



Virginia Cooperative Extension

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Managing the Vegetable Garden's Overabundance

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Outline

- Recipes
- Food Preservation Safety & Equipment
- Boiling Water Bath Canning
- Freezing
- Herbs
- Resources

RECIPES



Recipe Ideas

- Soups or Stews:
Tomatoes, kale, chard, peppers, onions, carrots, peas, potatoes, sweet potatoes, squash, garlic
- Bread:
 - Zucchini, Apples, Corn, Pumpkin
- Dessert:
 - Apples, carrots, sweet potatoes, pumpkin, strawberries, zucchini, corn
 - Brownies, cakes, bars



Gazpacho

Ingredients

- 2 pounds ripe red tomatoes (about 10 plum tomatoes)
- 8 ounces cucumber (about 1 cucumber)
- 3 ounces green pepper (about 1/2 bell pepper)
- 1 tablespoon red wine vinegar or balsamic vinegar or white wine vinegar
- 1 garlic clove, peeled
- 3/4 cup olive oil
- Salt to taste

Directions

1. Chop the tomatoes into quarters. Add to blender.
2. Peel the cucumber and cut into chunks. Add to blender.
3. Cut the pepper in half, and remove the core along with the seeds. Chop into large pieces and place in the blender.
4. Add the garlic and vinegar to the vegetables and blend until the mixture becomes a thick liquid.
5. Add the olive oil and season with salt to taste. Blend again, then pour the gazpacho through a strainer into a pitcher.
6. Place in the fridge to cool for at least half an hour.

Recipe from: Gazpacho al Estilo de Patricia,

<http://www.delish.com/recipes/cooking-recipes/jose-andres-gazpacho-recipe>

Recipe Ideas

- Juices or Smoothies:
 - Peaches, Berries, Kale, Spinach (other leafy greens), Carrots, Beets, Apples
 - Thicken smoothies with pumpkin, sweet potatoes, butternut squash, cauliflower, and carrots
 - Turn them into popsicles or ice cream!

Peach Creamsicle Smoothie

Ingredients

- 3 cups Florida peaches, sliced
- 1 cup vanilla yogurt
- 1/2 cup Florida orange juice
- 10 to 15 ice cubes

Directions

- Using a blender, combine all ingredients. Blend until smooth. Serve with finely diced or sliced peaches and a drizzle of honey on top.

Recipe from

<https://www.followfreshfromflorida.com/recipes/florida-peach-creamsicle-smoothie>

Recipe Ideas

- Sauces
 - Pasta
 - Applesauce
- Pesto or Chimichurri
 - Basil, cilantro, parsley, arugula, garlic, carrot tops, beet greens
- Fritters
 - Sweet or savory
 - Potatoes, sweet potatoes, corn, zucchini

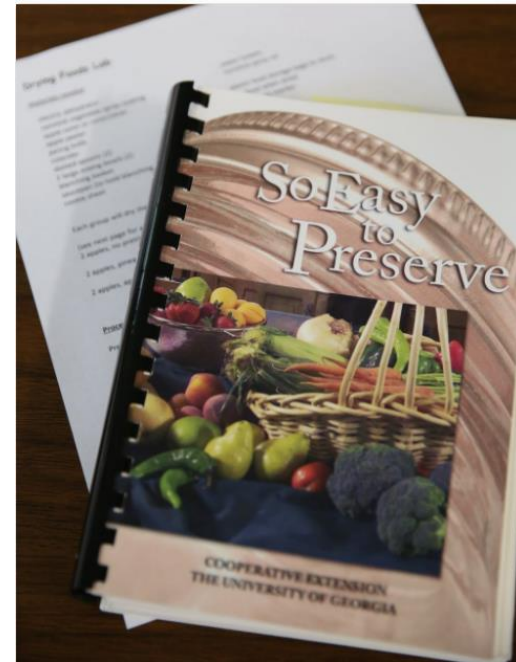


QUESTIONS?



