

Our food, Our Right



Recipes for food Justice

APPLE SAUCE

Processing directions adapted from Ball Blue Book of Preserving

One of the best things for a new canner to experiment with is apple sauce because it is nearly impossible to get wrong and it requires very few ingredients. Apples are also high-acid, so there is no risk of botulism poisoning!

Wash apples. Core, peel (optional), and slice. Place in large saucepan with enough water to prevent sticking and cook until soft. Purée with a food processor or food mill, if a fine texture is desired, and return

2-3 pounds apples per
quart water

Sugar (optional)

Cinnamon, Nutmeg,
Allspice to taste

Food Preservation: The Basics of Canning, Freezing, Pickling, and Drying!

Laura Brady

Two generations back, canning wasn't a special skill; it was a basic part of maintaining the household, wedged into its natural place between spring-cleaning and the autumn pumpkin harvest.

Since then, with the advent of cheap, commercially canned food and fruit shipped in easily from far away during the winter, canning has slipped from being considered 'normal' to, all too often, 'dangerous' and 'unsanitary.'

The reality, however, is that if you follow the rules, strap on your seatbelt, watch some experts, and keep your eyes on the target, canning can be safe and lots of fun. And if you do discover that canning is not for you, remember that you can always try freezing, pickling, or drying!

Food preservation has some great benefits:

It's cheap! Because you're buying fruits and vegetables (or harvesting them) at their peak locally, they're a lot less expensive than at other times of the year. If you buy them in bulk, or buy 'seconds,' you can save a lot too.

Low impact on the planet! If you buy your produce locally and in season, preserve it, and then eat it in the winter, you won't be supporting the high-carbon economy of eating fruit from across the globe in January.

It supports your local food economy! When you buy canned food, most of the time, you have no idea who grew those tomatoes.

It tastes better! When you buy those canned tomatoes off the shelf in the grocery chain, they may have been grown in Mexico, cooked in Florida, canned in the Midwest, labeled in Texas, and then trucked to you as Stewed Tomatoes.

Why do so many people think food preservation is dangerous?

Mostly, it's a misconception. If you follow some basic guidelines, it can be completely safe!

Let's break down what food preservation is all about. When you preserve food, you're killing or neutralizing the naturally occurring agents that normally cause food to spoil. You can do this by freezing, heating, or simply creating an environment that is inhospitable to them.

Enzymes are present in all living things and cause decomposition. Refrigeration slows down food decomposition because enzymes only really get active between 85-120 °F. You can get rid of enzymes by heating food to 140 °F.

Molds are fungi that grow out of spores that alight naturally on foods. Some mold is good, and purposefully introduced (think of blue cheese). Other mold is not so yummy. Molds flourish between 50-100 °F. To destroy the unwanted types, heat foods to 140-190 °F. The higher you raise the temperature, the faster they die.

Yeasts are also fungi, but they cause fermentation. Some are purposefully added to foods (think beer and bread). Others will make you pucker, as they sour foods in a not-so-appetizing way. They flourish at the same temperatures as molds and can be destroyed the same way.

Bacteria are what most people get worried about when canning comes to mind. Not only do some types thrive in temperatures that would normally wipe out molds and yeasts, certain kinds that thrive in specific types of food can cause paralysis and death (think *Clostridium botulinum*, the bacterium that produces the botulism toxin). The trick here is to know what food you're preserving and how to protect it from different bacteria types. Some germs, like the fragile *Salmonellae*, can be killed at a mere 140 °F as long as they are kept at that temperature for enough time. To protect against the botulism nerve toxin, conversely, you can either create an environment in which the bacteria cannot survive (highly acidic) or you have to heat the food to 240 °F (for which you need a pressure canner) for a certain amount of time.

to saucepot. Otherwise, mash with a spoon or potato masher to remove clumps. Add ½ cup sugar for each pound of apples, if desired, but sugar is usually not necessary. Bring applesauce to boiling (212 °F), stirring frequently to prevent sticking. Keep mixture at a boil while filling hot, sterilized jars. Leave a ½-inch headspace. Remove air bubbles (see above). Correctly place lids and rims. Process pints and quarts for 20 minutes in a boiling-water canner.



Blackberry Jam Makings, J.Khorsad

CANNING

Can I CAN without fear of Botulism?

Absolutely, YES! It's a matter of acidity.

High-Acid versus Low-Acid Canning

Clostridium botulinum, the bacterium that produces the botulism toxin, cannot survive in foods with a pH of 4.5 or lower. Some examples of these high acid foods are blackberries, peaches, and apples.

