BEGINNER'S GUIDE TO PRESERVING

Safely Can, Ferment, Dehydrate, Salt, Smoke, and Freeze Food

DELILAH SNELL

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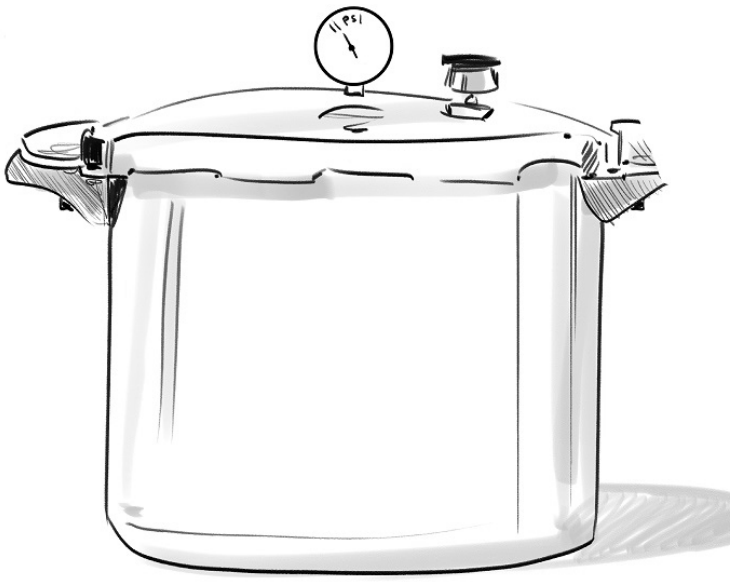
For Ernest Miller—teacher, chef, preserver, friend, mentor, and inspiration to an entire community. I will always cook and preserve with you in my heart.



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Spicy Kimchi

Introduction

Even while writing these words , I'm in shock that I have gotten to the place of writing this book. But then I think about the course of my life, and my interests and passions . . . well, maybe it was meant to be.

When I was in high school, I bet my stepfather, Dale, that I would be a vegetarian for a year. Mind you, this was in the early 1990s in Irvine, California—a place where vegetarianism wasn't common—but I made it happen. This led to a love of cooking and gardening, which then led me to start a farmers' market, open an eco-store, and learn how to host events as small as dinner with friends or as large as events with 30,000 people.

During a truffle-making workshop at my store, I met Ernest Miller. Over a bowl of kumquats from a friend's farm, he told me he was enrolled in the San Bernardino Master Food Preserver Program. I immediately looked up the program, snagged the last spot, and invited myself as Ernie's carpool buddy. The rest is history.

We went on to teach a number of classes together and separately, and spread the gospel of food preservation at farmers' markets, lectures, and demos across Southern California. Years later, I opened Alta Baja Market, a café and market where my passion for food and education could shine, with food preservation woven throughout our menu and operations. Some of those recipes are in this book, like our superlative Tomato Jam .

You don't have to devote your life to food preservation to reap the benefits. Whether you are a gardener, hunter, chef, crafter, food enthusiast, home cook, or all the aforementioned, there is something for everyone in these pages. Hopefully, like me, you'll see that food preservation isn't mysterious, scary, or difficult . . . but instead fun, interesting, and certainly delicious. Through the detailed explanations, recipes, tips, illustrations, and charts, you'll have the confidence and understanding to use these skills for years to come.

Food preservation has changed my life in so many wonderful ways, and I'm excited to share this joy with you!

CHAPTER ONE

The Essentials of Food Preservation

Without some type of preservation method—canning, pickling, smoking, salting, dehydrating, or freezing—food begins to spoil almost the moment we finish making or harvesting it. If you don't take care of your freshly picked tomatoes, your just-slaughtered game, or your simmering soups in a timely manner, you'll have to throw them away (or worse, they might make you sick). That's lost money, energy, and time—all things we can't afford to waste.

The best way to avoid this from happening is by preserving the food. In this chapter, I discuss the fundamentals of food preservation, why it's important, and share essential information that applies to all preservation methods.

A QUICK HISTORY

It may sound grand but it's true: The desire to preserve food is one of the main driving forces behind the development of human civilization and the growth of communities. Having food reserves allowed humans to do things other than hunt and gather. The ability to keep food from spoiling made it so that people could remain in one place and build a community, instead of following the bounty of the seasons. Conversely, preserved foods enabled travel, encouraging cross-cultural encounters and learning. They allowed people to survive times of difficulty or crisis.

All cultures around the globe preserve food. The temperature, geography, and foods specific to a particular region dictated the preservation methods developed, and the foods we see today offer insight into the history of how cultures influenced each other. What a delicious history!

If you think about different regions' cuisines, you can see how this worked. For example, in regions like Scandinavia, the sea provided an abundance of fish and salt. Coupled with chilly weather, this resulted in the creation of Gravlax , which is salmon cured in herbs and salt. Likewise, in places like the American Southwest, the dry heat and abundance of livestock created ideal conditions for the creation of beef jerky (Soy Beef Jerky).

Different preservation methods arose from trial and error, combining other methods, changing ingredients, and playing with time—some results were delicious; some not so much. Successful preserved foods were adopted into a culture's cuisine, and as people traveled and shared foods more often, the more preserved foods evolved. A perfect example is Korean kimchi, which is traditionally made with spicy red peppers.

Peppers aren't native to Korea, however, and only came to the country in the early 17th century, so the dish as it's known now is a recent adaptation.

It is virtually impossible to put exact times on when preservation methods came to be. Many of these "discoveries" were not noted, they were just consumed! The exception is the discovery of modern food preservation methods and tools, like the invention of the freezer in the 1940s.

Although food preservation has been practiced for thousands of years, it went out of fashion around the 1950s and '60s in the United States. The popularity of the home refrigerator and wide availability of commercially processed foods made store-bought items enticingly convenient. And rightly so: food preservation projects take time. So, the food preservation movement stayed relatively quiet in mainstream American culture for several decades after that.

Then, there was a shift in the early 2000s—people started paying more attention to where their food came from. The popularity of gardening and farmers' markets started a strong movement toward seasonal eating. The DIY (do-it-yourself) movement also emerged—people took up sewing, knitting, and home renovations. Home food preservation became popular again, as gardeners, chefs and curious food lovers rediscovered how delicious and satisfying these foods were. Plus, in addition to learning old skills, modern technology makes preserving today safer and easier.

So, the next time you harvest a garden bed of tomatoes, pick a bucket of lemons from your tree, or visit a farmers' market and buy a bunch of strawberries, think of it as an opportunity to take part in a historical movement.

SAFE FOOD PRESERVATION METHODS

The common thread woven among all food preservation methods is this: Preservation inhibits the growth of microorganisms and other factors that result in food spoilage. It eliminates spoilage while maintaining (and, often, improving) the flavor and texture of food.

Okay, a bit of biology . . .

Spoilage is caused by many factors: enzymes, microorganisms, and physical damage, plus the most unstoppable one—time, which is why it's important to use a preservation method quickly after sourcing the food.

Enzymes: These proteins speed up chemical reactions; in the case of food, enzymes help the plant or animal grow. Enzymes are still at work even after harvest, and without preservation, they will continue to change the food (think overripening).

Microorganisms: These tiny organisms are all around us all the time. They live everywhere, so don't even think you can get rid of them. Some are good, like *lactobacilli* , which are needed for fermentation; and some are bad, like molds, nasty bacteria like botulism, and certain types of yeast.

Physical Damage: Dehydration, extreme moisture, punctures, bruises, wilting, and tears all result in deterioration and eventual spoilage of food. So, pay attention to your food, because it will tell you when it is going bad!

When choosing from the following preservation methods, determine the best method for the meal or ingredient you want to preserve, as not all methods work for all foods. You also need to think about what you intend to do with the preserved item. For example, if you want food for a backpacking trip, freezing it is probably not the way to

go. If you don't like sour tastes, avoid fermentation, or try a few more types of fermented foods before investing in food and tools (and time!) to make fermented goods. Luckily, there is typically more than one preservation method for almost any food; for proof, check out the Preserving Anything index page 231.

Canning

When I teach classes, I tell students that the rough version of canning is putting food in a jar, using heat to kill every organism that can live in it, then "locking the door" by sealing the jar so no other organisms can come in. In more technical terms, canning involves heating food in sealable jars to a temperature that will destroy microorganisms and disable enzymes. The process of heating and cooling the jars forms a vacuum seal, stopping bacteria from entering the container so the jar can be stored at room temperature. Canning requires specific equipment and tools as well as your full attention to make the recipes and process the jars. But when done successfully, this method leaves you with a shelf-stable supply of food at the ready.

There are two types of canning: water bath and pressure. The pH, or acidity, of the food you work with will determine which canner/processing method you use. High-acid foods, including berries, citrus, and stone fruits, for example, are perfect for water bath canning, whereas meat, eggs, dairy, and vegetables are low-acid foods that need to be pressure canned.

WATER BATH CANNING

Acidic foods, such as fruit preserves and pickled items, are processed in boiling water, usually in a water bath canner. Foods with an acidity of 4.6 or lower on the pH scale are considered "high-acid" foods. Because high-acid foods are naturally inhospitable to botulism, bacteria that can survive temperatures higher than 212°F (the temperature of boiling water), processing high-acid foods in boiling water renders them safe.

PRESSURE CANNING

Foods with an acidity of 4.6 or higher on the pH scale are considered "low-acid" foods and cannot safely be processed at 212°F. Botulism spores can survive at this temperature and thrive in an environment without oxygen (aka the contents in a jar). To destroy these spores or render them inert, the temperature must be brought up past the boiling point, to at least 240°F. The only way to do this is using a pressure canner, a specific piece of equipment designed for canning low-acid food.

Fermentation

This preservation method probably happened by accident. Fermentation is the change in food by the growth of beneficial bacteria or yeast. That's right, in this case, microorganisms are good. In a specific salt solution, *lactobacilli* (and other beneficial) bacteria thrive, and harmful bacteria cannot. These bacteria create lactic acid, which provides the distinct tart, pickle-y flavor people love. This preservation method is relatively inexpensive to do, but you need to pay attention to your recipes and the process takes time (as in days, weeks, even months). Fermentation has had quite a revival in the past decade, thanks to the much-ballyhooed benefits of probiotics and a wider appreciation of foods such as kimchi and kombucha.

Dehydration/Drying

Probably the oldest form of preservation, dehydration can be the easiest and most affordable method to use. Plus, many items can be dehydrated and they make great snacks. You can use the power of the sun for some foods, or you can get fancy and buy a dehydrator. I have an old 1950s-era gas oven that has a strong pilot, so I use that for dehydration. Dehydration works because mold and microorganisms that can spoil food need moisture to grow, and although eliminating water from food does not kill these microorganisms, it does render them inactive. Items like beef jerky, fruit and vegetable leathers, and dried herbs are examples of dried foods.

SAFETY DOS AND DON'TS

Food preservation methods generally call for simple skills; you don't have to be a five-star chef to preserve food safely. What you do have to do is pay attention. The following are some guidelines to think about when embarking on your food preservation journey.

DO:

- Make sure you have everything you need for your project before you start.
- Follow the recipe exactly as written. I've added flavor variations here and there, so feel free to try them, but do not change the core ingredients, as this might affect the ability of the preserving agents to work properly.
- Label everything you make. You may think you'll remember what you make and when, but, believe me, you won't.
- Keep a journal or notebook to track projects in. I like to write down whether or not I liked the recipe, or how I used it.
- Pay attention to everything. Check the quality of your ingredients and maintain and inspect the equipment you use. Attention to detail matters and is at the core of any food preservation method.
- Be as clean as possible. Wash your hands often, even more than you think necessary. If you have long hair, tie it back. The less possibility for contamination, the better.
- Clean and sanitize your workstation after every step; wash and dry tools and equipment properly.
- Store all ingredients, tools, equipment, and finished products correctly, or as the recipe instructs.
- When in doubt, trust reliable sources like the National Center for Home Food Preservation, United States Department of Agriculture, or university extension programs for troubleshooting (see the Resources section and the troubleshooting charts in each chapter).

