

# Preserving Red Chile

## CANNING RED CHILE SAFELY QUALITY, METHODS & SAFETY ESSENTIALS

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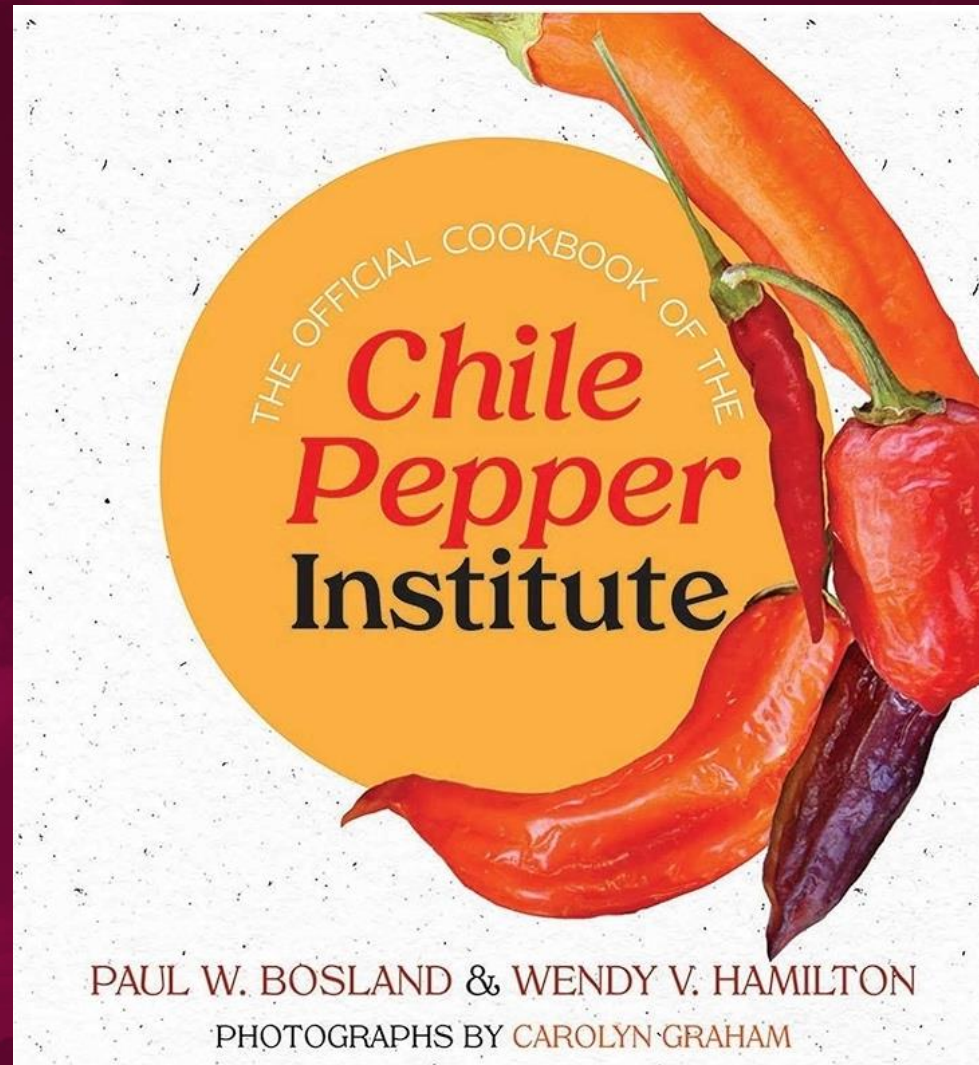
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**New Mexico State University**

# Week One Drawing!

OUR WINNER IS....



**BE BOLD.** Shape the Future.®





# Pre Poll



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# Resources

- USDA Complete Guide to Home Canning
- National Center for Home Food Preservation – University of Georgia
- Cooperative Extension Nationwide Publications
- NMSU Publication E-327: Using Chile to Make Ristras and Chile Sauce
- So Easy to Preserve – 6th Edition UGA
- NMSU Publication E-323: Salsa Recipes for Canning
- NMSU Publication E-307: Home Canning of Vegetables
- National Center for Home Food Preservation: Pepper Substitutions
- National Center for Home Food Preservation: Template for USDA Choice Salsa
- YouTube Video: Can Red Chile Sauce Be Safely Canned at Home



# Objectives

- Understanding if red chile and red chile sauce are safe to can at home
- Clostridium botulinum – what we know about home canning safety
- Balancing safety vs. quality of canning red chile sauce
- Differences between commercial and home canning
- Future of developing a safe and delicious science-based NM red chile sauce recipe

# Is Red Chile Safe to Can?

IS RED CHILE SAUCE SAFE TO CAN?