If your food is **high acid** (or you have made it high-acid by adding something like vinegar), you can process it in a **water-bath canner**. In this system you submerge the food, inside of jars, in boiling water for a prescribed amount of

time. This heating process will get rid of the other possible spoiling elements (enzymes, molds, yeasts, and certain types of bacteria) and will also seal the jar so that none of these spoilers can sneak in later. You don't need to heat the jar hot enough to kill *Clostridium botulinum* because it cannot live in the acidic environment of low pH foods.

If your food is **low acid**, then you need to heat it hot enough to kill the *Clostridium botulinum* bacteria. Low acid foods include vegetables without added vinegar, meat, and fish, just to name a few. The only way to get these foods to the temperature that kills these bacteria (240 °F, hotter than boiling) is with a special piece of canning equipment called a **pressure-canner**. We'll just look at water-bath canning in this guide. Check out the Resources section for some great books that can tell you how to choose a pressure-canner, use it, and most importantly, keep it working safely.

To find the pH of common foods, go to <http://vm.cfsan.fda.gov>, click on "Acidified and Low Acid Canned Foods," and then go to "Approximate pH of Foods and Food Products."

How to Avoid the Botulism Risk:

Botulism is a severe medical emergency that can cause paralysis and, commonly, death. That's why it's important to follow a few basic guidelines for avoiding the botulism risk.

Always follow a recipe!

All sorts of ingredients can change the pH of food. If a recipe calls for vinegar, that exact amount is there for a reason—to make the product a safe pH.

Get your recipe from a reputable source!

All of the books listed are great resources. The Cooperative Extension offices of state universities are also great places to check out canning recipes.

Size up your jar—and boil it right!

Boiling times vary from recipe to recipe based on the size jar you are using and the food that you are canning.

Don't assume a Peach is the same as a Nectarine!

Some fruits and vegetables may seem alike, but actually have different pH levels or different densities. Thus, they may require different additives or processing times.

BERRY JAM

adapted from Ball Blue Book of Preserving

This recipe can work with Blackberry, Blueberry, Boysenberry, Dewberry, Gooseberry, Loganberry, Raspberry, Youngberry and yields about 3 pints.

Combine berries and sugar in a large saucepot. Sweetener quantity may be safely varied according to personal taste. Bring slowly to a boil, stirring until sugar dissolves. Cook rapidly to gelling point. As mixture thickens, stir frequently to prevent sticking. Remove from

9 cups crushed berries

6 cups sugar or
equivalent sweetener
(optional)

The Tools of the Trade:

- *Canning jars* (Ball and Kerr are common brands) that use screw-on bands and lids.
- *Canning bands*, either normal or wide-mouth, that fit your jars. Band can be re-used until they become too rusty or misshapen to tighten correctly onto jars.
- *Canning lids* (special metal disks encircled by a rubberized flange on the inside). Canning lids cannot be re-used after being processed as they will not seal correctly. You will need to purchase new ones every time you can.
- *A Canner*. Nearly any pot will work—as long as it is deep enough to cover your jars by at least two inches of water and to leave enough space above the water level so that the boiling water doesn't explode all over you and your stove.
- *A Jar-Lifter*. Trust me—you want one! They only cost a few dollars and will make your canning experience much more fun.
- *A Lid-Wand*. This handy little tool helps you lift your lids and place them on jars without touching them—a nice way to reduce germ problems while canning.
- You'll also want an assortment of spoons, some oven mitts, a timer, and probably a kitchen scale (helpful to get the recipes right).

The basic steps of water-bath canning are:

- Prepare the food that you want to preserve.
- Sterilize your canning jars (see below).
- Pack the food into the jars and wipe off the rims (see below for directions on packing safely).
- Place canning lids on the jars and gently tighten on the rims (only as tight as you can get with your fingertips—don't use your palms), placing jars into the pot of water as soon as they are filled and covered.
- Process the jars in boiling water for the prescribed time, adding additional minutes per these guidelines—<http://www.ext.colostate.edu/pubs/foodnut/p41.html#can>—if you decide to can in a location higher than 1,000 feet above sea level (because altitude affects the temperature at which water boils).
- Remove the jars from the boiling water and set them somewhere to cool for 6 to 8 hours (when lifting them out of the water, keep the jars completely upright and do not tip off the water that will settle on top of the lids, as doing so could disturb the seal).
- Check to make sure jars are sealed. This is easy to tell because the lid will be taut and pulled down into the jar—it



Oregan Grapes for Jelly, J.Khorsand

- should not click or bounce when you press on it.
- Remove the bands and make sure you can lift the jars by their sealed lids.
- Store the jars without their rims in a cool, dark place (without the rims, you will easily see if a seal goes faulty) for up to a year. The ideal temperature range for safe storage is 50-70°F, and darkness is important if you don't want the sun to bleach the product.
- If you want to move jars, mail them, or give them as gifts, just screw the bands back on to protect the lid seals.