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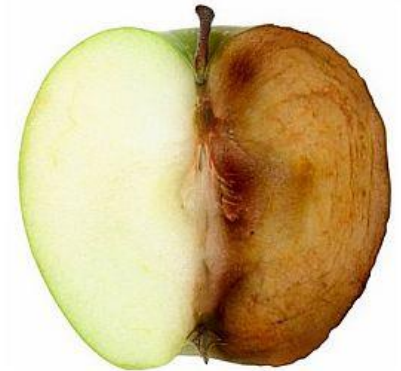
FOOD PRESERVATION SAFETY & EQUIPMENT



**National Center for Home Food
Preservation**

Why preserve foods?

- Prevent spoilage and extend shelf life.
- Types of spoilage:
 - Microbiological: molds, yeast, bacteria
 - Chemical: enzymatic changes
 - Physical: bruising, water loss



Canning = Preservation by Heat

- Destroys microorganisms
- Inactivates enzymes
- Seals container during the process to prevent recontamination

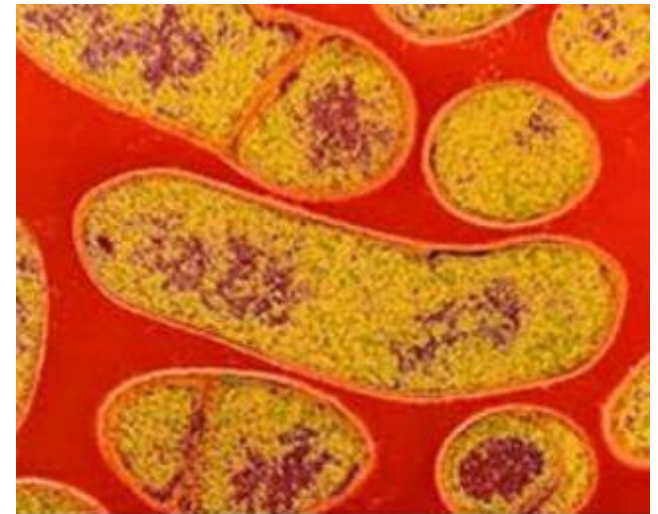
Microbiological Food Spoilage

- Microorganisms can get onto a food product from anywhere in the environment.
 - People, animals, dirt, insects, other surfaces
- **Spoilage microorganisms:** cause food to “go bad”
 - NOT pathogenic
- **Pathogens:** make you sick



Clostridium botulinum (botulism)

- Neurotoxin ingested through food.
- Causes paralysis and death without quick medical attention.
- Very rare in U.S.
- Primarily associated with improper home canning.



Clostridium botulinum

Major Issue: Botulism

- Low-acid canned foods are the perfect environment for botulism toxin.
 - Anerobic (no oxygen)
 - Available food and water
 - pH above 4.6
 - Temperature in the “danger zone” for extended period of time
- Must be pressure canned to reach 240°F.

High-acid vs. Low-acid Foods

High-acid (pH less than 4.6)		Low-acid (pH greater than 4.6)	
Apples	Peaches	Asparagus	Milk
Apricots	Pears	Beans	Mushrooms
Applesauce	Pickles	Beets	Peas
Berries	Plums	Carrots	Potatoes
Cherries	Rhubarb	Corn	Pumpkin
Jams, jellies	Sauerkraut	Hominy	Seafood
Fruit Juices	Tomatoes	Meats	Squash

What type of canner?

- Low-acid foods:
 - pH >4.6
 - Pressure canner
- High-acid foods:
 - pH <4.6
 - Boiling water bath
- Acidified foods:
 - pH is decreased to <4.6 by adding acid
 - Pickling, salsas, **tomatoes**
 - Boiling water bath



IMPORTANT!

- Always use a recipe from a reputable source!
- Begin with clean hands and work area.
- Processing times aren't estimates so have a timer handy.
- Keep an extra pot of boiling water on the stove if you need to top up the canner.