DON'T:

- Make up your own recipe. This is especially specific to canning recipes.
- Ignore your preserved food mid-process (which, for some foods, can take weeks). If you commit to preserving, commit to the time and procedure.
- Use or consume an item if you have any question about its viability. Use the old preservation proverb: "When in doubt, throw it out!"
- Cross-contaminate foods. If you are working with raw meat and fish, use separate designated cutting boards for these foods and either wear gloves while handling them (and remove the gloves before touching anything else), or wash your hands immediately after handling these foods. Clean and sanitize all work surfaces and tools that come into contact with meat and fish, especially in their raw state.
- Be careless. Many recipes use boiling water, fire, sharp knives, shredding tools, and more. Accidents happen, so move with intention and be aware of your surroundings. Slow down and enjoy the process.

Salting and Smoking

Salting, also called *curing* , and smoking foods work in the same manner as dehydration, except they only remove some of the moisture in food, while also creating a protective barrier against contamination.

Salt draws out water from food while creating barriers around it that cannot be penetrated by bacteria, since most bacteria cannot tolerate salt. The reduced water means the food has a more concentrated flavor elevated by the salt—like ham.

Smoking involves enclosing food in a space with a smoldering fire haze for hours. Over time, the chemicals from the burning wood cover the food and prevent the growth of microorganisms. The process helps food last longer and gives it a distinct flavor that can change depending on the techniques or woods used. You often see this process used to preserve animal proteins, like smoked trout.

Both smoking and salt curing take time and care. Specific ingredients and equipment can range from affordable (or free, if you have access to smoking woods) to expensive (for top-quality meats and a premium smoker).

Freezing

Along with dehydration, freezing was one of the original methods of food preservation. Drastically reducing the temperature of foods prohibits bacteria growth and enzyme functions until the food is defrosted. Freezing is great because it keeps the structural integrity of the food, so you can easily preserve a variety of items—from jams to meats to prepared foods. Before freezers, freezing was determined by geographic location and time of year. Now, freezing is probably one of the easiest ways to preserve foods and it allows them to retain much of their nutritional value. You are limited only by the size of your freezer and the cost of running and stocking it.

WHAT CAN I PRESERVE?

The answer is, just about anything! Before you try, though, determine: How much time do I have? What flavors do I enjoy? What is the purpose of the end product? Do I have the necessary equipment? And, most importantly, what ingredients am I working with?

Regarding ingredients, think about the quality and freshness of the item, how fast you need to preserve the food before it spoils, and what method(s) is best suited for the ingredient. Refer to the Preserving Anything index to find out which preservation methods work for a given food.

Fruit

> *Best preservation methods: water bath canning (jams, salsas, sauces, and syrups); fermenting (kombucha and shrubs; sturdier fruits can be pickled); dehydrating; salt curing (citrus); smoking (stone fruit); and freezing*

Fruits are the ripened ovary of a flowering plant; you can tell they are fruits if they contain the seeds of the plant (so, yes, cucumbers and tomatoes are fruits). They are soft, sweet, and juicy, and lend themselves to preservation methods that highlight the flavors we love so much. Their natural sweetness and high acidity make them ideal for water bath canning in the form of jams, salsas, and sauces. These qualities also contribute nicely to syrups and add sweetness to drinkable preserves like kombucha and shrubs. In addition, fruits are perfect for freezing and dehydrating. Sturdier fruits like apples, hard plums, pears, and even watermelon rinds can be fermented or pickled.

The best fruits are harvested during their peak season and should be free of blemishes or signs of damage. In a few instances you'll see fruits salt cured, such as Preserved Lemons . But smoking fruits for preservation is not common, although it is a wonderful way to impart flavor; for instance, you could try smoked peaches (Smoked Peach Salsa) in a cobbler.

Vegetables

> *Best preservation methods: water bath canning (using vinegar or acid); fermenting; pressure canning; dehydrating; freezing*

For the sake of this discussion, vegetables are the other edible parts of the plants that are not the fruit: the leaves, roots, and stems. What they lack in sweetness, they make up for in structure. The lack of acidity in vegetables means that if you want to water bath can them, they must have an acidifier in the form of vinegar. But, if you prefer to avoid tartness, vegetables are perfect for pressure canning. Like fruits, most vegetables freeze and dehydrate well and their texture is ideal for fermentation. Select the freshest, crispest vegetables possible, without soft spots or blemishes.

Herbs

> *Best preservation methods: dehydrating or (in some cases) freezing*

Herbs are plants known for their aromatic properties, used to enhance flavors; they are more of a secondary ingredient. (Ever eat a handful of rosemary?) They can be delicate, leafy, or tiny, and their quantity doesn't need to be large to make an impact. Because of their secondary role, herbs can be used in all preservation techniques, as

they enhance the overall flavor. Preserved alone, herbs do best dehydrated or, in some cases, frozen. Choose fresh herbs without elements of decay and clean them well, because there are lots of places for dirt to hide.

Meat and Game

Best preservation methods: pressure canning, salting/smoking, dehydrating, and freezing

Animal proteins are low in acid and can spoil and lead to serious illness very quickly, so move swiftly and use extreme care when preserving meats and game. Select only meats of the best quality for preservation and store them in the refrigerator (40°F or colder) until you are ready to process them. If you cannot get to your project for a few days, you must freeze your meat, so plan accordingly.

Seafood

Best preservation methods: pressure canning, salting/smoking, and freezing

Like meat and game, seafood is low-acid and can spoil and lead to serious illness very quickly, so use the same precautions. Select only the best quality seafood for preservation—or better yet, catch your own! Keep seafood in cold storage/refrigeration (40°F or colder) until you are ready to process it. If you cannot get to your project for a few days, you must freeze your fish, so plan accordingly.

Beans and Grains

Best preservation methods: pressure canning, dehydrating, fermenting, freezing

A bean is the seed from a certain group of flowering plants; these “seeds” are larger than what you see in fruit and, therefore, can be treated as their own entity. Some beans can be eaten in their fresh casing or “pod,” and others are dried and removed from the pod as the seed itself. When fresh, beans can be pressure canned, dehydrated, fermented, and frozen. Nature does some of the work with certain beans and dehydrates the pod, like pinto beans or black beans, allowing a dried bean to be rehydrated later and pressure canned, fermented (as with soybeans), and frozen.

Grains are seeds from grasses. They include corn, wheat, and rice. Like some beans, nature dries grain seeds to be used later, but humans have utilized preservation methods to manipulate them in several ways. A popular method for grain preservation is fermentation. Fermented grains are used to make things like bread (sourdough), beer, and distilled spirits. Cooked grains can be frozen; fresh corn kernels can be pressure canned; and unbaked bread dough can be frozen.

FOOD PRESERVATION STAPLES

As you will see in later chapters, certain ingredients appear repeatedly, so let’s just make their big introduction here and explain why they are always invited to the party. Where relevant, these ingredients are covered in more detail.

Produce

It all starts with the ingredients you want to preserve. Always choose the best quality you have access to and make sure the produce is free of blemishes, bruises, mold, and signs of deterioration. The better the fruit and vegetables you use, the better the outcome when you finally enjoy what you have saved. Preserve produce as soon as possible after sourcing to retain its freshness. This involves planning, so look at your calendar before shopping or harvesting.

Salt

Probably the second most-used ingredient, you will see salt in many preservation recipes because it helps prevent the growth of unwelcome microbes and adds flavor. The important thing is the kind of salt you use; there are various types to choose from, including lots of specialty salts available online.

Kosher salt, specifically Diamond Crystal, is the type I prefer and use for recipes in this book, but a basic non-iodized table salt will do when you are simply using small quantities for seasoning foods. It is important to use the same brand I use because the volume measures will be equivalent to those in this book. With other salt brands, which may have smaller or larger salt crystals, you might not be using the precise quantity called for in my recipes. For instance, Morton's kosher salt tastes much saltier than Diamond Crystal because the salt grains are smaller. In small quantities, it is okay to substitute one brand or type for another, but in recipes where salt is key to preserving the food, as with the fermenting and curing recipes, stick with the stated brand and quantity.

If using table salt, avoid salts with iodine as they can make some foods (particularly canned foods) cloudy in appearance. For preservation, iodine is not needed. As you learn more about food preservation and want to experiment, I recommend light gray Celtic sea salt (available at health food stores and online) for seasoning, which contains an abundance of beneficial minerals and has a slightly different flavor.

Vinegar

Vinegar is an important ingredient in preservation. It gives beautiful flavor to foods, is an acidifier, and is a preserved food itself! The most important thing to know about vinegar is that it must have an acidity of at least 5 percent (it should be indicated on the label; do not use the vinegar if it doesn't list the percentage acidity). If it says 4 percent or less, it should not be used for preservation because it does not have the required acidity to create a safe process (rice vinegar, for instance, is usually 4 percent). For the same reason, do not use homemade vinegar for preservation; that's for seasoning only.

The staple type of vinegar you should keep on hand is distilled white vinegar. It is the most versatile of vinegars, as it doesn't have any secondary flavors. I also use apple cider vinegar (for its lovely bite) and red wine vinegar (for its slight sweetness), both with 5 percent acidity. Using these vinegars instead of white distilled vinegar is the first way you can experiment with a recipe while still being safe (although red wine vinegar will discolor items, so take care).

For fermenting, look for vinegars "with the mother," which is a gelatinous-looking glob in the bottom of the bottle. It sounds gross, but this is the beneficial bacteria that makes vinegar, well, vinegar. It may look like the vinegar has gone bad, but it is just

the opposite. Vinegars with the mother are wonderful to start fermentation projects, as they have a little helper to get things going.

Sugar

It has a bad rap, but sugar serves an important function in food preservation. It enhances the sweetness of an ingredient, sure, but once it is heated, it helps foods retain their color and makes them denser, which prevents microorganisms from penetrating into them. I mostly use granulated sugar in this book. Sugar can be removed if it is in small quantities in a recipe, but where it is the major ingredient, I don't suggest altering it. One substitute for sugar is honey, but you cannot fully replace sugar with it—use only 25 percent of the total quantity, because this can alter preservative qualities and/or consistency. For smoking or brining, brown sugar or molasses can be used instead.

Herbs and Spices

There are so many herbs and spices—not to mention combinations of them—that entire books can be (and have been) written about them. Herbs and spices, while smaller than fruits, vegetables, and proteins, can add a big flavor punch and change flavors completely. Herbs and spices are secondary to preserving; they are used to enhance other major ingredient players or bring out new flavors in them.

Fresh herbs are delicate and spoil quickly, so if using them in a recipe, don't delay. Inspect each herb because there can be areas of spoilage that need to be removed. I like to check my fresh herbs, wrap them in paper towels, and refrigerate until use.

Purchase dried herbs in smaller quantities because they can go stale if they sit for a long time. Also, a little goes a long way; dried herbs are more concentrated in flavor than fresh.

Water

For washing equipment, cleaning ingredients, cooking, and preserving, water is essential. For those who have hard water, I suggest adding a small amount of distilled white vinegar when canning and brining. It is not vital, but finished projects will have a higher quality. Unsure whether you have hard water? A few signs include calcium or mineral buildup around faucets or shower heads, or "cloudy" spots on glasses (after washing). At my house, I also notice mineral deposits in my hot water kettle.

NECESSARY TOOLS AND EQUIPMENT

The following are the important tools and equipment you need for the recipes and methods in this book. Preservation projects don't need to be expensive, but you can end up buying a lot of stuff. Use this list for the basics to get started and build your collection once you become familiar with the different methods. You'll find more specific lists of tools in each chapter.

Cheesecloth

You will need this loosely woven cloth to strain jellies, cover jars for fermenting, and make spice bags for curing. Oh, and cheesecloth will help you make cheese, too!

CAN I USE LESS SUGAR AND SALT?

The answer is yes . . . and no. The real question is whether there is a preservation method or recipe that uses less sugar or salt, instead of manipulating a given recipe.

