Three Main Methods

- Freezing
- Dehydrating
- Canning
Freezing
Freezing

- Preserves freshness, flavor, texture and nutrients.
- Slows down enzyme activity.
- Retards growth of micro-organisms.
Preventing Discoloration Caused by Enzymes

- In fruits causes browning and loss of vitamin C.
- Pretreatment with ascorbic acid solution.
Blanching

- Most *vegetables* will need to be blanched, or briefly cooked before freezing.
- Prevents loss of color, flavor and nutrients.
- Destroys microorganisms on surface.
Packaging

- Airtight, moisture and vapor resistant.
- Durable and leak proof.
- Resistant to cracking and brittleness at low temperatures.
- Protect from off flavors and odors.
- Easy to seal and label.
Packaging

Good choices:
- sealable, rigid
- flexible plastic bags
- laminated freezer paper

Unsuitable:
- re-used plastic dairy containers
- waxed paper
- paper or cardboard cartons
Freezing Fruit

- Syrup pack – light to heavy
- Sugar pack – sugar sprinkled over fruit draws out juice
- Unsweetened – water, fruit juice or nonnutritive sweeteners
- Tray pack – best for small fruits and berries
Tray Pack

- Place small whole fruit, cut fruit or berries in a single layer on a shallow tray and freeze 4-6 hours; remove and place in container leaving no headspace.
Dehydrating
Dehydrating

- Preserves by removing moisture so that microorganisms cannot grow and spoil the food.

- Dehydrated foods take less storage space than frozen or canned.

- Flavors become much more concentrated.
Methods

- **Dehydrator** — control of warm temperature, low humidity and air circulation.

- **Oven** — may be successful depending on unit.

- **Sun/Solar** — *NOT RECOMMENDED.*
Pre-Treatment

- Pre-treating fruits with lemon juice or ascorbic acid solution and blanching vegetables helps maintain color and quality.
- Destroys microorganisms.
- Improves safety and quality throughout drying and storage.
How to Use

▶ Snacks – fruits, fruit leathers, zucchini chips
▶ Seasonings – herbs, onions
▶ Rehydrate – tomato sauce
▶ Jerkies – use CSU recommended methods for safety
Canning
Canning

- Foods placed in jars and heated to a temperature that destroys microorganisms and inactivates enzymes.
- Heating and later cooling forms a vacuum seal which prevents further spoilage during storage.
Two Methods of Canning - Depends on pH

- **Water Bath Canner**
  - Used with acid foods: 4.6 or lower.
  - Fruits, pickles, jams, jellies
  - Tomatoes need to be acidified

- **Pressure Canner**
  - Used for neutral or low acid >4.6
  - Meats, poultry, fish, milk, vegetables
Preventing Botulism

- Home Canned Foods
  - Spores won’t germinate in acid foods (pH < 4.6).
  - Spores are killed when heated long enough at a specific temperature.
  - USDA recommends 240°F at sea level for canned low-acid foods.
  - Pressure canner must be used for all low-acid foods.
Processes *NOT Recommended*

- Open kettle canning - temperatures obtained are not high enough to destroy all spoilage and food poisoning organisms that may be in the food.

- Paraffin or wax seals – allows mold to contaminate and grow into product; mycotoxins shown to cause cancer in animals.
Processes *NOT* Recommended

- Steam canners – processing times have not been adequately researched for safety in our elevation.
- Oven, microwave, dishwasher processing – do not prevent risks of spoilage organisms.
- Glass and zinc caps used with flat rubber rings – often fail to seal properly.
Getting Started

1. Review tested recipe and instructions
2. Plan time for canning
3. Select fresh ingredients
4. Assemble equipment
1. Review Tested Recipes and Instructions

- Select only up-to-date tested recipes!
- Get instructions from reliable source.
- Use caution – there is a lot of misinformation on the internet as well as untested and potentially unsafe recommendations.
2. Plan Time for Canning

- Estimate time required for your canning project:
  - Uninterrupted time required for preparation, waiting for water to boil, processing and cool down can be several hours

- Canning takes more time and energy than other preservation methods

- Time spent planning and preparing will make canning day go more smoothly and more enjoyable
3. Select Fresh Ingredients

- Can fruits and vegetables at peak of quality – within hours of harvest.
- Rinse fruits and vegetables – don’t soak. Peel if appropriate.
- Fresh meat and poultry from healthy animals should be chilled and canned immediately.
- Ice seafood after harvest and can within two days.
4. Assemble Equipment

- Pressure canner
- Water bath canner or large pot with lid
- Jars and lids
- Jar lifter
- Lid wand
- Bubble freer
- Funnel
- Timer
Altitude Adjustment for Water Bath Canning

Increase the processing time:

- Processing time at sea level minutes or less:
  - Increase the processing time 1 minute for each 1,000 feet above sea level

- Processing time at sea level more than 20 minutes:
  - Increase by 2 minutes per 1,000 feet
Altitude Adjustment for Pressure Canning

• Dial Gauge Canners:
  – At sea level use 10 lbs. psi and at altitude increase psi by ½ lb. for every 1,000 ft. e.g. 12 ½ lbs. at 5,000 ft.

• Weighted Gauge Canners:
  – Use the 15 lb. weight for all altitudes above 1,000 ft.
Food Preservation Resources

- CSU Extension Website - publications
- Ball Blue Book, Complete Book of Preserving (1994 or current)
- So Easy to Preserve
- National Center for Home Food Preservation: [www.uga.edu/nchfp](http://www.uga.edu/nchfp)
- Preserve Smart – phone app
Questions????

Mary Snow, Family & Consumer Sciences Agent, Jefferson County Extension
msnow@jeffco.us