Methods NOT Recommended

- Open-kettle canning
- Conventional oven, microwave, or dishwasher
- Steam canners
- Canning at pressures greater than 15
- Use of plastic, glass, or one-piece zinc/porcelain-lined caps
 - Failure to seal properly



Recent Updates

- Summer squash, including zucchini, has been removed.
- Tomato product acidity is not uniform:
 - Assume tomato foods are low-acid.
 - Pints: 1 Tbsp bottled lemon juice or 1/4 tsp citric acid
 - Quarts: 2 Tbsp bottled lemon juice or 1/2 tsp citric acid
 - Acid should be added directly to each jar before filling.
 - Vinegar may also be used.
 - Also assume figs and Asian pears are low-acid.

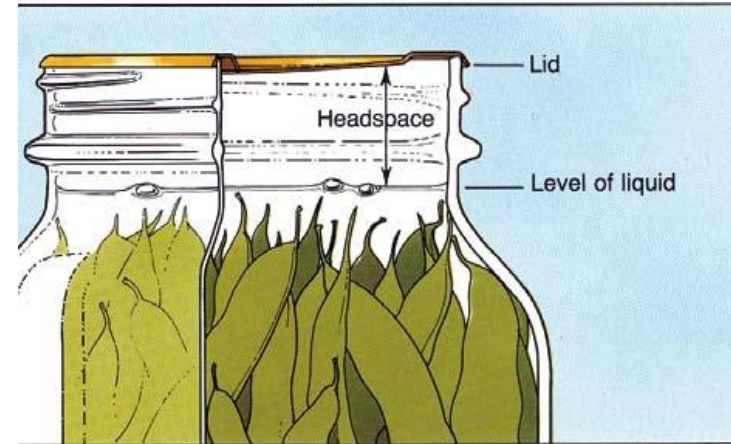
Recent Updates

- Larger ½ gallon and gallon jars are mainly decorative.
 - ½ gallon: follow recipe for apple and grape juices.
- Ball®/Kerr® brand lids:
 - BPA free
 - Do not need to be preheated/soaked like they used to be.



Headspace

- Jams, jellies: $\frac{1}{4}$ inch
- Fruits, tomatoes: $\frac{1}{2}$ inch
- Low-acid: 1-1 $\frac{1}{4}$ inch
- Needed for expansion of the food.
 - Higher the temperature, the greater the expansion.
- Forms vacuum in cooling jars.



Equipment and Preparation

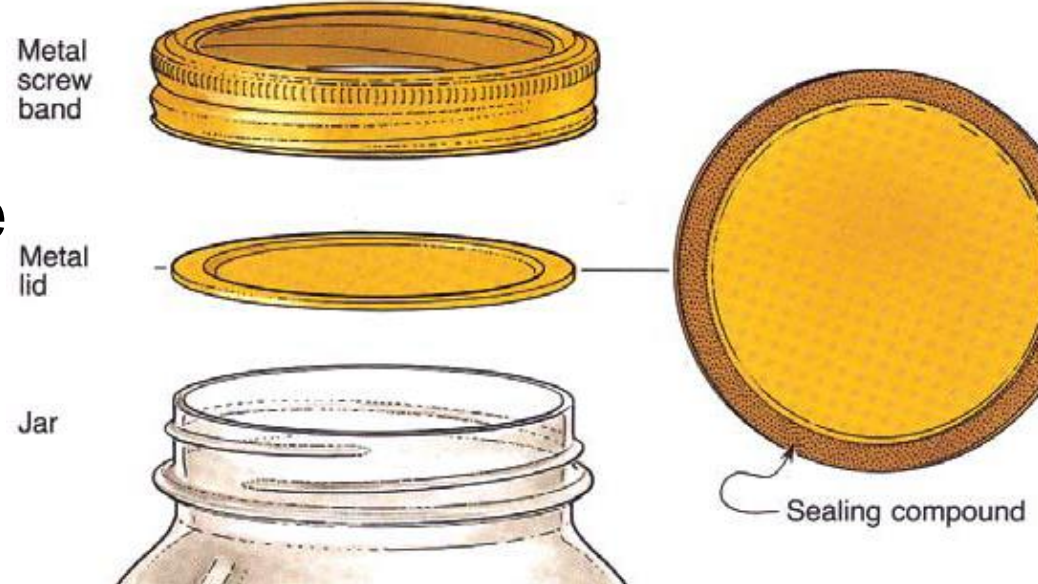
- Reliable recipe.
- Canner with rack.
- Mason-type jars with lids and bands.
- Funnel, bubble wand or rubber spatula, headspace tool or ruler, jar lifter, and timer.