Sterilization

- *Jars*: To sterilize jars, process them in your canner for at least ten minutes. Because you want your jars to be hot when you fill them, leave them in boiling water in your canner until you are ready to pack them with your product. Then, take out one jar, pack it, screw it closed, and place it back in the boiling water immediately, before moving on to the next jar. Some people choose to sterilize jars in their dishwasher (some models have special settings for this). If you choose this method, don't open the dishwasher until you are ready to fill the jars.
- *Bands*: Wash bands in warm, soapy water and then sterilize them in boiling water along with the jars.
- *Lids*: Don't boil the lids because it can ruin the rubberized flange. Instead, right before placing them on your jars, simmer the lids in a small pan of water to soften the flange, which aids in the sealing process.

How to Pack the Sterilized Jars

Jars should be packed with produce to the specific jar-level that your recipe specifies. A recipe will usually call for a

headsapce. Adjust two piece caps. Process 15 minutes in a boiling-water canner.

Note: If seedless jam is preferred, crushed berries may be heated until soft and pressed through a sieve or food mill; measure pulp and proceed as above.



Canned Goods, Laura Brady

$\frac{1}{2}$ " or $\frac{1}{4}$ " headspace, which is the amount of space left between the top level of the food and the top of the jar. From the top of the jar to the bottom of the screw divots is $\frac{1}{2}$ ". Thus, halve this if you need to leave a $\frac{1}{4}$ " headspace. It is important to follow this specification precisely. Leaving too much headspace can cause pressure to build up inside the jar and crack the glass. It can also cause a seal failure. Conversely, leaving too little headspace might cause some food to be forced out under the lid when it expands during processing, also ruining the seal.

Once jars are filled, it is important to **remove all air bubbles**. According to the *Ball Blue Book of Preserving*:

This can be done by placing a nonmetallic spatula inside the jar between the food and the side of the jar. Press spatula back against food to release trapped air. Repeat several times around the inside of the jar. Do not use metal knives or other metal utensils since they can scratch the glass and result in jar breakage. Even though air bubbles may not be visible, they can be trapped between pieces of food and must be removed (p. 11).

Frequently Asked Questions

Isn't canning a lot of work?

Canning does take a lot of hours and it can get pretty hot. However, in a pinch, you can make it a lot more pleasant:

- Can in small batches!
- Freeze summer's bounty and can at your leisure through the fall, winter, and spring!
- Throw a canning party!

Can I change the amount of sugar called for in a recipe, or omit it entirely?

Definitely. Sugar does not influence pH, so feel free to vary the amount according to personal preference. You can also substitute sugar with Splenda, fruit juice, or honey.

Do I have to use pectin when making jams and jellies?

Pectin is by no means necessary, and omitting it will not affect the safety of the recipe. Most people add pectin because it creates a more solid jam and makes the fruit stretch farther. This is because when you don't use pectin, you have to cook the fruit a lot longer to make it thicken. As this involves evaporating out the fruit's natural water content, in the end, you will have less jam left in the bottom of your pot when you don't use pectin. However, the taste of the jam should not be any different.

I don't want to buy pectin—can I make it myself?

Yes! Pectin occurs naturally in most fruit, but some, like apples and crab apples, have very high concentrations of this natural thickener. You can boil these fruits down to create your own pectin solution and add it to fruits that don't have enough natural pectin to thicken satisfactorily. The following website provides recipes and directions: <http://www.motherearthnews.com/Real-Food/1980-05-01/Make-Your-Own-Pectin.aspx>.

DILL PICKLES

from the Ball Blue Book of Preserving

Yield: about 7 pints or 3 quarts

Wash cucumbers, scrubbing well to remove dirt.

Place sugar, salt, vinegar and water in a large saucepot.

Add spices (in a spice bag if desired) and simmer 15 minutes.

Pack cucumbers into hot, sterilized jars, leaving 1/2-inch headspace.

Place one head of dill in each jar.

Ladle the hot vinegar solution over the cucumbers, leaving a 1/2-inch headspace.

8 pounds 4 to 6
inch cucumbers, cut
lengthwise into halves

1/2 cup sugar

1/2 cup canning salt

1 quart vinegar

1 quart water

Pickling

PICKLING

Pickles are one of the oldest forms of food preservation.