If you are making a sweet preserve (e.g., jam, jelly, marmalade) to be water bath canned, you should not alter the sugar much. Sugar acts as a preservative and works with pectin to create a desirable texture (especially important in jellies). When preserving foods for shelf-stable storage, the sugar also helps maintain the food's flavor and color and makes the jar last longer once opened. That said, it is possible to can fruit with fruit juice or honey (only replace 25 percent of the total sugar with the honey) with smaller amounts of sugar, but the fruit will go bad more quickly once opened and its consistency and color will be less vibrant.

If you want to trim the sugar, change the method. Freezer jam is a popular way to enjoy sweet preserves without a lot of sugar. You can also make a fruit leather without sugar. Or look for a recipe that uses sugar as a flavor component rather than as a preservative; then it's okay to leave out the sugar. For example, if you are making Classic Bread and Butter Pickles , the main preservative is vinegar, not sugar, so you can leave it out. It will alter the flavor, though.

Like sugar, it is possible to reduce salt if it is a flavor component and not a main preservation ingredient. Preservation methods such as fermentation and salt curing/brining depend on salt to protect the food from harmful microorganisms, so cutting the quantity puts the food at risk for contamination. If your goal is to use less salt, find a recipe or method to preserve your foods that requires less of it, like freezing, dehydrating, or pressure canning. For ideas, check out the Preserve Anything index page 231, which will point you to all the possible ways to preserve a given ingredient.

Cutting Boards

If working with meat and seafood, it is smart to have one board dedicated to these products to limit cross-contamination. A food-grade plastic board that you can throw in the dishwasher works well. Use wood for produce, not meat.

Food Scale

To create the recipes, you will need a food scale. A recipe can call for five tomatoes but tomatoes come in all shapes and sizes, so the only way recipes can be duplicated is by weight. Food scales are available online and you don't need to spend more than

$25 for one. Where appropriate, the recipes will have quantity measurements, volume measurements (cups, tablespoons), and weight.

Jars

Jars come in all sizes and you'll find, as you keep preserving food, that your collection of jars will grow. Depending on what you're planning to make, you'll need anywhere from half-pint (for small quantities of jams) to gallon jars (for large-batch fermented items).

Canning requires specific glass jars with a two-piece lid, but for fermentation projects you can use any kind of glass jar. Wide-mouth jars are great for larger items like canned peaches—they are also easier to clean—whereas a narrower-rimmed jar is handy for things like pickles, where you want vegetables to stay below the brine. But this is a matter of preference; if a recipe calls for a pint jar, you can use a wide-mouth or regular jar. Glass jars are also perfect for storing dehydrated foods. Whatever you use your jars for, it's important to inspect them for cracks, chips around the lip, or any signs of rust on the lids before you start. You can use jars indefinitely, as long as there are no signs of damage.

Journal and Writing Implements

These items may seem strange to put on this list, but my books are filled with notes on what I make, and I keep a small journal to write down thoughts on ingredients and ideas on recipes. A permanent marker is also important to label everything you make.

Knives

You will be cutting fruits, slicing vegetables, trimming meats, and chopping ingredients, and a knife is your workhorse for these jobs. A basic chef's knife is a great all-purpose knife that can be used for just about any job, whereas a paring knife makes detailed work easier. Make sure your knives are sharp—they're safer and easier to use; take them to a professional sharpener, or purchase a knife sharpener and do it yourself.

Mixing Bowls

Small, medium, and large metal mixing bowls are staples for food preservation projects. They keep ingredients organized and make washing, mixing, macerating, and combining easy. Using metal means you don't have to clean up broken glass when you drop them—because you will drop them at some point. They are also lightweight, inexpensive, stackable, and easy to clean.

Nonreactive Pots and Pans

Nonreactive pots and pans, made of stainless steel, ceramic, glass, or enamel coated, won't distort food colors when interacting with acids. Do not use pots made from aluminum, cast iron, or copper (although some use copper for jam making, it is not necessary). A 2-quart pot for small projects and a large Dutch oven for larger projects, like making Garlic Tomato Sauce , are a good start. Select pots and pans with heavy

bottoms. Many items (like jam) require long cook times and a heavy bottom distributes the heat more evenly and helps avoid scorching.

Plastic Bags

Heavy-duty resealable plastic bags are great for packing food for the freezer, creating a weight for fermenting, and keeping meat clean and contained while it cures. Use a sturdy brand with strong closures, like Ziploc freezer bags. Quart and gallon bags should cover most projects.

Spoons and a Ladle

You will constantly be mixing items and pouring them into heavy- duty resealable plastic bags or other vessels, so a wooden spoon and stainless-steel ladle will come in handy.

Thermometers

A meat thermometer is an essential tool you'll use in the smoking chapter, so you know when food is cooked properly. If you're planning to dehydrate in your oven, an oven thermometer is also a good investment, as the stated temperature can often be different from the actual temperature. Luckily, both tools cost only about $15, though you can certainly invest in a fancier probe thermometer for about $100.

Timer

Whether its counting down a 10-minute processing time for jam in a water bath, 45 minutes in a pressure cooker, or 12 hours in a smoker, you need to keep track of time to make sure your foods are properly processed, fermented, cured, or dried. Some things will be done in minutes; others take hours, days—or even weeks—so, make sure you have a way to keep track of time.

NICE-TO-HAVE TOOLS

The preceding list details the basics to get started, but there are other tools that make things easier, particularly if you focus on certain methods and techniques.

Food Mill

A food mill separates the seeds and skins from fruit and strains food to make it smoother. This tool is great for creating smooth tomato sauces, fruit butters, and soups. You can also use it to improve your mashed potato game. It runs about $50.

PRESERVING THROUGHOUT THE YEAR

Traditionally, people preserved foods at the peak of harvest season, usually in warmer months when gardens were overflowing and there was an abundance of food. Taking advantage of large surpluses meant there would be much

more to offer during the leaner times of winter. Canning in the brutal heat of summer, however, is never fun, and although heat is great for dehydration, it's not as great for fermentation or freezing.

With modern amenities today, we don't have to worry about survival. Instead, it's more about enjoying the bounty of each season. In August, when it's really hot, I freeze my roasted New Mexican chiles to preserve for cooler weather. I make a list of projects I would like to cover for the year and post it on my fridge so I can thoughtfully plan to preserve the best of each season—and even find new ways to enjoy my favorite ingredients. A large harvest presents an opportunity to have friends and family help with processing; this way, we spend time together, they learn skills, and we all reap the benefits of delicious food.

Food Processor

This motor-driven kitchen appliance is great for shredding but also combining and crushing fruits. A food processor can be an investment, as models can range from $60 to hundreds of dollars, but it's a versatile kitchen tool you'll turn to repeatedly.

Mandoline/Shredder

This tool is meant to cut items consistently thin, like what you do with a knife, but faster, better, and more uniformly. A mandoline is great for shredding cabbage and other tough vegetables. Use caution because the blade is sharp and it is very easy to cut yourself on this tool, so use the hand guard or a folded kitchen towel to product your fingers, or buy cut-proof gloves.

Vacuum Sealer

These kitchen machines range from small, inexpensive, battery-powered units to large countertop machines that cost hundreds of dollars. Vacuum sealers remove all the air from a plastic sealer bag and seal the food in it, resulting in longer shelf life for dehydrated and cured foods. They also reduce the total volume that stored produce can take up, useful if you have limited freezer space.

HOW TO USE THIS BOOK

So, now that you have a bit of a foundation to get started on your adventures in food preservation, this is how the rest of the journey will look. I'm already hungry.

The Structure

Each chapter starts with an introduction to the preservation method covered. I'll discuss some ingredients and equipment particular to the method, as well as provide a step-by-step overview of how the method works. Then, I'll present recipes using that method, a collection of much-loved classics with some new flavors. I include flavor

variations where appropriate, so you can make things your own. The recipes contain ingredients that everyone should be able to purchase and they are meant to be beginner friendly. My hope is you will continue preserving after this, not turn away because it seems difficult. I've thrown in a few slightly more advanced recipes you can try once you are comfortable with the process. Most chapters include charts offering the basic procedure to preserve basic items, and every chapter has troubleshooting information.

The Recipes

In each recipe you will find:

Timing: This includes the preparation, cook, and processing or curing times, so you can plan accordingly.

Yield: The book includes small- and large-batch recipes, depending on the food. Generally, your yield will match the yield stated in the recipe, if you use the weight of the ingredients called for in the ingredients list.

Difficulty Meter: This tells you the difficulty level of a given recipe—easy, medium, or difficult (when you're ready).

Ingredients: The recipes contain easy-to-source ingredients. I've generally avoided anything too exotic and made sure the recipes contain as few ingredients as possible.

Procedure: The step-by-step instructions often refer to the general procedure at the beginning of each chapter, but they will always set you on a clear path toward successful and delicious preserved food.

Cinnamon Apple Butter , and Simple Strawberry Jam with Variations .

CHAPTER TWO

Water Bath Canning

WATER BATH CANNING 101

Water bath canning is an iconic method of food preservation. Having home-processed jars of food in your pantry is rewarding, and after you learn how to do it, you'll realize how easy it is. Plus, once you start enjoying your high-quality canned foods, you will taste the difference.

One key factor determines what can and cannot be water bath canned: acidity. Acidity can be present either in the raw ingredient itself, like naturally acidic fruits, or it can be added to food, like vinegar to a pickle. Acidic foods prohibit the growth of most bacteria. Those bacteria that can survive in an acidic environment are destroyed at 212°F, the temperature at which water boils—hence, a boiling water bath.

The term pH (potential of hydrogen) is the measurement of the acidity—or its opposite, alkalinity—of a product. The scale measuring pH ranges between 1 (most acidic) and 14 (least acidic). Acidic foods with a pH of 4.6 or less are safe to process in boiling water—also known as water bath canning. This category of foods includes fruits and fruit preserves (like butters, jams, and marmalades), pickles and many types of tomatoes, and even fermented foods such as sauerkraut (though I don't recommend canning it, thus killing all the good bacteria in this wholesome food).

Vegetables in their natural state, without the help of vinegar, are not acidic enough for water bath canning and must be pressure canned (discussed in the next chapter). *While small flavor tweaks are fine, do not, under any circumstances, manipulate the acidity of a recipe when water bath canning.*

Essential Ingredients

Most ingredients for water bath canning can also be used for other methods of food preservation. There are only a few items, like vinegar and pectin, particular to water bath canning that are not used in other preservation methods. Ingredients particular to water bath canning include:

Pectin: Pectin is a carbohydrate found in the cell walls of fruit and vegetables. It reacts with sugar, acid, and heat in fruit preserves to gel the product. Pectin levels vary depending on the type of fruit, so the consistency will naturally differ between, say, strawberry jam and orange marmalade. Fruits with high quantities of natural pectin include apples, citrus (in the skin, which explains why marmalade is naturally firm), cranberries, plums, and quince, whereas apricots, blackberries, blueberries, grapes, and peaches have low pectin levels.

Pectin is not necessary to make sweet preserves. But if you are looking for that typical soft-but-scoopable consistency for recipes like jellies (which is gelled fruit juice), you must add pectin. Pectin is available commercially (Sure-Jell, Ball, and Certo are common brands), including a brand that works with low-sugar recipes called Pomona's Universal Pectin. It comes in powdered and liquid forms and can even be made from scratch. But no matter what type of pectin you use, do not alter the amount specified in the recipe.

Produce: I've said it before, and I'll say it again: The quality of whatever you make depends on the quality of the ingredients you use. Avoid anything with blemishes, bruises, mold, and signs of deterioration. Preserve produce as soon as possible after sourcing it to retain its freshness.

Salt: I recommend Diamond Crystal kosher salt without iodine for all projects unless noted otherwise.

Spices: Ground spices can alter the color of preserves and their flavors intensify over time; keep in mind that your jarred items might sit for months, so what tastes good in the pot can become overpowering in the jar. Instead, I use whole spices and herbs, which are less aggressive for this method of preservation, and, in some cases, enhance the aesthetics of your preserves. Don't alter the quantities of herbs and spices until you've become familiar with the recipe.

Sweeteners: Sugar is used as a flavor enhancer in pickles, dissolved in liquids to make syrups, or as a main ingredient in sweet preserves, breaking down the fruit, gelling it, and creating lovely consistencies while retaining color. Beet sugar, cane sugar, or honey are acceptable. Do not use artificial sweeteners as they can discolor or change the flavor of the fruit. Fruit juice is another alternative.

