Preserving Traditions Instructor's Guide: Food Preservation 101

Goals

At the end of the workshop, participants will

- Know the advantages and disadvantages of canning, freezing, dehydrating, and cool storage (root cellaring) for various foods
- Know what foods may be safely water-bath canned
- Be able to select appropriate preservation method(s) that suit their particular needs

Logistics

Demo or workshop?	Demo
Duration	90 minutes
Maximum participants	35
Participants bring	• Notetaking materials
Presenter brings	• Examples of canned, dehydrated, frozen, and cold-storable foods
Equipment	• You may wish to show examples or pictures of the following common equipment: Water bath canner, pressure canner, freezer boxes and bags, dehydrator, pickling crock.
Take-home	None.

Running the workshop

Note: While it is possible to get through all the methods below in 90 minutes, you may wish to omit one or more topics based on your own comfort teaching them and your audience's wish to learn about them.

Introduction (5 minutes)	• Introduce yourself • Any group business: next meeting date/topic, how to get on the mailing list, paying for class, etc. • In smaller groups, it's especially nice to do some kind of "getting to know you" activity: each person introduces her/himself, ask where people live (to meet potential neighbors), ask why they're interested in this topic, etc.
Overview	• Today, we're going to learn about different ways to preserve a variety of foods at home. We'll talk about the best methods for preserving various foods, and the relative costs and benefits of each one.
Freezing (10 minutes)	• Difficulty: Easy • Reliability: Good • Start-up costs: $10-$500 (if you need to buy a freezer) • Ongoing costs: $50+ (electricity, freezer bags, etc.) • Used for: Fruits, vegetables, **meat** • Pros: Quick and easy; doesn't heat up the kitchen; fresh-tasting results; excellent nutritional value • Cons: Very energy-intensive; buying a freezer is energy-intensive; can lose food to freezer burn or power failure • How it's done: Food is washed, chopped, blanched, and cooled, then put in bags or rigid containers with lids and frozen. Leave room for liquids to expand.
Cool Storage (Root cellaring) (10 minutes)	• Difficulty: Easy • Reliability: Moderate • Start-up costs: None • Ongoing costs: None • Used for: Squash, potatoes, cabbage, apples, onions, rutabagas, turnips, parsnips, beets • Pros: Cheap, simple, and 100% natural; good nutrient retention; zero energy use • Cons: All produce must be checked once per week or so and anything that's starting to go bad must be used or thrown out. Only certain types of vegetables can be stored, and their keeping abilities depend on variety, growing conditions, and other factors that might be out of your control. • How it's done: Whole vegetables are put in paper bags or damp peat moss and kept in a cool area (50 degrees or less, but above freezing). Try a bucket in the garage, a box under the bed in a cool bedroom, in a cold closet, or under the basement stairs.

Pickling (Lactofermentation) (10 minutes)	• Difficulty: Easy • Reliability: Moderate • Start-up costs: $10 • Ongoing costs: None • Used for: Pickles (cucumber and also other veggies), sauerkraut, kim chee • Pros: Finished product is **more** nutritious than raw ingredients; very low energy use; quick to prepare; saves a LOT of money over store-bought retention; zero energy use • Cons: Sometimes gets moldy, especially in longer-term storage. Food is not ruined, but you have to be willing to throw out the bad parts and eat the good parts. Like wine or cheese-making, the results can vary depending on day-to-day conditions • How it's done: A brine of 2Tbl salt per quart of water is poured over a jar of cucumbers, radishes, or other crunchy vegetables, along with seasonings like garlic and dill. Cap loosely and let stand at room temp one week, then refrigerate or keep cool for several months. Kraut and kimchee are made by shredding cabbage and other vegetables, sprinkling on salt, and stomping it into a quart or half-gallon jar (or pickling crock) until juice comes out and covers the vegetables.
Dehydrating (10 minutes)	• Difficulty: Easy • Reliability: Moderate • Start-up costs: $20-150 • Ongoing costs: A few dollars for electricity • Used for: Fruit, meat jerky, some vegetables (leafy greens, onions, etc.) • Pros: Relatively low-energy; very cost-effective with homegrown fruit; makes great soup ingredients • Cons: Can have variable results due to weather; dried fruit can get moldy or dry out so much it must be stewed to be eaten • How it's done: The food is cut into thin, evenly-size pieces and placed on screens. The screens are kept warm and dry, with air circulation, for 1-3 days. You can buy a food dehydrator, or build one from a box fan or a cardboard box and a light bulb. You can also use a very low (100 degree) oven or the sun.