- Quality produce.
- Clean workspace.
- Several hours.

Jars and Lids

- Use only mason-type jars.
- Do not re-use commercial jars.
- Check for cracks, chips, and knicks.
- Jars and screw-bands can be reused; lids cannot.



- Metal screw-band and lid are the only type recommended by the USDA.

Closing Jars

1. Pack food.
2. Remove air bubbles.
3. Check headspace.
4. Wipe rim.
5. Assemble lid and close.
6. Remove band after processing and cooling.



After Processing

- Lift jars vertically from the canner using a jar lifter. Place on cloth towel or wooden cutting board.
- Allow jars to cool naturally for 12-24 hours.
- Check the seal. If failed:
 - Reprocess (24 hours)
 - Refrigerate (2-3 days)
 - Freeze (2-3 months).
- Remove bands. Wipe or wash jars.
- Label, showing contents, use-by date, and batch number.
- Store in a cool, dark place 50-70°F. Use within 1 year.
- Check for signs of spoilage before serving. Refrigerate after opening.

Where to Buy Items?

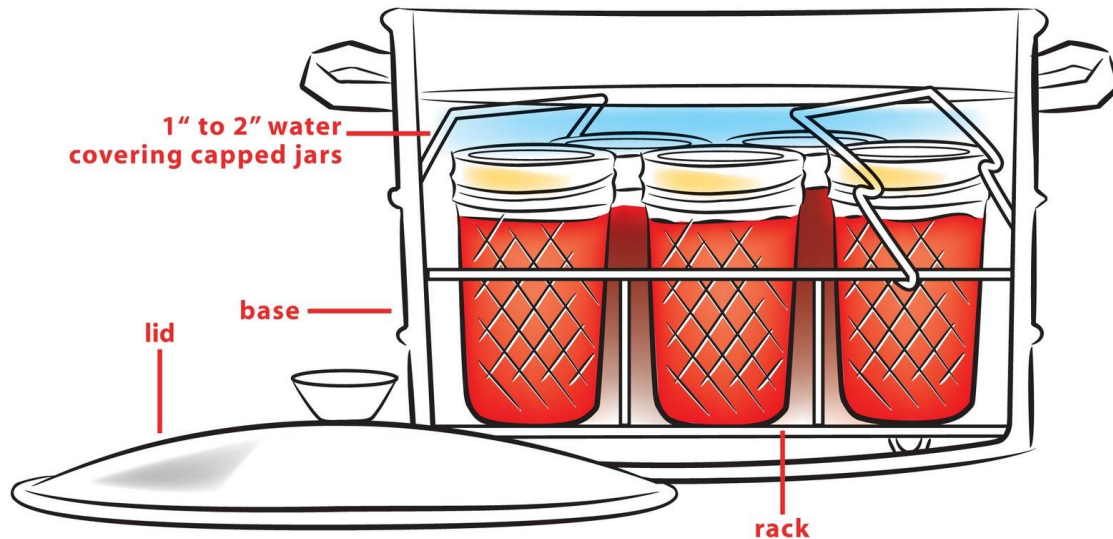


BOILING WATER BATH CANNING



Boiling Water Bath Canning

- Large covered cooking pot with a rack.
- Deep enough to cover 1 inch above jars.
- Boiling temperature (212°F) destroys spoilage microorganisms.