Vinegar and other acids: Vinegar is the main preservative in water bath pickles. It creates the acidic environment that brings the pH below 4.6 and makes water bath canning possible. When using vinegar for pickling, you must use a vinegar of 5 percent acidity, such as white distilled vinegar or apple cider vinegar. Check the bottle

for the 5 percent acidity label, as some vinegars are weaker than this (most notably, rice wine vinegar—delicious for cooking, not safe for canning). Vinegar can also be used as a flavor component.

Acids other than vinegar include citric acid and bottled lemon juice. Always use store-bought lemon juice, not freshly squeezed, to ensure that the juice is a consistent pH for recipes. Citric acid, available online, is discussed in the section on tomatoes .

Essential Tools and Equipment

Although you can jerry-rig some tools, having the right equipment makes canning a lot easier, especially when just starting out. Luckily, this equipment is neither hard to find nor expensive. All these items, except the canner, are used in pressure canning as well.

Canning funnel: This funnel fits perfectly on top of a canning jar so you can easily pour or ladle hot items into the jar without burning yourself or spilling food on the rims or counter. Avoiding spills is important, not just because they're annoying and messy, but also because residue on the jar's rim can prevent the jar from sealing properly. If you are prone to making a mess, invest in a funnel. You can also pour food into a measuring cup, then pour it into jars, but canning funnels are easier to work with.

Canning jars: Good old-fashioned Mason jars with two-piece canning lids are the best jars to use. Whether you buy the glass jars new or reuse them, inspect the jars for cracks, chips, and any irregularities around the lip of the jar each time you can because imperfections can affect the seal of the lid or cause shattering during processing. Do not use jars that are not designed for canning (as much as we want to recycle, use them for other preservation methods, just not canning).

Canning pot: Canners designed specifically for water bath canning are wide and tall, to fit multiple jars inside. They are thin, so the water heats fast, and they have a rack that elevates the jars off the bottom of the pot and lets you lift and lower jars easily. But are they entirely necessary? No. You can use a large stockpot filled with water. You just need to make sure of three things: The pot must be deep enough to allow the water to rise 1 inch above the jars you are processing; you must have some kind of barrier between the bottom of the pot and the jars (some people use old sealing rings to separate the bottom of the pot from the jars); and the pot needs a lid to retain enough heat to properly process the jars.

Cooking pot: This is the container you'll use to cook jams, jellies, and marmalades, and heat vinegar with vegetables for pickles and relish. It's essential to use a nonreactive pot, such as one made of stainless steel, enameled cast iron, glass, or ceramic, because these materials won't affect flavor or distort colors when interacting with acids. I prefer stainless steel because big pots made of this material tend to be

inexpensive. Look for a pot that holds about 10 quarts, has a heavy bottom, and is wider than it is tall because it will heat more evenly, thus avoiding scorching.

CANNING TERMINOLOGY

You may see these words pop up in recipes, and it's helpful to know what they mean.

Finger-Tight: This describes the proper way to close jars when canning. Add the rings and gently close them to what is called "finger-tight" by keeping your fingers straight on the ring and closing just until you encounter resistance, not any tighter. During the canning process, air must be able to escape; if you screw the ring on too tightly, the air will be trapped.

Freezer Test: I refer to this several times in this chapter for jam and jelly recipes. Essentially, this is a way to ensure a jam or jelly has reached the proper texture. To do a freezer test, place a small plate in the freezer until it's cold. Spoon a small amount of cooked jam or jelly onto the cold plate and let stand for 1 minute. Drag your finger through the produce. If the jam or jelly is stiff enough so your finger leaves a trail, it's ready. If the jam runs back together, let it cook longer.

Headspace: This the distance between the item you are canning in the jar and the top of the jar, and it ranges from ¼ inch to 1 inch, or a little more. It's essential to follow the suggested headspace requirement, as you might not get a good seal on the jar if you don't.

Hot Pack: Precooking an item before putting it into the jar to process allows you to fit more in the jar. However, not all produce can be treated this way.

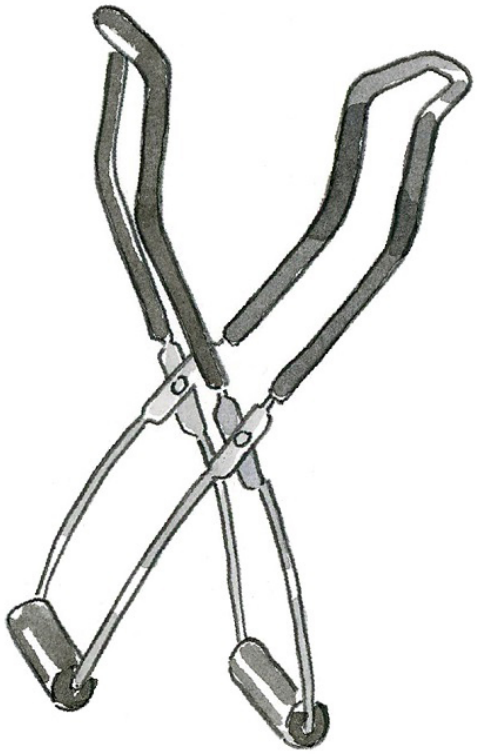
Processing: This term is useful for pressure canning as well. Processing is basically the cook time of the jars. The processing time starts once the water bath or pressure canner is at the correct temperature (a full rolling boil) or pressure level, so only start the processing timer once you've achieved this temperature or pressure level.

Raw Pack/Cold Pack: This entails placing raw produce in a jar, covering it with boiling liquid and processing the jar. This method is ideal for produce that is delicate (like cucumbers and other delicate fruits, when you want to maintain shape and texture) and when precooking, then subsequently processing, a food that will drastically alter the food you are preserving. Nobody likes mushy cucumbers.

Cooking utensils: You'll need a wooden spoon or spatula for mixing or scraping the bottom of the cooking pot so foods do not scorch.

Jar lifter: These tongs are designed specifically to move hot jars in and out of a canner without burning your hands. They are useful, but if you have tongs with a

rubber end, try those. This item, the canning funnel, and the lid lifter/bubble remover are often sold as a kit.



Lid lifter and bubble remover: Technically, these are two tools, but sometimes you can find one tool that does both. A lid lifter is a magnetic wand used to retrieve hot/prepped lids from simmering water before attaching them to the jars. You can also use tongs or a fork for this. A bubble remover is a plastic wand used to release pockets of air that may be trapped inside a jar with chunky preserves. A chopstick works equally well.

Small sauce pot: This is useful for preheating lids so they are ready to go onto the jars. Preheating lids is a step in recipes where necessary.

Two-piece lids: Canning jars have a two-piece lid, including a disk with a coated underside that seals to the jar, and the ring, which keeps the lid secured to the jar during its time in the canner. These typically come with new jars and are sold separately if you are planning to reuse jars. The rings can be reused so long as they are rust-free (which is why you should dry rings after washing them); the disk, once used, cannot be used again.

A NOTE ON ALTITUDE

Before you begin a canning project, it is important to note where, geographically, you are canning. The altitude of your location in relation to sea level will affect processing. Water boils at a lower temperature at a higher

> elevation, but the canning temperature still needs to be 212°F to kill bacteria, even if it's boiling at a lower temperature. Recipes in this book are for an altitude of less than 1,000 feet. If you are above 1,000 feet, adjust processing times for both water bath and pressure canning. Check out the All About Altitude section; this offers more information on how to alter a recipe if you are preserving at higher altitudes and includes an elevation chart of cities in the United States and Canada.

WATER BATH CANNING, STEP-BY-STEP

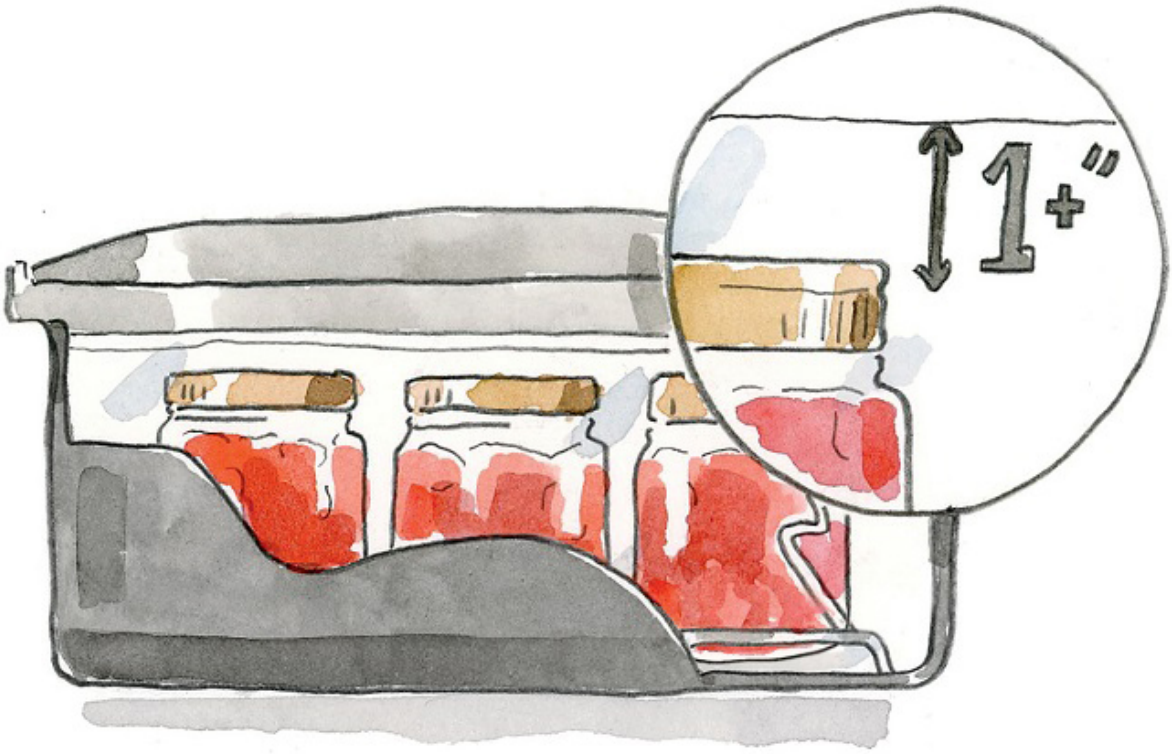
Initially, water bath canning might seem daunting, but after you do it a few times, you will realize it's actually easy. So, just read all the steps thoroughly, work slowly and carefully, and enjoy the process—you've got this! You might also want to bookmark this page; all the recipes in the chapter refer to it.

1. **Check altitude, clean, and start your canner.**
   Check your altitude to see if you'll need to adjust the recipe A Note on Altitude , and All About Altitude . Give yourself the time needed to complete the recipe. When you first attempt canning, it might take more time than you think. Read the recipe at least twice and prepare your kitchen: clean your countertops, make sure there are no potential points of contamination, and check that you have everything you need to complete your project. If the recipe requires resting, standing, or cooling, factor that time into your overall work time. Fill your canner two-thirds full of water and add ¼ cup distilled white vinegar, as this will leave your jars shiny and clean (especially if you have hard water). Put your canner on the stove over high heat and start heating it up. Adjust the heat so the water simmers.
2. **Prep your jars and lids.**
   Inspect your jars and lids for rust, chips, cracks, or other blemishes. I know I say this often, but this is one major reason for seal failure. Separate and wash your lids, rings, and jars. You want to keep your jars warm, so as not to shock them with super-hot food, and since you already have a water bath going in your canner, just put the jars into the hot water. This sterilizes your jars and gives you that extra security of a clean, hot jar ready to go when you need it. Another method of heating jars is to put them in the dishwasher on rinse, or wash the jars and put them in a 200°F oven.
3. **Cook the recipe.**
   Follow the recipe precisely. This is not the time to get creative. Pay attention to consistency and doneness, and don't boil items like pickles for too long because you might cook off too much vinegar. Once you are finished cooking, remove the food from the heat, fill a small saucepan with water, and place it over medium heat. Add the lids to the water. You don't need to boil the lids; you just want to help activate the sealer on the lids to ensure they seal properly. Use your lid lifter or tongs to retrieve them when you are ready to use them. Don't heat the lids and rings for more than 15 minutes or you might see rust.

