

**N**  
EXTENSION

**WELCOME  
TO  
UNIVERSITY OF NEBRASKA  
FOOD PRESERVATION  
VIRTUAL SERIES**

Moderator: Carol Larvick

1

**N**  
EXTENSION

**Do you know?**

**Home  
Food Preservation  
Virtual Learning Series**

Join Nebraska Extension for the 2021 Canning Season  
7:00pm CT - Free Zoom Classes

Wed, April 14 - Canning 101  
Tues, May 11 - Jams & Jellies  
Thu, June 10 - Canning 101  
Wed, June 23 - Pickles & Relishes  
Thu, July 8 - Tomatoes  
Tues, July 13 - Salsa

**N**  
EXTENSION  
#UNLFoodSafety

Get your questions answered!

Register At:  
[go.unl.edu/homefoodpreservation](http://go.unl.edu/homefoodpreservation)

2

**N**  
EXTENSION

**FOOD  
PRESERVATION  
TEAM**

Carla Wells  
Hall  
308-385-5088  
[cwells@unl.edu](mailto:cwells@unl.edu)

Nancy Urbanec  
Douglas-Sarpy  
402-444-3668  
[nurbanec1@unl.edu](mailto:nurbanec1@unl.edu)

Carol Schwarz  
Buffalo  
308-236-1235  
[cschwarz2@unl.edu](mailto:cschwarz2@unl.edu)

Carol Larvick  
Dakota, Dixon, Thurston  
402-987-2140  
[clarvick1@unl.edu](mailto:clarvick1@unl.edu)

Georgia Jones  
UNL  
Nutrition Department  
[gjones@unl.edu](mailto:gjones@unl.edu)

Nancy Frecks  
Hitchcock, Dundy, Hayes  
308-334-5666  
[nfrecks1@unl.edu](mailto:nfrecks1@unl.edu)

Cindy Brisson  
Douglas-Sarpy  
402-444-7872  
[cbrisson1@unl.edu](mailto:cbrisson1@unl.edu)

Brenda Aufdenkamp  
Lincoln-Logan-McPherson,  
Keith-Arthur-Biaine, Grant,  
Hooker, Thomas, Perkins  
308-532-2683  
[baufdenkam1@unl.edu](mailto:baufdenkam1@unl.edu)

3

**N**  
EXTENSION

**CANNING 101**

**Presenters:**  
Georgia Jones, Extension Food Specialist  
Carol Larvick, Extension Educator  
Nancy Urbanec, Extension Assistant

4

**N**  
EXTENSION

**Canning**

- A method of food preservation
- Food is sealed in a container and subjected to high temperatures to destroy microorganisms that cause spoilage.
  - Home food preservation is glass only.
  - The food industry cans in glass or metal.

5

**N**  
EXTENSION

**Canning -  
A Two Step Process**

- Food is first packed into a jar.
- A lid and ring (band) are put on before canning.
- Containers are canned, that is, heated to ensure that microorganisms are destroyed.

6

**N**  
EXTENSION

## Basic Steps

- Gather supplies
- Read recipe
- Produce – should be fresh and best quality possible
- Wash hands, countertop and equipment
- Wash jars and keep warm (dishwasher, canner, sink of hot water)



7

**N**  
EXTENSION

## Jars, Rings, and Lids

- Canning jars are designed to be reused. If jars are chipped, do not use.
- Commercial jars, such as pickle, spaghetti sauce, are not meant to be reused. If used, they may not form a seal.
- Rings can be reused. Discard rings when they become rusty.
- Lids are flat metal discs with a rubber gasket around the outer edge. Rubber allows the lid to form a seal. Purchase new lids each year. *Use lids once and discard.*



8

**N**  
EXTENSION

## Preparing Food For Canning

- **Raw Pack**  
– Food is placed directly into clean jars and hot liquid is added.
- **Hot Pack**  
– Raw food is boiled 3 to 5 minutes in syrup, juice, or water prior to being poured into a clean jar.  
– This initial heating removes air, allows more food to be placed into the jar, and reduces heating time.
- **Both Methods**  
– Air bubbles need to be removed before placing lid on jar




9

**N**  
EXTENSION

## Headspace

- The space between the top of the food and bottom of the lid.
- Required to pull a vacuum and form a seal.
- The amount of headspace is determined by the type of food.