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# A Chile is A Chile is A Chile – is A Chile

- The pH of New Mexico chile once it turns red is actually lower than when it is green
  - Red closer to 4.6 pH, Green closer to 5.0 pH (it varies)
- The National Center for Home Food Preservation (NCHFP) allows us to substitute equal size, quantity, and preparation chile peppers in recipes
  - Meaning, if a recipe calls for 3 tablespoons diced habanero peppers I can substitute 3 tablespoons serrano peppers in the same recipe
  - OR if a recipe calls for ¼ cup peeled, seeded, roasted chopped poblano peppers I can substitute ¼ cup peeled, seeded, roasted chopped New Mexico green chile pepper
- For example, New Mexico publication E-308 Canning Green Chile calls for blistering and removing skins – in theory – if you could get the skins off NM red chile, you could can them according to the provided recipe using a pressure canner or acidifying them or in another salsa recipe



# Is Red Chile Sauce Safe to Can?

- What is the pH of the red chile sauce?
- What is a safe pH to can using a boiling water bath canner?
  - Why?
  - What foods must be canned using a pressure canner?

## CLOSTRIDIUM BOTULINUM

# C. BOT, Botulism, Clostridium Botulinum



# Botulism – What Do We Know?

- Neurotoxin, neuromuscular syndrome
- Botox!
- No smell, taste, or visibility to naked eye
- When linked to food, commonly associated with improperly canned home goods
- Thrives in anaerobic conditions at 38°F - 113°F
- CDC considers rare, but serious and one of most potent lethal substances known
  - *May 2025 – GA, 2 cases of improperly canned potatoes and sausage*
  - *June 2024 – CA, 8 cases linked to improperly canned Prickly Pear Cactus (nopales)*
  - *Sep 2023 – France, 1 death, 10 hospitalizations, improperly canned sardines*
  - *June 2021 – AZ, improperly canned beans*
  - *Oct 2020 AZ, improperly canned green chile*