A

B

C



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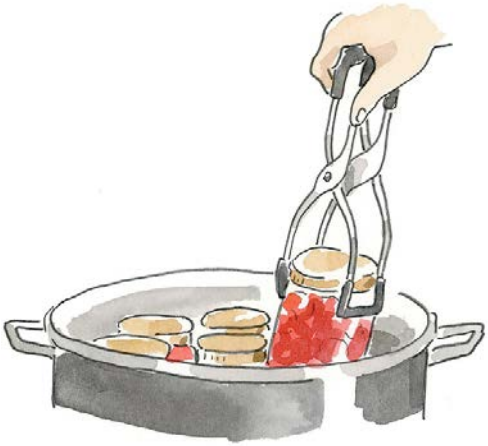


E

4. Fill and clean the jars.

Place the hot, empty jars onto a clean towel on the counter or a cutting board (don't place them on a cold counter; that might shock the jar and cause it to crack), and use your canning funnel to fill the jars to the required headspace (A) indicated by the recipe. Follow it; it's there for a reason.

Carefully run a bubble remover tool or bamboo chopstick around the inside edges of the jars to remove any air bubbles (B). Use a clean paper towel to wipe the jar rims where the lids will be in contact with the jars (C). I like to dip part of a paper towel in the simmering water that my lids are in (carefully!) to help remove

any debris. Run a clean finger around the tops of the jars to make sure they're clear of any food that might affect your seal. Remove the lids from the warm water and place them on top of the jars. Add the rings and gently close them finger-tight .

5. **Process the jars.**
   At this point, make sure your canning water is simmering. Place your jars on the canning rack sitting near the top of the water. Once the rack is full, lower the rack into the water. The jars must be submerged with at least 1 inch of water above them (D). If the processing time is long (more than 20 minutes), you will need 2 inches of water above the jars to account for evaporation. Put on the canning lid and turn up the heat until the water is at a gentle boil. Once the water is at a boil, set your timer to the specified processing time in the recipe. You are now processing your jars!
6. **Cool and store your jars.**
   Once the processing time is up, turn off the heat and carefully remove the canning lid. There will be a lot of steam, so be careful. Bring the canning rack back up to the surface and gently transfer the jars to the towel on the counter (E, on previous page). You might hear "popping" during this time—that means the vacuum is happening and the jars are sealing—victory. Let the jars rest for a few hours, or overnight. The following day, remove the rings and check to see if your lids have stayed down. Do this by gently pressing on the top. If the lid pops up, your seal has failed—just put your item in the fridge and enjoy it now. It's edible, but you can't consider it safe for long-term storage. If the lid stays down, your seal was a success. Label all jars with the recipe name and the date you created it. Make sure the jars do not have any food on the outside. If they do, gently clean them. You can now put the jars in your pantry or other storage.

HOW TO KEEP CUT FRUIT FROM DARKENING IN COLOR

Light-colored fruits, such as apples, apricots, bananas, pears, peaches, and nectarines, tend to turn brown and soft when they're cut and exposed to air, which can affect the fruit when its canned, frozen, or dehydrated. Browned fruit is safe to eat, but unappealing, and preventing browning is easy. You just need to place the cut fruit in acidulated water, also called an antidarkening solution.

To make the solution, combine one of the following with 1 gallon cool water. Place the cut fruit in the solution as you work.

- ¾ cup lemon juice
- 1 teaspoon ascorbic acid (crushed vitamin C tablets)
- 1 teaspoon citric acid powder

WATER BATH CAN ANYTHING

Fruits

This chart offers a no-frills method to preserving fruit. Depending on the types of produce you're using, it will need to be peeled, pitted, and halved or sliced. The best way to peel tomatoes and peaches is to blanch them; see the instructions here for doing this. Don't forget to place fruits that are prone to browning in acidulated water (see How to Keep Cut Fruit from Darkening in Color).

Many water bath canned foods are processed in syrup to help preserve their color, texture, and flavor. For many of these foods, you can also use fruit juice or water; it's up to you. Making a syrup is easy. Combine ¾ cup sugar with 6½ cups water for a light syrup, or 3¼ cups sugar with 5 cups water for a heavy syrup. Heat the water and sugar until the sugar dissolves, then cool slightly.

FOOD TYPE	PREP NOTES	APPROXIMATE QUANTITY	APPROXIMATE YIELD	STYLE OF PACK	JAR SIZE	JAR HEADSPACE	PROCESSING TIME*
Apples, sliced	Peel and core the apples; place in acidulated water as you work to prevent browning.	12¼ pounds 19 pounds	9 pints 7 quarts	Boil sliced apples in 1 pint water or syrup (see above) for 5 minutes, then hot pack.	Pint or quart	½ inch	20 minutes for pints and quarts
Berries, whole	Hull and clean the berries.	8 pounds 12 pounds	9 pints 7 quarts	Heat the berries in boiling water for 30 seconds; drain. Fill hot jars and cover with hot juice.	Pint or quart	½ inch	15 minutes for pints; 20 minutes for quarts
Cherries, whole	Stem and wash the cherries. If you remove pits, place cherries in acidulated water as you work.	11 pounds 17½ pounds	9 pints 7 quarts	**Hot pack:** In a large saucepan, combine ½ cup water, juice, or syrup for each quart of drained fruit and boil. Fill hot jars with cherries and cooking liquid. **Raw pack:** Add ½ cup hot water, juice, or syrup to each jar. Fill hot jars with drained cherries, gently shaking them down into the jar, and add more hot liquid.	Pint or quart	½ inch	15 minutes for hot pints; 20 minutes for hot quarts; 25 minutes for raw pints or quarts

FOOD TYPE	PREP NOTES	APPROXIMATE QUANTITY	APPROXIMATE YIELD	STYLE OF PACK	JAR SIZE	JAR HEADSPACE	PROCESSING TIME*
Peaches and Nectarines	Blanch and peel the peaches (no need to peel nectarines). Halve and pit.	11 pounds 17½ pounds	9 pints 7 quarts	**Hot pack:** In a large saucepan, combine drained fruit in syrup, water, or juice and bring to a boil. Fill hot jars with hot fruit and cooking liquid. **Raw pack:** Fill hot jars with raw fruit, cut-side down, then add hot water, juice, or syrup.	Pint or quart	½ inch	20 minutes for hot pints; 25 minutes for hot quarts and raw pints; 30 minutes for raw quarts
Pears	Wash and peel the pears, halve lengthwise, and core. Place in acidulated water as you work to prevent browning.	11 pounds 17½ pounds	9 pints 7 quarts	**Hot pack** : Boil drained pears for 5 minutes in syrup, juice, or water. Fill hot jars with hot fruit and cover with cooking liquid.	Pint or quart	½ inch	20 minutes for pints; 25 minutes for quarts

**Adjust for altitude as necessary (see here).*

Tomatoes

One fruit lies close to the 4.6 pH border between water bath and pressure canning that I referenced earlier in the chapter: tomatoes. Depending on the variety of tomato and its ripeness, some might be a little too alkaline to be water bath canned safely. To get around this, tomatoes must be acidified to ensure they are well below a 4.6 pH. When canning tomatoes on their own, you can achieve this by adding an acid to the jar before adding the tomatoes. (For pressure canning instructions for tomatoes, see here .)

Bottled lemon juice: Add 1 tablespoon per pint, or 2 tablespoons per quart.

Citric acid: Add ¼ teaspoon per pint, or ½ teaspoon per quart.

Vinegar (5 percent acidity): Add 2 tablespoons per pint, or ¼ cup per quart.

TOMATO TYPE	PREP NOTES	APPROXIMATEQUANTITY	APPROXIMATEYIELD	STYLE OF PACK*	JAR SIZE	JAR HEADSPACE	PROCESSING TIME**
Crushed	Blanch, peel, core, and quarter tomatoes. Heat	14 pounds 22 pounds	9 pints 7 quarts	Add acidic solution to jars and fill hot jars with hot	Pint or quart	½ inch	35 minutes for pints; 45 minutes for quarts

	one-fourth of the quarters, crushing them to create juice. Once boiling, add the remaining tomatoes and stir but don't crush. Boil gently for 5 minutes.			tomatoes.			
Packed in water	Blanch, peel, and core tomatoes. Leave whole or halve.	13 pounds 21 pounds	9 pints 7 quarts	Add acidic solution to jars. Cover tomatoes with water and boil for 5 minutes (for hot pack). Fill hot jars with either hot or raw tomatoes. Add hot water to cover.	Pint or quart	½ inch	40 minutes for pints; 45 minutes for quarts
Packed with no liquid	Blanch, peel, and core tomatoes. Leave whole or halve.	13 pounds 21 pounds	9 pints 7 quarts	Add acidic solution to jars. Raw pack hot jars with tomatoes and press tomatoes in the jars until the spaces between them fill with juice.	Pint or quart	½ inch	1 hour 25 minutes (for pints or quarts)

** Adding salt to the jars is optional; if you like, add ½ teaspoon per pint jar or 1 teaspoon per quart.*

*** Adjust for altitude as necessary (see here).*

Troubleshooting

Here are a few common canning issues, but overall, if your jars have bulging or corroded lids, liquid coming out, a foul odor, a gassy or mushy appearance, or signs of mold, dispose of the item.

EASY

Simple Strawberry Jam with Variations

Prep Time: 1 hour, plus overnight standing time **Processing Time:** 10 minutes
Makes: 9 half-pints

You can't talk about canning without including this classic preserve. It's easy and delicious—and who doesn't love strawberries? In the tip below, I offer a few variations of this jam to mix things up.

3½ pounds (10 cups) strawberries, hulled and quartered
5 cups sugar
½ cup bottled lemon juice

1. In a large metal bowl, combine the berries and sugar. Cover and refrigerate them overnight to draw out the berries' juices (this is called macerating).
2. Prep 9 pint jars and your water bath canner according to the instructions in Water Bath Canning, Step-by-Step .
3. In a large, nonreactive pot over medium-high heat, combine the berry mixture and lemon juice. Once the mixture starts to boil, about 20 minutes, stir it frequently, as jam is susceptible to scorching.
4. After about 30 minutes, once you see jelly-like residue on the side of the pot, the jam is almost ready. Check the consistency of the jam with the freezer test (see here). If it's not ready, keep boiling and testing every few minutes, stirring the pot frequently. When the jam is ready, ladle it into the prepared jars, leaving ¼ inch of headspace.
5. Remove any air bubbles, wipe the jar rims, seal the jars finger-tight, and process the jars for 10 minutes according to the instructions in Water Bath Canning, Step-by-Step .

Try This Instead: *Simple strawberry jam makes a great blank canvas for flavor variations. Add ½ cup chopped dried chamomile flowers or half a 7-ounce can of minced chipotles in adobo sauce in step 3. Alternatively, replace the lemon juice with ½ cup balsamic vinegar (just be sure it's over 5 percent acidity), or replace 3 cups of the strawberries with blackberries or raspberries (or both!).*

MEDIUM

Stone Fruit Cocktail

Prep Time: 30 minutes **Cook Time:** 10 minutes **Processing Time:** 20 minutes
Makes: 6 pints

You might have had a version of this dish as a child—a plastic cup filled with watery-tasting cut fruit. This is my adult version, comprising a mixture of peak-season stone fruit and apple juice. It's great on yogurt, for dessert, or anytime you want to taste the stone fruits of summer. This recipe uses lemon juice and water to prevent the fruit from browning. See How to Keep Cut Fruit from Darkening in Color for other ways to do this.