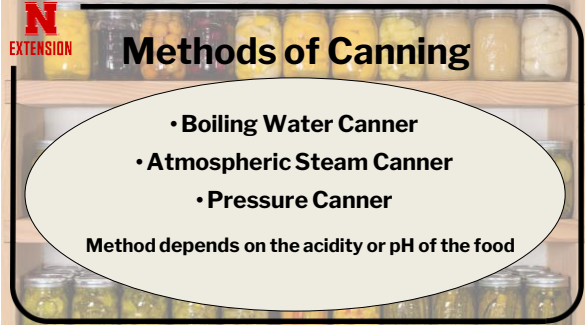
10

**N**  
EXTENSION

## Methods of Canning

- Boiling Water Canner
- Atmospheric Steam Canner
- Pressure Canner

Method depends on the acidity or pH of the food




11

**N**  
EXTENSION

## Boiling Water and Atmospheric Steam Canner

- Boiling Water Canner – process at the boiling point of water at your elevation
- Atmospheric Steam Canner – can be used for all foods canned in a boiling water canner if the processing time is 45 minutes or less





12

**N**  
EXTENSION

## Pressure Canner

- Achieves a higher temperature.
- Can be dial or weighted gauge.

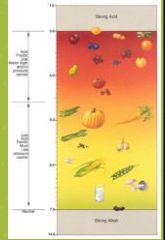
- Used for low acid foods, such as, vegetables and meat

13

**N**  
EXTENSION

## Acidity

- Acidity is measured on a pH scale.
- High acid foods, such as pickles, fall below pH 4.6 and are safe to process in a boiling water canner.
- Acid foods fall between pH 3.0 and 4.6.
- Low acid foods, such as meat and vegetables are above pH 4.6 and must be processed in a pressure canner.
- Canning low acid foods in a pressure canner will destroy *Clostridium botulinum* spores.



14

**N**  
EXTENSION

## *Clostridium botulinum* spores


- ✓ Can survive for hours at boiling water temperatures.
- ✓ Do not grow in acidic foods.
- ✓ *Clostridium botulinum* spores can survive in low acid foods.
- ✓ A pressure canner reaches the temperature required to destroy *Clostridium botulinum* spores.

15

**N**  
EXTENSION

## Tomatoes

- ✓ To ensure tomatoes are acidic enough to process an acid must be added.
- ✓ Bottled lemon juice, vinegar or citric acid will work.



16

**N**  
EXTENSION

## Finger Tight

- \* The amount of tightness needed to safely secure the lid and metal band onto a canning jar.
- \* The band should be screwed down evenly and firmly over the lid, just until resistance is met.
- \* If band is too tight, air cannot escape, and jars may not seal properly.



17

**N**  
EXTENSION

## Vacuum Seal:


Needed to prevent air and microorganisms from entering a closed jar

- How is a vacuum seal created
  - The lid and band are applied, pressure inside and outside the jar are equal.
  - When heated, air and food inside jar expand, leading to a build-up of pressure inside jar.
  - Pressure is released as air from the headspace escapes under the lid.
  - As the jar cools after processing, the contents shrink, and a partial vacuum is formed.
  - The sealing compound under the lid forms around the top of the jar and prevents air from re-entering.
  - When the seal forms, the lid will curve towards the jar.

18

**N EXTENSION** **Removing Jars from Canner**

- Follow the instructions for the processing method.
- Remove jars by lifting straight up. You do not want liquid or food to get under lid.
- Place jars on a towel or cooling rack, away from drafts and cool breezes. To allow the seal to form, do not move for 24 hours.
- Do not tighten the lid. This may break the seal.



19

**N EXTENSION** **How to Choose a Recipe**

Canning extends the shelf life at room temperature

Choose recipes that are tested for safety


- Not all canning recipes are tested for safety

Do not change a recipe

- When you alter ingredients, you may alter the properties that make it safe to can, including acidity and thickness

20

**N EXTENSION** **Elevation**



Map was prepared by Les Howard, Cartographer, UNL, School of Natural Resources

21

**N EXTENSION** **Storage**

- Remove ring
- Wash lid and jar to remove residue
- Label and date
- Store in clean, cool, dry and dark location
- Best used within a year

22

**N EXTENSION** **Resources**

- National Center for Home Food Preservation - <https://nchfp.uga.edu/>
- Nebraska Food Website - <https://go.unl.edu/foodpreservation>
- Your County Extension Office

23

**N EXTENSION**

*If you never ask, the answer remains unknown.*

**Questions ???**

The University of Nebraska does not discriminate based on race, color, ethnicity, national origin, sex, pregnancy, sexual orientation, gender identity, religion, disability, age, genetic information, veteran status, marital status, and/or political affiliation in its programs, activities, or employment.

24



25



26