About acid and non-acid foods	• If you're going to can, you need to know the difference
	• Three things can spoil homemade foods:
	  o Yeast cause fermentation – food smells funny
	  o Fungi cause mold – food gets fuzzy
	  o Bacteria cause botulism – can't tell if it's infected
	• What happens if my food succumbs to…
	  o Yeast – it'll smell funny/alcoholic; throw it away or compost it
	  o Mold – it'll look disgusting; throw it away or compost it
	  o Botulism – there's no way to tell unless someone gets poisoned (paralysis or death)
	• Acidic foods are all fruits, juices, jams, and anything pickled in vinegar
	• Non-acid foods are meats, vegetables like green beans, and soups
	• Tomatoes and salsa are a special case. Modern tomatoes are bred to have less acid, so they may not be acidic enough to can safely.
	• The good news: you can't get botulism from acidic foods, so jam, pickles, tomatoes, and salsa are very safe to can at home

Water bath canning (20 minutes)	• Difficulty: Low-medium • Reliability: Very high • Start-up costs: $50 for all new equipment • Ongoing costs: $2 for a dozen quarts (new lids) • Used for: Fruit, jam, pickles, tomatoes (with added acid), salsa (from an approved canning recipe) • Pros: Long shelf-life; similar results to store-bought • Cons: Heats up the kitchen in summer; unsafe for meat or non-acidic vegetables; loss of nutrients and texture in vegetables • How it's done: the food is heated, ladled into clean jars, capped with two-part lids (show these), and boiled for 15-60 minutes. This sterilizes the contents and seals the jars. • Talk about acid and non-acid foods – see talking points
Pressure canning (10 minutes)	• Difficulty: Medium • Reliability: Very high • Start-up costs: $150+ • Ongoing costs: $2 per dozen quarts (new lids) • Used for: Meat, soup, non-acidic vegetables • Pros: Long shelf-life; similar results to store-bought; ONLY safe way to can low-acid foods (though they may be safely frozen) • Cons: High startup costs; loss of nutrients and texture in veggies; danger of botulism if careless • How it's done: similar to water bath canning, but uses special pressure canner. This raises the temperature inside to over 212º, which kills the botulism bacterium that can live in non-acid environments.

Talking points

You may use this as the basis for your introduction or to fill in at other times

- Stress that if food looks or smells "off," it should be thrown out.
- Emphasize that home food preservation is quite safe, if you throw out anything that looks spoiled.
- Highlight the one exception: Botulism, which only happens when there is no oxygen and no acid. So: canning meat or vegetables, or fresh garlic submerged in oil.
- …and botulism is very, very rare: 132 people from 1990-2000 got botulism from home-canned foods in the US. (http://www.uga.edu/nchfp/educators/historical/botulismreview04.pdf, p1608). Alaska accounted for 92 of those cases, and all of the cases involved fish, sea mammals, seal oil, and other foods unlikely to be canned in the lower 48 states. After Native Alaskan foods, asparagus was the most common cause of botulism, with 14 cases reported from 1990-2000.
- BPA and canning: Most canning lids have BPA in them. However, it's only in contact with food while the food is in the canner, so there's much less exposure than in the "white lining" of commercial food cans. BPA-free lids are available from http://www.reusablecanninglids.com/ and http://www.lehmans.com/store/Kitchen___Canning_and_Preserving___Jars__Lids_and_Rubbers___Bulk_Canning_Lids___bulklids?Args=&from_search=1
- There is room to improvise with food preservation equipment. Here's an overview:

Easily improvised	Never improvise
• Drying racks/boxes for dehydration • Jars for pickling. Anything non-metal will work: Crock pots, plastic buckets (be sure it's food grade and not had paint or chemicals) , glass jars. I love ½ gallon Mason jars – good size, easy to keep out air, and much cheaper and lighter than crocks. • Any large pot with a lid can be a water-bath canner. Water must cover jars by 1 full inch, and you must have something on the bottom of the pot to keep the jars from touching the bottom. Try a bunch of jar rings, a small broiling rack, a silicone hot pad, or even a clean towel. • Cold storage – any spot at or under 50 degrees has some potential for cold storage.	• Pressure canner • Don't can in the oven or microwave or use a steam canner • Be careful with freezer containers; you want them to have straight sides, or food won't come out easily. Glass is OK if you leave ¾" space empty at the top. Heavy-duty freezer bags are worth the extra money, because they protect from freezer burn.