1 gallon water
¾ cup bottled lemon juice
7 pounds peaches, apricots, nectarines, or plums
5 cups apple juice or white grape juice

1. In a large bowl, combine the water and lemon juice.
2. If using peaches, blanch them in a large pot of boiling water, then plunge them into ice water to remove the skins (see here —you can leave the skin on the other fruits).
3. Halve and pit the fruits and cut them into bite-size pieces. Place them in the lemon water as you work to keep them from browning, making sure the fruit is submerged in the water.
4. Prep 6 one-pint jars and your water bath canner according to the instructions in Water Bath Canning, Step-by-Step .
5. In a large pot over high heat, bring the apple juice to a simmer. Using a slotted spoon, remove the fruit from the lemon water and pack it into the hot jars, leaving ½ inch of headspace. Fill the jars with the hot liquid, leaving ½ inch of headspace.
6. Remove any air bubbles, wipe the jar rims, seal the jars finger-tight, and process the jars for 20 minutes according to the instructions in Water Bath Canning, Step-by-Step .

MEDIUM

Cinnamon Apple Butter

Prep Time: 1 hour **Cook Time:** 2 hours 30 minutes **Processing Time:** 5 minutes
Makes: 9 half-pints

There's no dairy in this butter. Instead, fruit butters are pure fruit cooked down to a thickened consistency, usually with some sugar and spice. Spread this delicious butter on a biscuit, dress up hot cereal with a spoonful stirred in, or serve with grilled or roasted meat. You can have fun using different varieties of apples. Swapping the water for juice can also give a slightly different flavor.

8 pounds apples (about 20 medium apples; choose sweeter varieties such as Gala, Fuji, and Honeycrisp), peeled, cored, and cut into chunks
2 cups water
2 cups apple cider vinegar
3 cups granulated sugar
1 cup packed light brown sugar
2 tablespoons ground cinnamon

1. In a large pot over medium heat, combine the apples, water, and vinegar. Cook for about 30 minutes, stirring occasionally, until the apples are soft and falling apart. Working in batches as needed, carefully transfer the mixture to a blender and blend until smooth.
2. Return the puree to the same pot over medium heat and stir in the granulated sugar, brown sugar, and cinnamon. Cook for 1½ to 2 hours, stirring frequently. The longer you cook it, the thicker it will become, which creates more potential for burning. The apple butter is done when you spoon a small amount and it holds as a mound instead of falling off the spoon.
3. Prep 9 half-pint jars and your water bath canner according to the instructions in Water Bath Canning, Step-by-Step . When ready, ladle the butter into the prepared jars, leaving ¼ inch of headspace.
4. Remove any bubbles, wipe the jar rims, seal the jars finger-tight, and process the jars for 5 minutes according to the instructions in Water Bath Canning, Step-by-Step .

EASY

Sparkling Wine Cranberry Sauce

Prep Time: 15 minutes **Cook Time:** 30 minutes **Processing Time:** 10 minutes
Makes: 4 pints

Cranberry sauce is a holiday classic. Ever notice how it comes out of the can in a perfect mold? That's the pectin in the cranberries at work. My version does not come in a rigid can shape and it will have more texture from the skins of the berries. Serve it as always, or add a scoop to a mimosa, my personal inspiration for this preserve.

3 (12-ounce) bags fresh or frozen cranberries, rinsed and sorted
2 cups sugar
1½ cups sparkling wine or white grape juice
1 cup orange juice
Grated orange zest, for an extra bit of orange flavor (optional)

1. Prep 4 pint jars and your water bath canner according to the instructions in Water Bath Canning, Step-by-Step .
2. In a medium nonreactive pot over medium-high heat, stir together the cranberries, sugar, wine, orange juice, and orange zest to taste (if using). Bring to a boil. Cook for 10 minutes, stirring occasionally, until the cranberries burst. This releases their pectin, allowing the sauce to set. Continue to cook for 15 to 20 minutes, stirring and watching the bottom of the pot, until you see the sauce thicken. Do a freezer test to determine if it is set. When ready, ladle the sauce into the prepared jars, leaving ½ inch of headspace.
3. Remove any air bubbles, wipe the jar rims, seal the jars finger-tight, and process the jars for 10 minutes according to the instructions in Water Bath Canning, Step-by-Step .

EASY

Wine Jelly

Prep Time: 30 minutes **Cook Time:** 15 minutes **Processing Time:** 5 minutes
Makes: 6 half-pints or 3 pints

This was one of the first recipes I created after completing my Master of Food Preservation certification. Maybe it was because I always have wine in the house, or because I was just curious whether it would work. As it turned out, it did work, and I have been making this easy recipe, and variations of it, for years. This jelly goes perfectly on cheese plates, as a glaze on meats, and makes a great gift for the holiday season. And best of all, this recipe is meant for cheap wine, so save your fancy bottles and break out the Two Buck Chuck!

3 cups inexpensive red wine (any variety will work; use what you like to drink)
2 cups sugar
1 (3-ounce) package liquid pectin

1. Prep 6 half-pint or 3 pint jars and your water bath canner according to the instructions in Water Bath Canning, Step-by-Step .
2. In a medium nonreactive pot over low heat, combine the wine and sugar. Cook for about 10 minutes, whisking, until the sugar dissolves.
3. Increase the heat to high and whisk in the pectin. Bring the jelly to a boil, whisking constantly. Keep a close eye on the jelly; if it looks like it's going to boil over, reduce the heat slightly. Boil hard for 1 minute. Reduce the heat and do a freezer test of the jelly. If it sets, you're ready to go. Ladle into the prepped jars, leaving ¼ inch of headspace.
4. Remove any air bubbles, wipe the jar rims, seal the jars finger-tight, and process the jars for 5 minutes according to the instructions in Water Bath Canning, Step-by-Step .

Try This Instead: *For a different flavor profile, try white wine or even a rosé.*

MEDIUM

Crisp Pickled Green Beans

Prep Time: 45 minutes **Cook Time:** 5 minutes **Processing Time:** 5 minutes
Makes: 5 or 6 pints

Great on a cheese board, in a cold pasta salad for some brightness, or as a Bloody Mary garnish, pickled green beans are also great to munch on their own. I've even used the pickling vinegar for salad dressings. This is an example of a cold-pack method, in which raw produce is added to a jar and hot liquid is poured over it. This allows the green beans to stay crisp even after processing, one of the things that makes them so great.

6 garlic cloves, whole, peeled
Red pepper flakes, for seasoning (optional)
4 to 5 pounds green beans, trimmed
3 tablespoons mustard seeds
1 tablespoon celery seeds
4 cups apple cider vinegar
3 cups water
2 tablespoons Diamond Crystal kosher salt

1. Prep and sanitize 5 or 6 pint jars and your water bath canner according to the instructions in Water Bath Canning, Step-by-Step .
2. Place 1 garlic clove and a pinch of red pepper flakes (if using, and you want a little heat) into each jar.
3. Pack the trimmed green beans into each jar, standing up, trimming the beans as necessary to leave 1 inch of headspace.
4. In a nonreactive pot over high heat, combine the mustard seeds, celery seeds, vinegar, water, and salt. Bring to a boil. When ready, ladle the mixture into the prepared jars, leaving 1 inch of headspace.
5. Remove any air bubbles, wipe the jar rims, seal the jars finger-tight, and process the jars for 5 minutes according to the instructions in Water Bath Canning, Step-by-Step . Let the flavors develop for 2 weeks before enjoying.

MEDIUM

Classic Bread and Butter Pickles

Prep Time: 45 minutes, plus at least 2 hours to stand **Cook Time:** 10 minutes
Processing Time: 10 minutes **Makes:** 6 pints

This cucumber pickle is a classic on burgers, in egg salads, or with fried chicken. This recipe is the perfect pantry staple—and it makes a great host gift for a barbecue. Mixed with onions, it's simultaneously (and deliciously) tart and sweet.

5 pounds pickling cucumbers, stem ends trimmed, cut into ¼-inch-thick slices
2 pounds white onions, thinly sliced
½ cup Diamond Crystal kosher salt
Ice, for covering
3 cups apple cider vinegar
3 cups sugar
1½ tablespoons mustard seeds
1 tablespoon celery seed
1 tablespoon ground turmeric

1. Prep 6 pint jars and your water bath canner according to the instructions in Water Bath Canning, Step-by-Step .
2. In a large bowl, combine the cucumber and onion slices, cover them with the salt and ice, and refrigerate for at least 2 hours. The salt draws water out of the vegetables so they absorb the brine better. This technique is also used for preparing squash and other vegetables with a high water content.
3. In a nonreactive pot over high heat, combine the vinegar, sugar, mustard seeds, celery seed, and turmeric. Bring to a boil and boil for 10 minutes.
4. During this time, drain the vegetables.
5. Once the 10 minutes are up, turn off the heat, add the vegetables to the brine, and mix thoroughly. Ladle the mixture into the prepared jars, leaving ½ inch of headspace.
6. Remove any air bubbles, wipe the jar rims, seal the jars finger-tight, and process the jars for 10 minutes according to the instructions in Water Bath Canning, Step-by-Step .

MEDIUM

Mexican-Style Jalapeño and Carrot Pickles

Prep Time: 45 minutes to 1 hour **Cook Time:** 20 minutes
Processing Time: 10 minutes **Makes:** 4 or 5 pints

These delicious pickles, comprised of jalapeños, carrots, and onions, typically appear at authentic Mexican restaurants? They are delicious with chips, as a garnish with tacos, with grilled meats, on nachos—truly, the list goes on. I got this recipe from my dear friend Ernest Miller, who was also an amazing preservation expert. To kick up the heat even more, you can substitute serranos (use a smaller quantity; they will be hot!) for the jalapeños.

⅓ cup olive oil
1 pound (about 12) jalapeño peppers, stemmed and cut into ¼- to ½-inch-thick slices
3 or 4 large carrots, cut into ¼- to ½-inch-thick slices
3 white or yellow onions, cut into ½-inch slices
8 garlic cloves, peeled
4 cups distilled white vinegar
2 tablespoons Diamond Crystal kosher salt
2 bay leaves
1 tablespoon Mexican oregano (optional)
1 tablespoon black peppercorns
1 tablespoon sugar

1. Prep 4 or 5 pint jars and your water bath canner according to the instructions in Water Bath Canning, Step-by-Step .
2. In a large nonreactive pot over high heat, heat the oil. Add the jalapeños, carrots, onions, and garlic. Cook the vegetables for about 10 minutes until warm, stirring to avoid burning.
3. In a medium pot over high heat, combine the vinegar, salt, bay leaves, oregano (if using), peppercorns, and sugar. Bring to a boil. Turn off the heat and let the flavors steep for a few minutes; add to the vegetables. Cook over medium heat for about 10 minutes, stirring frequently, until the jalapeños are soft. Ladle the mixture into the prepared jars, leaving ½ inch of headspace.
4. Remove any air bubbles, wipe the jar rims, seal the jars finger-tight, and process the jars for 10 minutes according to the instructions in Water Bath Canning, Step-by-Step .

MEDIUM

Classic Barbecue Sauce

Prep Time: 30 minutes **Cook Time:** 1 hour 45 minutes
Processing Time: 20 minutes **Makes:** 8 half-pints

This recipe is classic for a reason: It's great on any sort of grilled meat or Smoked Tofu . It also makes a great dipping sauce. You can use peaches in the sauce when they're in season (see the tip following), which will add a lovely sweetness to this classic sauce. For instructions on how to blanch and peel tomatoes, see here .

1 tablespoon olive oil
2 cups chopped yellow or white onion
6 pounds tomatoes, blanched (see here), peeled, cored, and chopped (16 cups)
2 cups chopped celery
3 garlic cloves, crushed
1 cup packed light brown sugar
1 cup apple cider vinegar
1 tablespoon red pepper flakes
1 tablespoon ground mustard
1 tablespoon paprika
1 tablespoon The Best Hot Sauce or other hot sauce of choice
1 tablespoon Diamond Crystal kosher salt

1. In a large pot over medium-high heat, combine the oil and onion and cook for 5 minutes until slightly softened. Add the tomatoes, celery, and garlic and cook for about 30 minutes until all the vegetables are soft, stirring frequently.
2. Working in batches, puree the vegetables in a food processor or run them through a food mill and return the pureed mixture to the pot.
3. Stir in the brown sugar, vinegar, red pepper flakes, ground mustard, paprika, hot sauce, and salt. Cook the sauce over medium heat for 45 minutes to 1 hour until it is reduced by about half, with constant monitoring and stirring frequently so the sauce doesn't scorch. The mixture should be the same consistency as ketchup.
4. Prep 8 half-pint jars and your water bath canner according to the instructions in Water Bath Canning, Step-by-Step .
5. Ladle the barbecue sauce into the prepared jars, leaving ½ inch of headspace.
6. Remove any air bubbles, wipe the jar rims, seal the jars finger-tight, and process the jars for 20 minutes according to the instructions in Water Bath Canning, Step-by-Step .

