

Preserving Safe, High Quality Meat



Lunch & Learn
12 noon to 1 pm
October 6, 2014

^{LW}Extension
Cooperative Extension

Resources

- How Do I... www.uga.edu/nchfp
 - **Can** Poultry, Red Meats and Seafoods
 - **Dry** Jerky
 - **Freeze** Fish, Meat, Poultry
- UWEX Food Safety: A-Z index J=Jerky www.foodsafety.wisc.edu
 - Instructions for Making Safe Jerky at Home
 - Making Safe Jerky in a Home Dehydrator
 - Preparing Safer Jerky
- UWEX: Canning Meat, Wild Game, Poultry and Fish Safely (B3345) <http://fyi.uwex.edu/safepreserving/recipes/>



Start with Quality Meats



- **Preserve** only those meats that have been handled under sanitary conditions, including wild game
 - So You Got a Deer
www.uwex.edu/ces/ag/issues/fmd/So_you_got_a_deer-G1598.pdf
 - Safe Deer Processing (videos)
<http://www.cwd-info.org/index.php/fuseaction/about.video>
 - Handling Venison Safely (A-Z index H=Hunting)
- Best quality will be achieved with lean meat, poultry, and fish
- Handle meat, poultry and fish to avoid contamination with pathogens....and avoid contaminating other foods with meat juices!

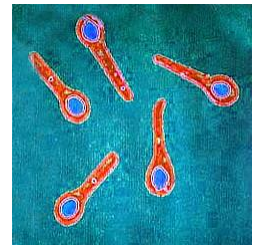
Preserving Beef and Venison



- **Handle venison safely** to prevent contamination
 - Consult DNR resources for current information on Chronic Wasting Disease (CWD)
 - dnr.wi.gov/topic/wildlifehabitat/regulations.html
- Choose lean meat that is fresh and has been kept cold
- Meat may be frozen, canned, or dried
 - Avoid **freezing** meat in grocery store tray-pack
 - Repackage using packaging suitable for the freezer: freezer paper, aluminum foil, freezer bags, or a combination
 - Debone meat for easier freezing and thawing
 - Freeze lean meats for up to 12 months, cured meats or fatty cuts of meat for up to 3 months



Canning Meat



Cells and spores of *C. botulinum*

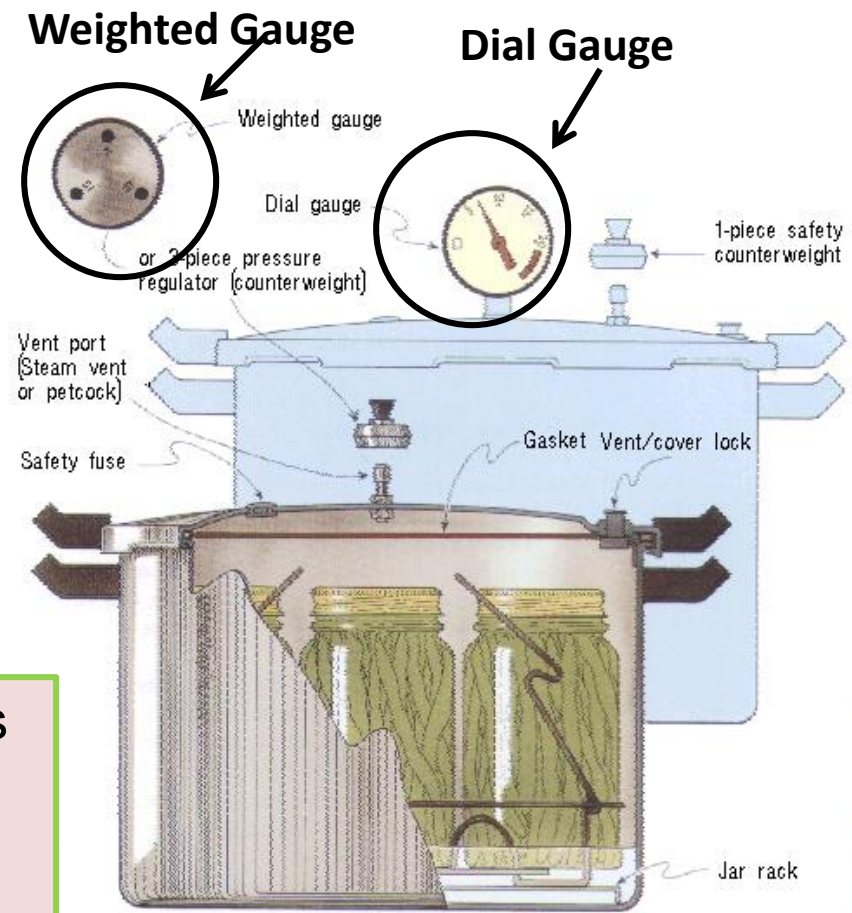
- Meat and other low-acid foods must be canned in a **pressure canner** to avoid botulism poisoning
- Spores of *Clostridium botulinum* can **germinate, grow, and produce toxin** when the conditions are right
 - Botulism toxin is one of the deadliest toxins known
 - Meat and other low-acid foods may contain the toxin without looking spoiled
- A **pressure canner** uses high temperature to destroy botulinum spores.
 - Oven canning, boiling water canning, and dishwasher canning of meat is **very unsafe!**



Pressure Canning

- Process at high temperatures (240°F and above)
- **Dial gauge** measures incremental changes in pressure
- **Weighted gauge** measures pressure at 5,10, or 15 pounds (psi)

The pressure in these canners raises the temperature above the boiling point of water and allows safe processing of low-acid foods.



