BONUS 1

The Preserver's Quick-Reference Field Guide

Every number you need at the canner, the drying rack, the curing table, and the cellar door, on eight printable cards.

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A free companion to The Essential Off-Grid Food Preservation Manual

How to Use These Cards

Print on heavy paper, trim if you like, and laminate or slip into sheet protectors. Post the canning cards beside the stove and keep the rest in a binder with your logbook.

The rules that never change.

1. Use a tested recipe and process for canning: USDA, NCHFP, Cooperative Extension, or a tested manufacturer recipe.
2. Low-acid foods (vegetables, beans, meat, poultry, fish, soup, stock) are pressure canned. No exceptions.
3. Always adjust for altitude.
4. Add acid to every jar of tomatoes.
5. Never taste a suspect jar. When in doubt, throw it out.

My Altitude Card

Item	My number
My elevation (feet)	
Water boils at (°F)	
Water-bath minutes to add	
Weighted-gauge pressure (psi)	
Dial-gauge pressure (psi)	
Jar sterilizing time (minutes)	
Date my dial gauge was last tested	

Card 1 · Altitude and Pressure

Times in most charts are for 0 to 1,000 feet. Adjust as shown.

Pressure for low-acid foods (psi)

Altitude (ft)	Weighted gauge	Dial gauge
0–1,000	10	11
1,001–2,000	15	11
2,001–4,000	15	12
4,001–6,000	15	13
6,001–8,000	15	14
8,001–10,000	15	15

Water-bath and steam canning: add to the 0–1,000 ft time

Altitude (ft)	Add
1,001–3,000	5 minutes
3,001–6,000	10 minutes
6,001–8,000	15 minutes
8,001–10,000	20 minutes

Pickles and jams have their own altitude columns (Card 4). Steam canners: total adjusted time 45 minutes or less only.

Boiling point of water

Altitude	°F	Altitude	°F
Sea level	212	5,000 ft	203
1,000 ft	210	6,000 ft	201
2,000 ft	208	7,000 ft	199
3,000 ft	207	8,000 ft	197
4,000 ft	205	10,000 ft	194

Card 2 · Pressure Canning Times

Minutes at the pressure on Card 1. Vent 10 minutes first. Cool naturally.

Food	Pack	Headspace	Pints	Quarts
Asparagus	Hot/raw	1 in	30	40
Beans, dry (soaked, boiled)	Hot	1 in	75	90
Beans, green or wax	Hot/raw	1 in	20	25
Beans, lima, fresh	Hot/raw	1 in*	40	50
Beets	Hot	1 in	30	35
Carrots	Hot/raw	1 in	25	30
Corn, whole kernel	Hot/raw	1 in	55	85
Mixed vegetables	Hot	1 in	75	90
Peas, green, shelled	Hot/raw	1 in	40	40
Potatoes, white, cubed	Hot	1 in	35	40
Potatoes, sweet, pieces	Hot	1 in	65	90
Pumpkin or winter squash, cubed	Hot	1 in	55	90
Spinach and greens	Hot	1 in	70	90
Soup (no dairy, flour, rice, pasta)	Hot	1 in	60	75
Chicken or rabbit, bone-in	Hot/raw	1¼ in	65	75
Chicken or rabbit, boneless	Hot/raw	1¼ in	75	90
Meat chunks or strips	Hot/raw	1 in	75	90
Ground meat	Hot	1 in	75	90
Meat or poultry stock	Hot	1 in	20	25
Fish (pints only)	Raw	1 in	100	—
Smoked fish (pints only)	See NCHFP	1 in	110	—

*Lima beans in quarts: 1¼ in (large beans) or 1½ in (small beans). Soups with seafood: 100 minutes. Never can mashed pumpkin or squash, refried beans, dairy, or flour-thickened foods.

Card 3 · Water-Bath Times: Fruit and Tomatoes

Minutes in boiling water. Jars covered by at least 1 inch. Time starts at a full rolling boil.