Variation Tip: *Use the same quantity of blanched, peeled, pitted, and chopped peaches in place of tomatoes for a delightfully fruity sauce.*

EASY

Garlic Tomato Sauce

Prep Time: 30 minutes **Cook Time:** 2 hours 35 minutes
Processing Time: 35 minutes **Makes:** 4 pints

I like to keep tomato sauce as simple as possible because I can customize the flavor later, depending on what I'm in the mood for. Sometimes, I'll add lots of herbs, like basil or oregano; other times, I'll add things like sautéed onion, capers, minced olives, or crispy bits of pancetta. If you want a smooth sauce ideal for coating pasta, blanch and peel the skins off the tomatoes (see here), or have a food mill handy.

15 pounds tomatoes
8 garlic cloves, thinly sliced
2 tablespoons red pepper flakes
3 bay leaves
⅓ cup olive oil
4 tablespoons bottled lemon juice

1. If you desire a smooth sauce, either use a food mill to peel your tomatoes, or blanch and peel your tomatoes the old-fashioned way (see here).
2. Core the peeled tomatoes and coarsely chop. Set aside.
3. In a large stockpot over medium-high to high heat, combine the garlic, red pepper flakes, bay leaves, and oil. Cook for 5 minutes.
4. Pour the chopped tomatoes into the pot and bring to a boil. Cook for 1½ to 2 hours, stirring occasionally, or until the tomatoes are soft and completely broken down. Turn off the heat and pass the cooked tomatoes through a food mill. This should leave you with a smooth sauce. If you do not have a food mill, blend the tomatoes in a blender or food processor in batches until smooth.
5. Return the sauce to the pot and place over medium-high heat. Cook for about 30 minutes until the sauce is thick (you do not need a hard boil, but lots of steam coming out is great).
6. Prep 4 pint jars and your water bath canner according to the instructions in Water Bath Canning, Step-by-Step , but add extra water to the canner so the jars are covered by 2 inches to account for the long processing time.
7. Pour 1 tablespoon of lemon juice into each prepared jar. Ladle the tomato sauce into the jars, leaving ½ inch of headspace.
8. Remove any air bubbles, wipe the jar rims, seal the jars finger-tight, and process the jars for 35 minutes according to the instructions in Water Bath Canning, Step-by-Step .

Make It Easy: *You know what they say: "Many hands make light work." A good friend likes to can large batches of tomato sauce every summer when the tomatoes are delicious. She and a few friends spend an entire weekend with large pots going through this process over and over, capturing the harvest in as many jars as possible. If you have a large garden and find yourself with too many to handle, you, too, might want to consider having a saucy weekend.*

MEDIUM

Tomato Jam

Prep Time: 1 hour **Cook Time:** 1 hour **Processing Time:** 10 minutes
Makes: 8 half-pints

We serve this with breakfast sandwiches at my café, Alta Baja, and it has become so popular that we sell it in our cold case. This is ketchup's smarter, zestier, funnier cousin. The garlic and jalapeños combined with the sweetness of the tomatoes and sugar are the perfect balance of savory and sweet. And our secret, the red wine vinegar, not only acidifies the tomatoes, but gives them that extra something-something. If you don't like it spicy, limit or eliminate the jalapeños. If you like it spicier, use serrano peppers instead.

6 pounds tomatoes (heirloom, beefsteak, or other soft juicy variety), skins on, cored and quartered
2 cups sugar
1 cup red wine vinegar
3 jalapeño peppers or 2 serrano peppers, minced
4 garlic cloves, minced

1. In a large pot over medium-high heat, combine the tomatoes, sugar, vinegar, jalapeños, and garlic. Bring the mixture to a boil and cook for about 20 minutes, stirring every 3 to 5 minutes, to reduce the jam a bit. You'll see the tomatoes lose their water and break down. Eventually, the water will evaporate. The jam will take on a glossier look because of the reduced water and the presence of the sugar. You'll notice the amount of ingredients you started with decreasing.
2. Reduce the heat to medium and simmer for about 20 minutes more, then test the jam—when it's set, it will hold its shape on a spoon, or do a freezer test to see if it is ready.
3. Prep 8 half-pint jars and your water bath canner according to the instructions in Water Bath Canning, Step-by-Step .
4. Ladle the jam into the prepared jars, leaving ½ inch of headspace.
5. Remove any air bubbles, wipe the jar rims, seal the jars finger-tight, and process the jars for 10 minutes according to the instructions in Water Bath Canning, Step-by-Step .

Try This Instead: *Taste the jam while it cooks and adjust the flavor components to your liking. If you want it spicier, add a few more peppers. If you think it's too garlicky, reduce the amount of garlic in your next batch. Use different types of peppers or use apple cider vinegar instead of red wine vinegar. These small tweaks still allow safe preservation while creating different flavors.*

Coriander Carrots

CHAPTER THREE

Pressure Canning

PRESSURE CANNING 101

Pressure canning often makes newcomers to food preservation nervous—after all, *pressure* is right there in the name! The large canning pot with its gauge, weights, and clamps looks imposing and the whole thing seems complicated—but, actually, it's not.

When you understand how this method works, it is a fantastic way to preserve foods, and it will fill your pantry with lots of delicious dishes that can't be preserved by other methods. Pressure canning gives your refrigerator and freezer space for other items, because when you use this technique, you can process nearly anything for storage in your pantry.

Acidity determines whether a food needs to be water bath canned or pressure canned. As I mentioned in chapter 1 , vegetables, meats, and seafood are low-acid foods, with a pH above 4.6. Unlike high-acid foods, low-acid foods are susceptible to botulism and, therefore, must be cooked at a higher temperature than a 212°F boiling water bath provides. This is the only way to kill the bacteria and spores that produce the toxins, thereby making the item shelf stable. Pressure canners can heat products up to 240°F. So, how does this happen?

When heat is applied to water, it produces steam. Pressure canners have locking lids, trapping the steam, which vents via a small opening in the canner. When a weight is placed on this opening, the trapped steam inside causes the pressure in the canner to build and the temperature to rise above the temperature of boiling water. These high temperatures destroy microorganisms that thrive in low-acid environments and cook foods faster.

At sea level, you can see how pressure in pounds per square inch (psi) corresponds to temperature. The amount of pressure is designated in pounds per square inch, and it must be correctly calibrated, so the food reaches a safe temperature of 240°F.

Low-acid foods must be processed at 240°F so, as you'll see, processed with 10 pounds. The picture is slightly complicated by altitude, which affects pressure. This is why you must adjust cooking times and pressure depending on where you live. For a list of the altitudes of cities across the United States and Canada, plus altitude adjustments, see All About Altitude .

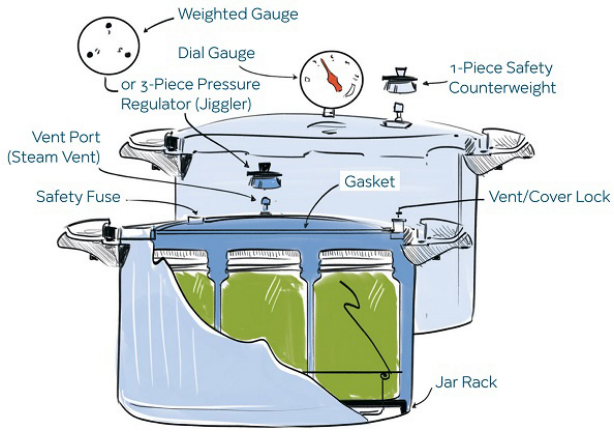
There are benefits and constraints to pressure canning. This preservation method allows you to preserve meat and other low- acid foods so they can become shelf stable, saving energy and space in storage. It is also a great way to preserve products without salt, as salt is used for flavoring in this

method, *not* preserving. Pressure-canned products are also easy to consume; usually you just need to reheat them on the stovetop. People who want to create an emergency food supply turn to pressure canning to secure provisions in times of need.

Although these are all great reasons to use this food preservation method, you need to consider that it does take time. Processing times are usually triple—even quadruple—that of water bath processing, and it's important that you never leave the canner alone while working with it. Pressure canning also requires a specific tool that cannot be replaced—a pressure canner.

Essential tools and equipment

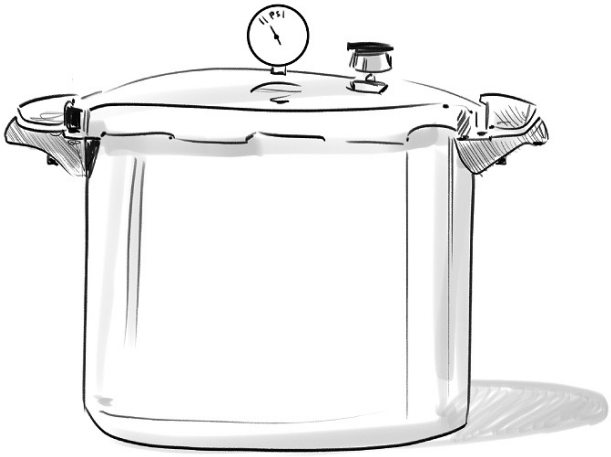
Many of the tools used in water bath canning are also useful in pressure canning, so you might already have them. You will use the following: canning jars and two-piece lids, a cooking pot, and cooking utensils. Some other items, like a canning funnel and bubble remover (see water bath canning, chapter 2 , Essential Tools and Equipment , will become even handier when pressure canning because, many times, you will be transferring chunky, hot stews, soups, or hot blanched vegetables into jars. But the most important tool that differentiates this method from other preservation methods is the namesake *pressure canner* .



So, how is a pressure canner different from a water bath canner? In many ways: Their only similarity is that they're both large pots with lids. Pressure canners are built with sturdier bodies, lids that lock securely on the canner, a vent to release steam, a gauge to measure pressure, and a weight to create pressure. Different types of pressure canners work in slightly different ways, and they all have different strengths and weaknesses. Before you purchase one, do a little research to see which one fits your needs; but here's a brief rundown to help you get started.

DIAL GAUGE CANNER

This type of canner uses a gauge to regulate the pressure of the canner. Heat adjustment will keep the meter on the amount of pressure you need. For example, if you need a psi of 10, once your dial gauge reads 10 or above, you will adjust the heat under the pot so it remains at 10. You will have to calibrate your dial gauge annually to make sure it works properly, and keep an eye on the heat and gauge to make sure you do not fall below the pressure needed for the recipe. If you fall below your designated pressure, you will have to start over. Canners with a dial gauge generally are lighter, less expensive, and great for beginners. They typically run between $75 and $125.



WEIGHTED GAUGE CANNER

With this type of canner, the pressure is regulated by a weight, also known as a petcock. This detachable piece is placed on the vent and begins to rattle when it reaches the right pressure. Weights can be adjusted in three parts (5, 10, and 15 pounds) and you can adjust the weight to suit the pressure needed for the recipe. The canners that usually come with weighted gauges are larger, more expensive, and a little heavier; however, you won't need to adjust your dial because the weight tells you if the pressure is correct. These types of canners are great for next-level canners who want to process more product at one time. Expect them to cost between $100 and $350.

ELECTRIC CANNER

This new canner is sure to be extremely popular in the years to come and may encourage more people to pressure can—but I do think there is something to be said for using the old-fashioned methods in terms of learning and understanding the process. Instead of heat from the stovetop, the electric canner is a plug-in appliance, like an electric pressure cooker. With beeps and commands, it will tell you exactly what you need to do and when. Electric canners can function as both pressure cookers and water bath canners, so you only need one canner, which saves money and space. Although there are many benefits to this modern pressure canner, it only comes in one size, limiting the batch size you can process at one time, and you cannot water bath process quart jars. And despite what it may say on the package, electric canners are not USDA approved. The brand Presto makes several home food preserving tools and equipment items for around $250.

