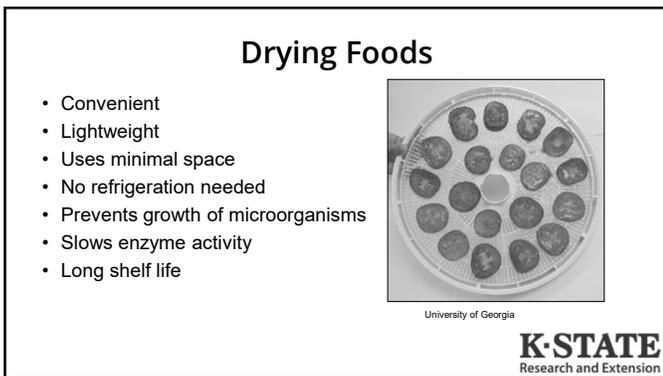
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Types of Dried Foods

- Leather
 - Fruit Leather
 - Vegetable Leather
- No visible moisture
- Dry but pliable



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Types of Dried Foods

- Fruit
 - Pretreat to prevent browning
 - Ascorbic acid
 - Sulfites
 - Fruit juice
 - Honey
 - Slice thin and even
 - Peeled fruit dries best



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Types of Dried Foods

- Vegetables
 - Keep pieces uniform for even drying
 - Steam or water blanch
 - Brittle or crisp



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Types of Dried Foods

- Herbs
 - Food dehydrator
 - Microwave
 - Paper bag with holes



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Types of Dried Foods

- Jerky
 - Must be heated to 160°F
 - This is not the drying temp!
 - 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://www.bookstore.ksre.ksu.edu/pubs/MF3173.pdf>
- <http://www.bookstore.ksre.ksu.edu/pubs/MF3173S.pdf>



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Dried Foods Scorecards

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Get Educated!

<https://www.rrc.k-state.edu/preservation/10-Tips-for-Safe-Home-Canned-Foods>
<http://www.ksre.ksu.edu/bookstore/pubs/MF3170.pdf>

National Center for Home Food Preservation
<http://nchfp.uga.edu/>

<https://www.rrc.k-state.edu/judging/index.html>

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Session 3 - Food Preservation

Just Because It Seals, Doesn't Mean It's Safe! - Presentation slides (PDF)

Recording of Session 3 nl

And the Winner Is! - Tips on judging food preservation, condensed version of Powerpoint

10 Tips for Safe Home-Canned Food (Spanish)

Safety Safe Sales at Home (Spanish)

Which Year (Spanish) (Spanish)

Dry Meat Safety at Home (Spanish)

Food Preservation Judging Criteria

Food Safety Recommendations for Food Preservation Exhibits - Updated March 2019

Judging Home Preserved Foods - University of Georgia

Food Preservation Problems and Solutions

Canning Meat - Problems and Solutions

Food Preservation Labels

Food Preservation Labels Small 1 x 2.58

Food Preservation Labels Large 2 x 4

Kansas State Fair 4-H Fairbook

4-H Foods - Nutrition (pp. 19-21)

Scorecards

- Judging Dried Fruits & Leather
- Judging Fruits
- Judging Nuts
- Judging Pickles
- Judging Preserves
- Judging Dried Meat Jerky
- Judging Meat and Poultry
- Judging Tomatoes and Tomato Products
- Judging Dried Vegetables
- Judging Vegetables

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

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Thank You!!

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April 2023