Food and pack	Jar	0–1,000	1,001–3,000	3,001–6,000	6,000+
Apples, sliced, hot	Pt/Qt	20	25	30	35
Applesauce, hot	Pint	15	20	20	25
Applesauce, hot	Quart	20	25	30	35
Peaches, apricots, hot	Pint	20	25	30	35
Peaches, apricots, hot	Quart	25	30	35	40
Pears, halves, hot	Pint	20	25	30	35
Pears, halves, hot	Quart	25	30	35	40
Fruit purees, hot	Pt/Qt	15	20	20	25
Apple or grape juice, hot	Pt/Qt	5	10	10	15
Tomatoes, crushed*	Pint	35	40	45	50
Tomatoes, crushed*	Quart	45	50	55	60
Tomato juice*	Pint	35	40	45	50
Tomato juice*	Quart	40	45	50	55
Tomatoes, whole, in water*	Pint	40	45	50	55
Tomatoes, whole, in water*	Quart	45	50	55	60
Tomatoes, in juice or raw-packed*	Pt/Qt	85	90	95	100

*Acid for every jar of tomatoes

Jar	Bottled lemon juice	or citric acid	or 5% vinegar
Pint	1 tablespoon	¼ teaspoon	2 tablespoons
Quart	2 tablespoons	½ teaspoon	4 tablespoons

Card 4 · Pickles, Sauerkraut, and Jam

Minutes in boiling water. Sterilize jars first for any time under 10 minutes.

Product and pack	Jar	0–1,000	1,001–3,000	3,001–6,000	6,000+
Bread-and-butter pickles, hot	Pt/Qt	10	15	15	20
Dill pickles, fermented, raw	Pint	10	15	15	20
Dill pickles, fermented, raw	Quart	15	20	20	25
Dill pickles, quick fresh-pack, raw	Pint	10	15	15	20
Dill pickles, quick fresh-pack, raw	Quart	15	20	20	25
Dilled beans, raw	Pint	5	10	10	15
Pickled beets, hot	Pt/Qt	30	35	40	45
Pickle relish, hot	½ pt/Pt	10	15	15	20
Sauerkraut, hot	Pint	10	15	15	20
Sauerkraut, hot	Quart	15	20	20	25
Sauerkraut, raw	Pint	20	25	30	35
Sauerkraut, raw	Quart	25	30	35	40
Strawberry jam, regular pectin	½ pt/Pt	5	10	10	15

Pickling and jam reminders

- Vinegar must be 5% acidity. Never add extra water or vegetables to a tested pickle.
- Trim 1/16 inch from the blossom end of cucumbers.
- Low-temperature pasteurization (only where a recipe allows): 180–185°F for 30 minutes, checked with a thermometer.
- Gel point without added pectin: 8°F above the boiling point (220°F at sea level).
- Never double a jam recipe. Never seal with paraffin.

Headspace

Headspace	Foods
¼ inch	Jams, jellies, juices, purees, tomato sauce
½ inch	Fruit, tomatoes, pickles, relish, sauerkraut
1 inch	Pressure-canned vegetables, beans, meat, stock, soup, fish
1¼ inches	Poultry and rabbit

Card 5 · Drying and Jerky

Most fruit and vegetables dry at 125–140°F; herbs at 95–115°F.

Food	Pretreat	Dry when
Apples, pears, peaches, apricots	Ascorbic acid dip: 1 tsp in 2 cups water, 3–5 min	Leathery, no moisture inside
Berries, grapes, cherries	Check skins in boiling water 30–60 sec	Leathery
Green beans	Steam blanch 2–2½ min	Brittle
Carrots	Steam blanch 3–3½ min	Tough to brittle
Corn	Steam blanch ears 2–2½ min	Brittle kernels
Peas	Steam blanch 3 min	Shriveled, hard
Potatoes	Steam blanch 6–8 min	Brittle
Onions, peppers, mushrooms	None	Brittle or leathery
Fruit leather	Lemon juice for light fruit	Not sticky; peels cleanly

Jerky: the USDA rule

- Heat meat to **160°F** (poultry and most game **165°F**) before or after drying.
- Dry at a steady **130–140°F**.
- Path A: boil strips in marinade until 160°F inside, then dry.
- Path B: dry, then heat in a 275°F oven about 10 minutes (¼-inch strips) until 160°F inside.
- Done when a cooled piece bends and cracks but does not snap.
- Bear and wild hog: always heat thoroughly. Freezing is not enough.

After drying

- Condition fruit 7–10 days in jars two-thirds full; shake daily; redry if moisture appears.
- Pasteurize sun-dried fruit: 0°F for 48 hours, or 160°F oven for 30 minutes.
- Dried fruit keeps about 1 year at 60°F, 6 months at 80°F. Vegetables: about half that.