Boiling Water Bath Canning

- Insert rack and preheat water.
 - 140°F for raw pack
 - 180°F for hot pack
- Load sealed jars with lifter, adding more water if needed. Cover, and turn stove to high.
- Start timing when water comes to a rapid boil.
- Turn off heat, remove lid, and wait 5 minutes. Remove jars with lifter.



Fruit Browning and Ascorbic Acid

- Soak fruits in ascorbic acid (vitamin C) bath while preparing jars.
 - Prevent browning
- Apples, pears, nectarines, apricots, peaches, etc.
- Pure powdered form
- Vitamin C tablets
- Commercial mixes



Jams and Jellies

- Ingredients: fruit, pectin, acid, and sugar
- Pectin forms a gel with the right combination of acid and sugar.
 - All fruits contain some pectin
 - Fully-ripened fruit has less pectin
 - When not adding pectin, $\frac{1}{4}$ fruit should be under-ripe.
- No substitution for Clear Jel®.









QUESTIONS?



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FREEZING

Advantages

- Retains natural color, flavor, and nutritive value.
- Compared with other methods of preservation:
 - Better texture
 - Less processing time

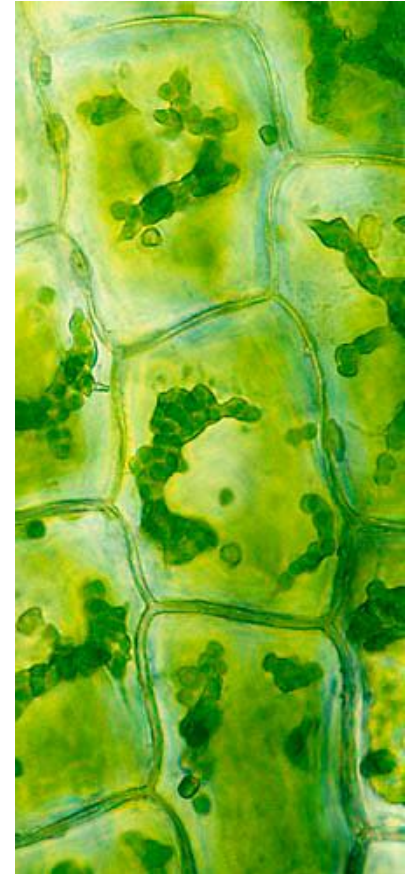
Disadvantages

- Texture changes
- Energy cost and space
- Pathogens can survive.



Enzymes in plants are:

- Slowed down (not destroyed) during freezing.
- Controlled to prevent color changes and nutrient loss.
 - Vegetables: blanch
 - Fruits: ascorbic acid (vitamin C)



Texture changes

- Water in food freezes and expands.
- Ice crystals rupture cell walls.
- Vegetables with very high water content do not freeze well: celery, lettuce, some tomatoes.



Containers for freezing

- Thick freezer bags
 - Remove air before closing.
 - Consider vacuum-sealers.
- Rigid, straight-sided
 - Choose glass or sturdy plastic.
 - Use tight-fitting lids.
 - Allow room for liquid expansion.



QUESTIONS?



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Herbs

- Best time to harvest most herbs:
 - just before the flowers first open
 - in the early morning after the dew has evaporated to minimize wilting.
 - Avoid bruising the leaves. They should not lie in the sun or unattended after harvesting.
 - Rinse herbs in cool water and gently shake to remove excess moisture.
 - Discard all bruised, soiled, imperfect, or dead leaves and stems.