Steps for Pressure Canning

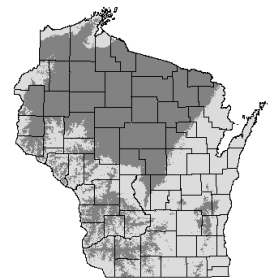


- Place filled jars on a rack in a pressure canner filled with ~2 quarts of water
- Seal canner by tightening lid, turn heat on high, and once a full column of steam is produced, **vent for 10 minutes**
- After venting, close vent port and bring canner to pressure
 - 11 psi dial gauge
 - 10 or 15 psi weighted gauge
- Process for the required time
- Turn heat off and allow to canner to cool naturally
 - NEVER force cool a canner

Canning Meat

- Safe canning times for meat:
 - Allow heat to penetrate to the cold spot in the jar and throughout the food
 - Reach temperatures needed to destroy harmful bacteria and spores
- Trim meat of fat, bruises and heavy gristle
- Use only the jar size and packing style listed
 - Consider canning venison in tomato-juice
- Process for the time listed; adjust for elevation

The darker areas of the state indicate elevations above 1,000 feet. Increase processing pressure from 10 psi to 15 psi for a weighted gauge canner. Process in a dial gauge canner at 11 psi.



Hot Pack or Raw Pack? (same processing time)

Hot Pack

- Meat roasted or browned prior to packing into jars
- Allows:
 - More meat in jars
 - Good color
 - Added flavor

Raw Pack

- Raw meat loosely packed in jars – no added liquid
- Quick & easy to do

NOTE: the long processing times for meat ALLOW you to add a bit of onion, garlic or seasoning and still have a safe recipe

Left:
Beef hot packed



Right:
Beef raw packed

Image courtesy of Chris Kniep, Winnebago County

Poultry, Rabbit & Small Game



- Carefully skin and dress wild game and game birds.
- Remove fat, especially excess fat, on poultry and game – it quickly becomes rancid on freezing and interferes with canning.
- Do not stuff poultry or game birds prior to freezing.
- For best flavor, soak small game in brine prior to canning.
- Can poultry and small game with or without bones.

Hot Pack or Raw Pack?

(same processing time for pack method; longer processing time for bone-in poultry)

Hot Pack

- Bake until 2/3 done
- Added flavor from browning and broth

Raw Pack

- Pack raw chicken loosely in jars
- Quick & easy to do

Left:
Chicken hot
packed



Right:
Chicken raw
packed

Image courtesy of Chris Kniep, Winnebago County

Canning Meat Mixtures

Because of the long processing times for meat and poultry, many meat mixtures **may** be safely canned, using the processing times for meats.

- Follow a hot-pack procedure
- Mix meat with vegetables which require similar processing times
- Do **not** thicken or add pasta, rice, or fat. An unsafe product may result!



Freezing Fish

- Fish is highly perishable; store no more than 2 days.
- Fish caught should be kept on ice or in cold water. Clean and gut fish within 24 hours.
- Pre-treat prior to **freezing** to improve quality-
 - Dip fatty fish for 20 sec in ascorbic acid solution
 - Dip lean fish in salt brine
- Packaging
 - Lemon-gelatin glaze: dip cold fish in lemon juice/ water/gelatin dip
 - Ice glaze: dip frozen fish in near-freezing ice water
 - Water: create a fish ‘popsicle’

Freezing Fish

Freeze and store fish at 0°F or colder.

- Up to **3 months** for fatty fish.
 - Salmon, smelt, lake trout. The fat in these fish can oxidize and they can lose flavor if stored too long.
- Up to **6 months** for lean fish.
 - Perch, walleye, pan fish. Lean fish are better preserved frozen than canned.



Canning Fish



Species of fish suitable for canning include catfish, Northern pike, salmon, smelt and trout.

- Fish is usually canned in **pint jars**; extra care must be taken when canning in quart jars (smoked fish can only be canned in pints).
- Process $\frac{1}{2}$ -pints for the time listed for pints.
- Fish is a low-acid food and must be canned in a **pressure canner**.
- Fish are raw-packed prior to canning.
- The types of *C. botulinum* spores in water are hard to destroy. Fish is processed for 100 min (pints) or more!

Making Safe Jerky

Jerky can be made from beef, venison, pork or poultry.

- Pork or wild game for jerky should be treated to kill the trichinella parasite prior to jerky making:
 - Freeze at 0°F (or colder) for at least 30 days
- Partially freeze meat for easier slicing
 - Slice no more than ¼” thick
 - Trim and discard all fat
 - Marinade as desired
- Ground meat can be used to make jerky.
 - Use only lean/very lean meat of 10% fat or less.
 - Prepare strips no more than ¼” thick.
 - Add dry spices to meat for flavor.

Drying Jerky

- Blot marinated strips dry, and arrange on dehydrator racks or trays.
- Dry in a dehydrator, or oven, preheated to 145°F or higher.
 - Begin checking at 3 hours. Dried meat is firm but flexible. Meat should reach an internal temperature of 160°F or higher.
 - Blot off any beads of oil with a clean paper towel.
 - Cool and package. Store 2 weeks at room temperature, up to 3 months in the freezer.
 - A safety-assured product is made by adding a post-drying oven heating step: **10 min in a preheated 275°F oven**