The number of different pickling techniques reflects this long history. It is impossible to do justice to this fine art here, so if you are interested in exploring the full diversity of pickling options, the book *The Joy of Pickling* is a must.

If you've never pickled before, however, and just want to give it a try, fresh-packed Dill Pickles are a wonderful place to begin. Before beginning, this is the least you need to know:

Pickling Salt: This is fine, pure granulated salt. You can usually buy four-pound boxes labeled "Canning and Pickling Salt" at most supermarkets. Kosher salt is also okay to use, but you need to use one and a half to two times as much to compensate for the larger salt crystals.

Vinegar: Cider vinegar is considered the supreme pickling vinegar (beware of fake apple cider-flavored vinegar) but distilled white vinegar works great too. Just make sure that the vinegar you use is at least 5 percent acidity—necessary for maintaining a pH level at which harmful bacteria cannot survive.

Pickling Spices: You can buy packages of pickling spices at the grocery store, but it is also easy to make your own using cinnamon stick, Mediterranean bay leaves, dried hot peppers such as japonés or de árbol, black peppercorns, yellow mustard seeds, allspice berries, cloves, coriander, (unground) mace, dill seeds



Black Spanish Radish, Pickled (above), J. Khorsand

3 tablespoons mixed pickling spices

Green or dry dill (1 head per jar)

Remove air bubbles using a non-metallic spatula. Adjust two-piece caps. Process pints and quarts 15 minutes in a boiling-water canner.

Recipe Variation: For Kosher-Style Pickles add to each jar: 1 Bay leaf, 1 clove garlic, 1 piece hot red pepper and ¼ teaspoon mustard seed. Process as recommended above.



FREEZING

Freezing is another great way to preserve summer and autumn's bounty to enjoy year-round. Pretty much everything can be frozen successfully except for eggs in the shell, cream sauces, mayonnaise, milk, and precooked meat (which becomes very dry). Most people don't freeze more frequently, simply because they don't realize how easy it can be!

Fruits:

Freezing fruits in syrups protects them from the action of enzymes that will degrade the color and general aesthetics of the fruit. Depending on how you intend to use the product, this may not be important (for example, in making jams, smoothies, or covered pies).

Vegetables:

- It is good to blanch vegetables prior to freezing. though not necessary, it stops the enzyme action that contributes to the slow deteriorations of the product over time. To blanch, immerse the prepared vegetables in boiling water for the prescribed length of time. Remove and immediately submerge in an ice or cold-water bath (to preserve color). When cool, package for freezing.
- To minimize the formation of ice crystals, you may want to put your freezer on a quick-freeze cycle because the faster the food freezes, the fewer ice crystals will form. Otherwise, just try to put the food in the coldest part of your freezer when you first introduce it.
- Freeze your food in bags and containers that are specifically designed for freezing. Though glass works too, be sure to leave extra space for food expansion and be careful when removing the jar as it will become slippery.
- If freezing liquids or sauces, you can freeze them in ice-cube trays and then transfer them to bags for quick-access later (that doesn't involve defrosting the entire container). This works great for pesto, salsas, and juices.
- Bananas and other larger fruits can be frozen in sliced pieces to be easily added to smoothies.

Safety Practices when Freezing Foods

Freezing food is safe and effective, as long as your freezer can maintain a constant 0° F. It is just important to be safe when defrosting food that has been frozen. Telesco recommends the "following tried-and-true ways to safely defrost your food:

- *Leave the food in your refrigerator.* This takes a while, but is the most energy-efficient method. It's wise to put some paper towels down or a platter underneath the item to catch any water or juices that run out during defrosting.
- *Put the food in a cold-water bath.* Keep the item in the wrapper or container, and if need be, put it in an additional resealable bag for protection. It's recommended that you refresh the water every 30 minutes until the item is defrosted.
- *Use the defrost setting on your microwave.* Microwave powers vary greatly from machine to machine, so watch carefully to make sure your food isn't being partially cooked because that can give your food a rubbery texture. As with the refrigerator, you will want something to gather any liquid that's released during the process for faster cleanup" (p. 36).

It is safe to re-freeze food as long as has not completely thawed or reached room temperature.

drying dehydrating

DRYING/DEHYDRATING If the last sections on canning and freezing seemed too intimidating. Drying food may be a more fitting form of preservation. Beyond the pure tastiness of dried pear rounds or tomato slices in the winter, drying food is 1) very inexpensive 2) requires little space for food storage and 3) does not require the monetary and environmental toll of maintaining a large freezer.