## C. BOT

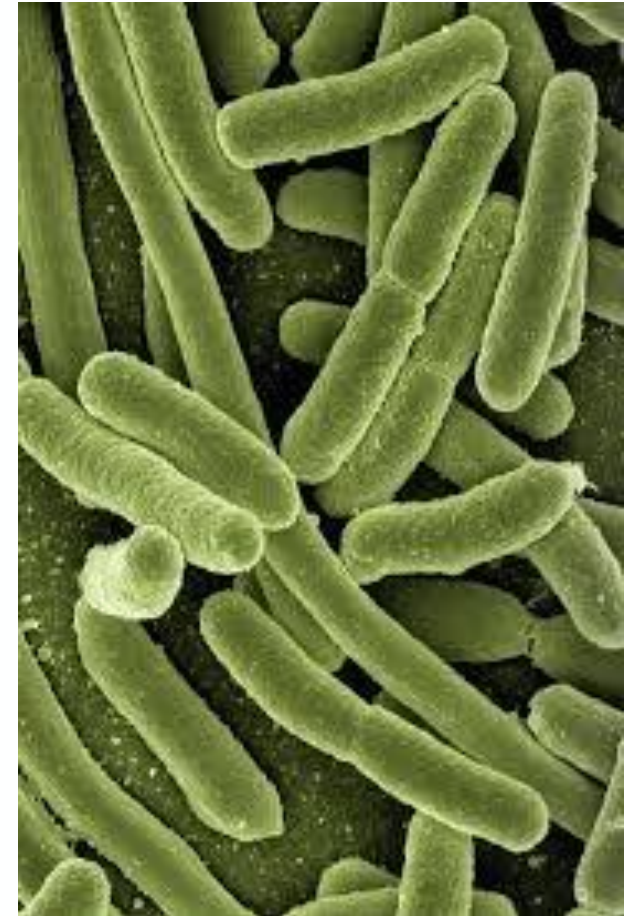
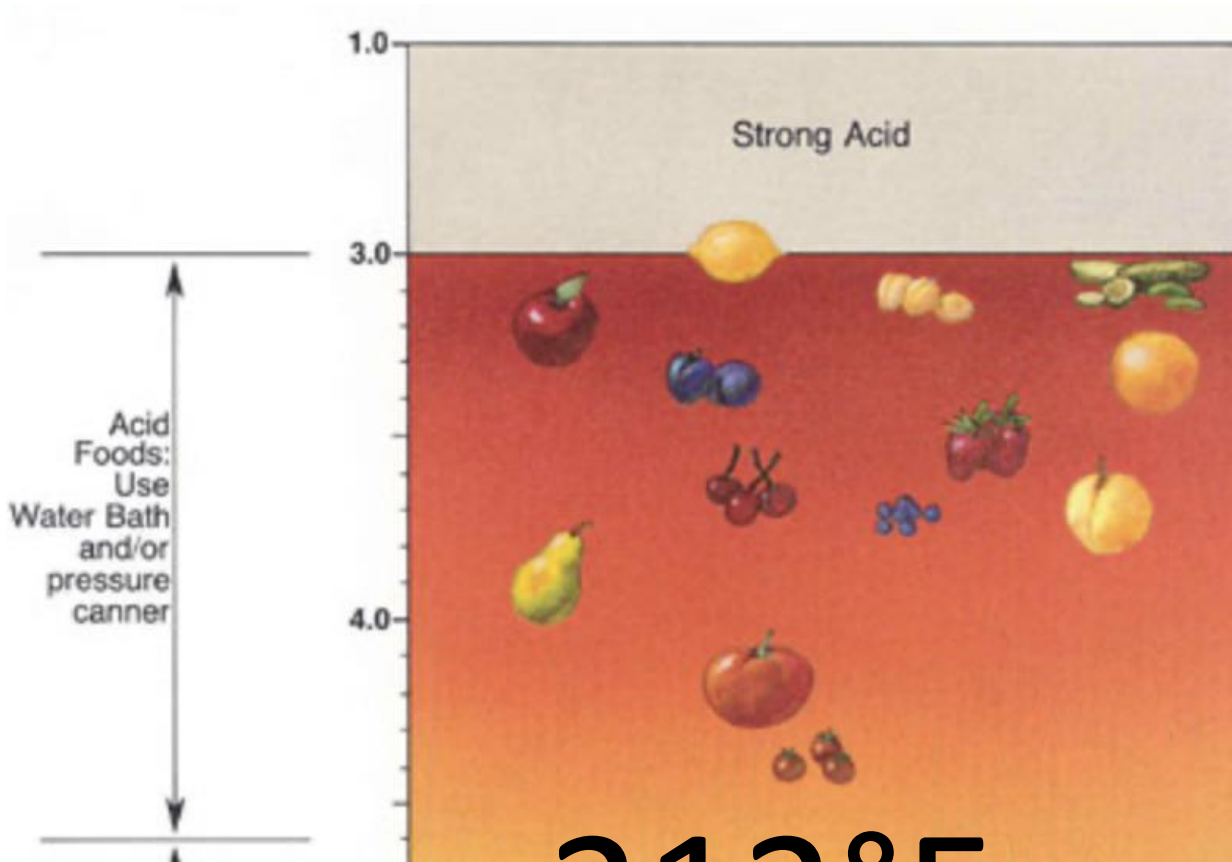
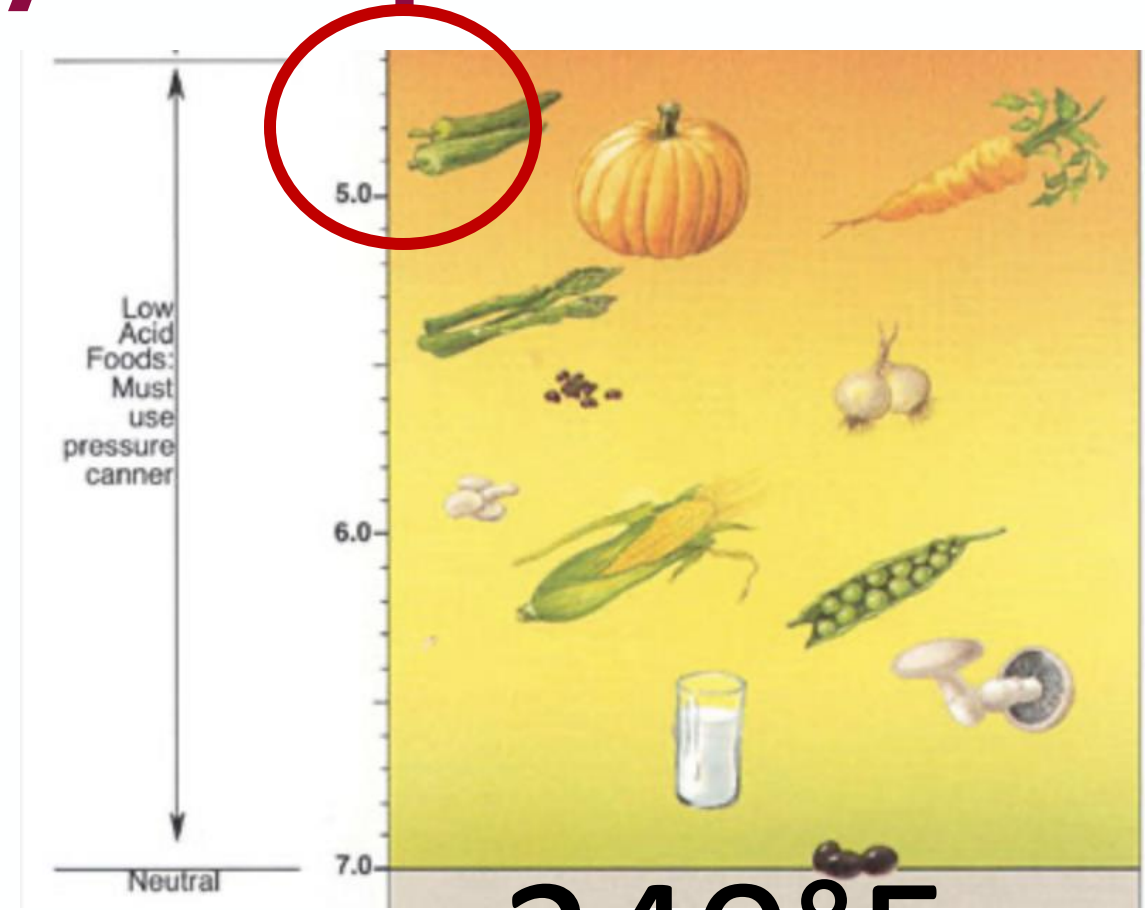