Herbs

- *Air Drying:*
 - Expose the leaves, flowers or seeds to warm, dry air. Leave the herbs in a well ventilated area until the moisture evaporates.
 - Make small bunches of herbs. Tie stems together.
 - Hang in a temperate, well-ventilated, darkened room with little dust.
 - Dry in up to 2 weeks
 - Label herbs
 - For tender herbs- can dry in paper bags
 - Vent with holes to prevent mold
 - Small bunches

Herbs

- *Oven:*
 - Remove and spread leaves in a single layer on cookie sheets or foil
- *Drying Tray:*
 - Best to use trays made of window screening for maximum air circulation.
- *Microwave:*
 - Place on paper towel and cover with a second sheet
 - On high 1-3 minutes then let cool

Herbs

- *How to Know if They're Actually Dry?*
 - Crumble when rubbed between your hands
 - Test:
 - Fill a small glass container with the herb and seal it.
 - Put into a hot oven for ~15 minutes or microwave for ~5 minutes.
 - Check for condensation on the inside of the jar.
 - If there is moisture present, let the rest of the herbs dry more.
 - Dry in oven at 110F or lower

Herbs

- Store:
 - Dry, whole leaves in airtight containers
 - Cool to temperate location, out of direct sunlight
- Freezing
 - In oil
 - In water
 - flat
- When cooking: use less amount of dried herbs than fresh
 - 1 tablespoon of finely cut fresh herbs =
 - 1 teaspoon of crumbled dried herbs =
 - 1/4 to 1/2 teaspoon of ground dried herbs

Herbs

- *Flavored Butters & Creams*
 - From University of Delaware Extension:
 - One stick unsalted butter or margarine
 - 1 to 3 tablespoons dried herbs or 2 to 6 tablespoons fresh herbs (any herb or spice may be used)
 - 1/2 teaspoon lemon juice; and white pepper.
 - Combine ingredients and mix until fluffy.
 - Pack in covered container and let set at least one hour.
- <https://www.udel.edu/academics/colleges/canr/cooperative-extension/fact-sheets/herbs-spices-on-food/>

Home Food Preservation Virtual Class

HOME FOOD PRESERVATION

VIRTUAL PROGRAM

More people than ever are growing their own food at home. This self-paced virtual course will teach you how to safely preserve your fresh foods for year-round enjoyment using techniques such as canning, freezing, dehydration and fermentation.

You'll learn the science behind these techniques and receive step by step guidance on how to do them at home. After registering, you can complete the course at your own pace until December 31.

For more info and to register, go to:
<https://bit.ly/2MrcY8G>

Enroll

starting July 17.
Registration deadline
October 15, 2020



Course fee

\$15

If you have any questions,
please contact Dr. Renee
Boyer at rrboyer@vt.edu.

Enter Your County Fair!

- *Arlington County Fair Competitive Exhibits*
 - <https://www.arlingtoncountyfair.us/participants/#competitive-exhibits>



Donate Extra Produce



Plot Against Hunger Produce Bagging Center

- Rock Spring Church, 5010 Little Falls Road, Arlington.
- Mondays and Thursdays from 1-3 pm from August to October.
- Gardeners can drop off their fresh produce to be bagged and donated to local food pantries.
- Or donate directly to pantries.

<https://arlingtonurbanag.org/plot-against-hunger/>

Reliable Resources

- *So Easy to Preserve*, National Center for Home Food Preservation
 - <https://www.fcs.uga.edu/extension/so-easy-to-preserve>
 - nchfp.uga.edu
- *USDA Complete Guide to Home Canning*
- Ball® *Blue Book* and website
 - ballmasonjars.com
- Canner manuals

Reliable Resources

- Virginia Cooperative Extension Food Preservation Resources
 - <http://pubs.ext.vt.edu/category/food-preservation.html>
 - Quick Pickling
 - <https://extension.psu.edu/lets-preserve-quick-process-pickles>
 - Herb Culture and Use
 - https://www.pubs.ext.vt.edu/content/dam/pubs_ext_vt_edu/426/426-420/426-420.pdf
 - Freezing Fruits & Vegetables
 - https://www.pubs.ext.vt.edu/content/pubs_ext_vt_edu/en/348/348-596/348-596.html
- Drying Herbs
 - <https://blogs.extension.iastate.edu/answerline/2014/09/22/drying-herbs/>