Equipment

Depending on your available time, financial resources, and preference, numerous drying methods are possible. Solar Dehydrator—The best option, environmentally, is to dry food outside under the sun in a hot climate or, in cool places such as Seattle, in a solar dehydrator. Though temperature may be more variable and require more monitoring in this method, no unsustainable energy inputs are required. Check out the Homegrown Evolution Blog for pictures and links to sites that can teach you how to build your own: <http://www.homegrownevolution.com/2008/10/build-solar-dehydrator.html>.

Food Dehydrator Machine—Investing in a dehydrating machine is probably one of the easiest ways to dry food

STUFFED PUMPKIN

Karla Manus

I'm usually more of a recipe-follower than a recipe-maker, but working at the University District farmers market for a produce vendor inspired me to take one of the beautiful Cinderella pumpkins, stuff it, and serve it for an autumn dinner party. It makes quite a spectacle when you bring a huge stuffed pumpkin to the table in front of your guests

quickly and satisfactorily. Though it requires electricity, it is much more efficient than drying in an oven and does a much better job because it maintains the ideal drying temperature and needed air circulation. Brand new, dehydrators range in cost from \$35-60 dollars. However, used dehydrators are easy to find at garage sales and discount stores.

Drying in Your Oven—If you don't rely heavily on your oven for other purposes, you can use it to dry food (plan to double the given drying time for machines). Set your oven to 140 °F (you may need to use an internal thermometer to monitor this temperature) and prop the door open 1-2 inches. Ideally, use a convection oven with a fan (though not necessary). Place the food inside on well-oiled cookie sheets or cake cooking trays. You may need to flip and turn the pieces every few hours to aid in uniform drying.

Preparing Food for Drying

- Slice/peel fruits and vegetables as you will want to eat them.
- Cut fruits and vegetables into uniform sizes and thicknesses so that they will dry evenly. Rather than drying apples and pears in wedges, for example, peel, core, and slice the fruits into rounds of equal thickness.
- If drying vegetables, steaming or blanching prior to drying is recommended to prevent toughening of the dried product over time.

Drying Process

- Arrange food in chosen location for drying.
- For ideal drying that preserves the texture, color, and nutritional quality, maintain the temperature between 130 and 140 °F.
- Monitor foods frequently and remove when pliable and leathery, not hard. Dry fruits to about a 20 percent moisture content. This means that when cut in half, you should not be able to squeeze out any juice, and the fruit should not stick to itself when folded in half. Berries will rattle when fully dry. Vegetables should be dried to a 10 percent moisture content, at which time they will be brittle and crisp.

After Drying

- Allow foods to cool completely
- Vegetables can be packed immediately for storage in air-tight bags or jars.

1 small pumpkin-4 lbs

3 C. mixed grains
(any combination of
brown rice, wild rice,
quinoa, barley, orzo,
Israeli couscous, or
similar), cooked

1/4-1/3 pound country
sausage

- Fruits should be 'conditioned' prior to storage to allow any remaining moisture to be distributed evenly through the fruit (this step may be omitted, but will increase the chance of molding). To condition fruit, place the dried pieces loosely in plastic or glass jars for 7-10 days, shaking frequently. If condensation appears, the fruit should be returned to the dehydrator for additional time. Once the conditioning period has ended, package the fruit for storage.

Storage

- Store dried food in sealed containers in a cool, dry place.
- Pack in small quantities because each time a package is exposed to the air, its shelf life and overall quality may decrease.
- Dried fruit generally can be stored for about a year if kept at 60 °F, or for six-months at 80 °F. Dried vegetables have roughly half the shelf life of dried fruits.

oil, preserving
curing and
smoking

PRESERVING IN OIL, CURING, AND SMOKING

These are some other great techniques for preserving food, albeit a bit less common. If you're interested in learning more about these delicious options, Eugenia Bone's book *Well Preserved: Recipes and Techniques for Putting Up Small Batches of Seasonal Foods* is a great resource.

Recommended Reading

- » *Ball Blue Book of Preserving.*
- » *Bone, Eugenia. Well-Preserved: Recipes and techniques for putting up small batches of seasonal foods.*
- » <http://canningusa.com>, "A Simple Approach to Preserving Home-made Foods."
- » www.homecanning.com: A great source for buying canning tools, also with good canning and freezing instructions, including an on-line tutorial.
- » www.pickyourown.org: My personal favorite for on-line canning/preserving help and guidelines.
- » *Telesco, Patricia and Jeanne P. Maack. Everything Canning and Preserving Book: All you need to know to enjoy natural, healthy foods year round.*
- » *Ziedrich, Linda. The Joy of Pickling: 250 Flavor-Packed Recipes for Vegetables and More from Garden or Market.*