Image: Penn State Extension

# Let's talk about acidity – 4.6 pH



212°F



240°F



# Balancing Safety Versus Quality of Canning Red Chile Sauce



# Let's talk about acidity – 4.6 pH

- If the safety threshold for botulism is 4.6, what pH does the red chile sauce need to be?
  - To use a boiling water bath canner, a pH of 4.0 needs to be achieved according to Dr. Flores – does this parameter still meet the safety requirements of today's industry standard?
    - How to achieve a 4.0 pH?
      - Vinegar
      - Tomato juice
      - Lemon or lime juice
    - Acidification caused bitterness and an undesirable flavor as well as changed the color
  - OR a pressure canner must be used for 26 minutes at a PSI of 15 (alt. depnd)
    - Pressure canning overcooked the sauce and changed the color and caused separation
      - Low quality and focus groups determined these as undesirable

# Post Poll



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# Differences Between Commercial and Home Canning Red Chile Sauce





# Home Canning versus Commercial Processing

- Water Activity
- Acidity and pH
- Thermal Treatment
- Ingredients and Process
- Scheduled Process, Container Size/Shape
- Retort & Aseptic Operating Procedure
  - Closed, pressurized vessel >250°F. Hermetically sealed, sterile foods packaging, sometimes at 25-35 psig.
- Process Authority – Process Review



# **Future of Developing Research Based NM Red Chile Sauce Home Canning Recipe**



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**Questions?  
Next week..  
Dehydrating...  
Red Chile Beef Jerky!**

# Evaluation



Anonymous link available in chat.



# Thank You!



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