Card 6 · Curing, Smoking, and Fermenting

Equilibrium curing (percent of weight)

Product	Salt	Sugar	Cure #1	Time at 36–40°F
Bacon (dry, % of meat)	2.5%	1–2%	0.25%	7–10 days
Corned beef (brine, % of meat + water)	3%	1%	0.25%	7–10 days
Pork loin (brine)	2.5%	1%	0.25%	5–7 days

Cure #1: 1 level tsp per 5 lb meat, or 0.25% of weight. Cure #2 only for long, air-dried products. Keep curing salts labeled and away from table salt. Equilibrium-cured meats are perishable: keep cold and cook before eating.

Smoking

Food	Safe internal temperature
Poultry	165°F
Ground meat, sausage	160°F (poultry 165°F)
Whole cuts of beef, pork, lamb, venison	145°F + 3 min rest
Fish (brined first)	160°F, held 30 minutes
Bacon	150°F, then cook before eating

Cold smoke (below 90°F) only cured or ready-to-eat foods. Never cold-smoke raw meat or fish. Use dry hardwood; aim for thin blue smoke.

Fermentation

- Sauerkraut: 3 tablespoons canning salt per 5 lb cabbage (about 2.25–2.5%). In jars: 3½ tablespoons.
- Fermented dills, per gallon: 4 lb cucumbers, ½ cup salt, ¼ cup 5% vinegar, 8 cups water, dill.
- Mixed vegetables: 2.25–2.5% salt by weight.
- Temperature: 70–75°F (3–4 weeks) or 60–65°F (5–6 weeks). Below 60°F may not ferment; above 75–80°F softens.
- Skim white surface yeast. Discard slimy, mushy, rotten-smelling, or fuzzy-moldy ferments.

Card 7 · Root Cellar and Dry Storage

Group and conditions	Crops	Approximate life
Cold, very moist: 32–40°F, 90–95%	Carrots, beets, parsnips, turnips, rutabagas	2–6 months
Cold, moist: 32–40°F, 80–90%	Potatoes (38–40°F), cabbage, apples, pears	Potatoes 4–9 mo; apples 2–6 mo
Cool, dry: 32–50°F, 60–70%	Onions, garlic, dry beans	Onions, garlic 6–7 months
Warm, dry: 50–60°F, 50–70%	Winter squash, pumpkins, sweet potatoes	2–6 months

Crop	Cure at	For
Potatoes	60–70°F, 80–90% humidity, dark	10–14 days
Onions, garlic	Warm, dry, airy, shaded	2–3 weeks
Winter squash, pumpkins	80–85°F, about 80%	10 days
Sweet potatoes	80–85°F, about 90%	7–10 days

Dry storage with oxygen absorbers

Container	Dense foods	Airy foods
Quart jar	100 cc	100–200 cc
1-gallon Mylar or PETE bottle	300 cc	400–500 cc
5-gallon Mylar bag	2,000 cc	2,500 cc+

- Food must be dry: about 10% moisture or less.
- No absorbers with sugar or salt.
- Keep storage cool (under 75°F), dark, off the floor, and rodent-proof.
- Label contents, date, absorber size. First in, first out.

Card 8 · Spoilage and Botulism

Discard canned food without tasting if you see

- A bulging, popped, or unsealed lid
- Leaks, dried streaks, or liquid that spurts when opened
- Rising bubbles, foam, or unexpected cloudiness
- Mold of any color, or an off, sour, or rotten smell
- Mushy, slimy, or discolored food
- Any low-acid jar whose processing you cannot confirm

Safe disposal

1. Wear disposable gloves.
2. **Sealed jars:** double-bag in heavy garbage bags and put in the trash.
3. **Unsealed or leaking jars:** place jars, lids, and food in a large pot, cover with water by 1 inch, boil covered 30 minutes, cool, then bag and discard.
4. Clean every surface with 1 part unscented bleach to 5 parts water. Let stand 30 minutes, wipe, then wash with soapy water.
5. Throw away sponges and cloths used in cleanup.

Botulism is a medical emergency

Symptoms usually begin 18 to 36 hours after eating, but can start in 6 hours or up to 10 days later: blurred or double vision, drooping eyelids, slurred speech, difficulty swallowing, dry mouth, and muscle weakness that spreads downward.

Call 911 or go to an emergency room immediately. Keep the suspected food for health officials.

Never

Open-kettle, oven, dishwasher, or inversion canning · water-bath canning low-acid food · canning in untested electric cookers · reusing flat lids · paraffin on jam · storing garlic or herbs in oil at room temperature · cold-smoking raw meat or fish · tasting a suspect jar.