PRESSURE CANNING, STEP-BY-STEP

The procedure for pressure canning is similar to water bath canning, so if you're not familiar with it, go back and refresh your understanding of those steps before reading these Water Bath Canning, Step-by-Step .

1. **Clean.**
   Much like water bath canning in chapter 2 , being prepared is half the work. Read the recipe, clean, and sanitize all working tools and cooking areas. Wash your hands and all the food you are about to preserve.
2. **Prepare your canner.**
   Unlike the water bath method, pressure canners don't need a lot of water; between 1 inch and 3 inches—3 inches for longer processing times. If you have hard water, add 1 to 2 tablespoons of distilled white vinegar to it. Place the rack in the bottom of the canner. Turn the heat under the pot to low to begin to warm the water. Once you turn on the heat, do not leave the canner unattended.
3. **Prepare your jars.**
   Sanitize jars in boiling water, using a dishwasher set to the rinse cycle, or fill each jar halfway with water and place the jars in your warming pressure canner.
4. **Fill and clean the jars.**
   Fill the jars with food, either raw or hot packed Canning Terminology , and then fill with water, leaving 1 inch of headspace. If it's a prepared food item, pack it hot into a jar with 1 inch of headspace. Use a bubble remover or small spatula to remove any trapped air bubbles. Warm the lids and wipe the jar rims. Attach the lid and the rings, securing them so they are finger-tight (see definition here).
5. **Load your jars into the canner.**
   Place your jars in the canner on top of the rack using a jar lifter or tongs. Do not crowd the canner and make sure the jars are not touching because it's important that steam and heat can surround the jars completely for proper processing.
6. **Close and start the canner.**
   Lock the canner (some are twist lock and some have other mechanisms like a clamp to secure the lid). Turn the heat to high. Any air or steam should be exiting through the pressure vent. Any other evidence of steam exiting the canner signals a leak; if this happens, turn off the heat and evaluate the canner, gaskets, or other areas of the canner where air can escape.

7. Create pressure.

As the water heats, it will create steam. Once the steam builds, it will start to exit through the pressure vent. Once it is exiting in a steady stream for 10 minutes, place the weight on the vent or close the petcock. Depending on the canner you have, do the following:

Dial gauge : If your canner has a dial gauge, bring it up to the required pressure, then adjust your heat and hold it steady at that pressure. Once you obtain the correct pressure, start counting your processing time.

Weighted gauge : If your canner has a weighted gauge, it will jiggle, sizzle, and rock back and forth when it reaches the correct psi (typically 10 or 15). You can't miss it because the noise is repetitive and distinct, and you should be close to your canner to make sure you know when it is ready. Once it maintains the rocking motion, start your processing time.

8. Keep time and maintain pressure.

Keep track of time and make sure the canner maintains the correct pressure. If the gauge drops below the pressure needed, or the weight stops rattling, you are not processing safely for the recipe and you must reach the desired pressure again and **restart your timer** . You cannot start from where you left off before the pressure dropped.

9. Finish processing.

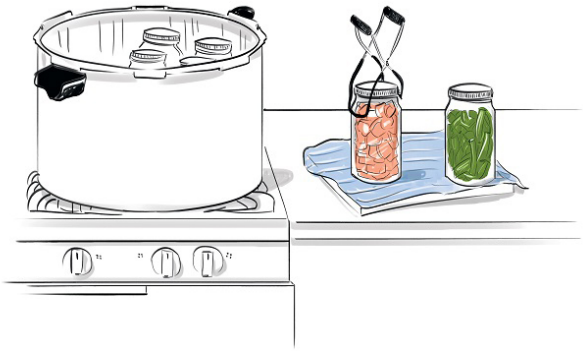
Once your processing time ends, turn off the heat and let the canner cool and depressurize undisturbed. Let the canner pressure drop to zero slowly, or until there is no steam coming out of the vent, which will take about 1 hour. Any plugs, such as a vent piston or metal plug, that indicate pressure should have fallen back into place by now.

10. Last check before opening.

If using a dial gauge, wait until the gauge reads zero, then open the petcock slightly or rock the weight slightly. If you hear steam, pressure is still in there and you must shut the petcock/resettle the weight and wait 5 minutes. If you don't hear steam, open the petcock, or remove the weight.

11. Remove and cool your jars.

Open the canner away from your face to avoid steam burns, and pull the jars out of the canner slowly using a jar lifter or tongs and place the jars on a towel. Let them cool for several hours. The jars may still be boiling, which is normal. Just let them cool.



12. Store your jars and pressure canner.

After a few hours, remove the rings from the jars and check your seals by pressing down on the lid. If the lid flexes, it has not sealed and the jar must be refrigerated and consumed within the week (2 to 3 days for meat). Sealed jars should be labeled, dated, and stored in a cool dry place for up to 2 years. Don't forget to care for your pressure canner, too; check out Caring for Your Pressure Canner for specific instructions.

CARING FOR YOUR PRESSURE CANNER

Take time to care for your canner properly to ensure it functions well for years to come.

Canner Lid and Body: Be careful not to drop your canner or lid. If you do, inspect the canner for dents or cracks; they may be hairline and not visible. If you are unsure of the damage, send the canner to the manufacturer. Tell them what happened and ask for an examination.
Canner Storage: Dry the canner thoroughly and store the lid, gasket, and body of the canner separately or upside-down to prevent moisture buildup.
Gasket and Other Rubber Parts: Wash and dry the gasket, if your canner uses one in the lid. Insert the gasket only when using the canner. Both the gasket and other rubber parts on the canner should be checked for signs of damage, cracking, or stretching. Do not use oil on rubber parts, and it is recommended that you replace them annually.
Gauge: If you have a dial gauge, check it annually or have it recalibrated. The canner manufacturer or an extension office will be able to do this for you. Also, do not damage the gauge with water or oil and inspect it for broken pieces or rust.
Metal-to -Metal Seal: Lightly apply a small amount of olive oil to the contact area of metal-to-metal lids to assist with sealing. *This is not for lids with gaskets* , just metal-to-metal seals.

PRESSURE CAN ANYTHING

You *could* pressure can anything, but the real question is whether you *should.* Pressure canning turns some foods mushy or unappealing (like berries), while it's not safe for other kinds of foods (like purees). For example, you should not pressure can dairy products, eggs, thick purees or mashed beans, high-fat foods or oils, nuts, or baked goods.

The following are instructions for processing some common items.

Processing beans

Although store-bought canned beans are a pantry staple, home-canned are even better. You can avoid unwanted additives, like excess salt and BPA (a hormone-disrupting compound often found in the lining of the cans). Furthermore, beans are easy to can because you don't have to soak or cook them beforehand. The high temperature and pressure do the job for you.

To prep beans for canning, rinse and pick them over to check for stones, dirt, and any shriveled beans. Pack the dried beans into jars using the quantities below. Add hot water to the jars, leaving 1 inch of headspace. Remove any air bubbles, wipe the jar rims, add the lids and rings, and close them finger-tight. Place the jars in the canner and process according to the instructions here , at 10 psi, for 1 hour 15 minutes if using pint jars, and 1 hour 30 minutes for quart jars.

DRIED INGREDIENT	DRIED QUANTITY PER PINT JAR	DRIED QUANTITY PER QUART JAR
Black beans	¾ cup	1½ cups
Black-eyed peas	½ cup	1 cup
Cannellini beans	½ cup	1 cup
Chickpeas	¾ cup	1½ cups
Great northern beans	½ cup	1 cup
Kidney beans	½ cup	1 cup
Lentils	¼ cup	½ cup
Lima beans	½ cup	1 cup
Navy beans	¾ cup	1½ cups
Pinto beans	½ cup	1 cup
Red beans	½ cup	1 cup
Split peas	¼ cup	⅔ cup

Tomato and Vegetable Processing Charts

Prepped tomatoes and vegetables are great to have at the ready when you need a quick vitamin boost or to round out a carb- and/or meat-filled meal. They can also be time savers when used as ingredients in other recipes. Some require raw packing, others hot packing, and some can be done either way. Keep in mind when *raw packing* you're filling hot jars with prepared raw tomatoes or vegetables, then filling the jar with boiling water, leaving 1 inch of headspace. When *hot packing* , you're boiling tomatoes and veggies for 5 minutes before filling hot jars and adding the cooking liquid to the jars to cover the vegetables, again leaving 1 inch of headspace. With either method, you can add ½ teaspoon of salt per pint, or 1 teaspoon of salt per quart, if you like. This is just for flavor, and is entirely optional.

TOMATOES									
TOMATO TYPE	**APPROXIMATE QUANTITY**	**APPROXIMATE YIELD**	**STYLE OF PACK**	**JAR SIZE**	**JAR HEADSPACE**	**BOTTLED LEMON JUICE**	**PROCESS TIME**	**PSI DIAL GAUGE***	**PSI WEIGHTED GAUGE***
Whole and halved	13 pounds	9 pints	Raw or hot	Pint	1 inch	1 tablespoon	10 minutes	11 psi (pints)	5 psi (pints)
	21 pounds	7 quarts	Raw or hot	Quart	1 inch	2 tablespoons	10 minutes	11 psi (quarts)	10 psi (quarts)
Diced	13 pounds	8 pints	Raw or hot	Pint	1 inch	1 tablespoon	10 minutes	11 psi (pints)	5 psi
	21 pounds	6 quarts	Raw or hot	Quart	1 inch	2 tablespoons	10 minutes	11 psi (quarts)	10 psi
Whole and halved (no water added)	13 pounds	9 pints	Raw, no water added	Pint	1 inch	1 tablespoon	25 minutes	11 psi (pints)	10 psi
	21 pounds	7 quarts	Raw, no water added	Quart	1 inch	2 tablespoons	25 minutes	11 psi (quarts)	10 psi
Crushed (no water added)	13 pounds	9 pints	Raw, no water added	Pint	1 inch	1 tablespoon	15 minutes	11 psi (pints)	10 psi
	21 pounds	7 quarts	Raw, no water added	Quart	1 inch	2 tablespoons	15 minutes	11 psi (quarts)	10 psi
Tomato juice	23 pounds	14 pints	Hot	Pint	1 inch	1 tablespoon	15 minutes	11 psi (pints)	10 psi
	21 pounds	7 quarts	Hot	Quart	1 inch	2 tablespoons	15 minutes	11 psi (quarts)	10 psi

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VEGETABLES									
VEGETABLE TYPE	**APPROXIMATE QUANTITY**	**APPROXIMATE YIELD**	**STYLE OF PACK**	**JAR SIZE**	**JAR HEADSPACE**	**CANNING SALT (OPTIONAL)**	**PROCESS TIME**	**PSI DIAL GAUGE***	**PSI WEIGHTED GAUGE***
Asparagus (whole or pieces)	16 pounds	9 pints	Raw or hot	Pint	1 inch	½ teaspoon	30 minutes	11 psi	10 psi
	25 pounds	7 quarts	Raw or hot	Quart	1 inch	1 teaspoon	40 minutes	11 psi	10 psi
Beans, green	9 pounds	9 pints	Raw or hot	Pint	1 inch	½ teaspoon	20 minutes	11 psi	10 psi
	14 pounds	7 quarts	Raw or hot	Quart	1 inch	1 teaspoon	25 minutes	11 psi	10 psi
Carrots	11 pounds	9 pints	Raw or hot	Pint	1 inch	½ teaspoon	25 minutes	11 psi	10 psi

VEGETABLES									
VEGETABLE TYPE	APPROXIMATE QUANTITY	APPROXIMATE YIELD	STYLE OF PACK	JAR SIZE	JAR HEADSPACE	CANNING SALT (OPTIONAL)	PROCESS TIME	PSI DIAL GAUGE*	PSI WEIGHTED GAUGE*
	18 pounds	7 quarts	Raw or hot	Quart	1 inch	1 teaspoon	30 minutes	11 psi	10 psi
Corn, shucked and kernels cut from cobs	20 pounds (in husk)	9 pints	Raw or hot	Pint	1 inch	½ teaspoon	55 minutes	11 psi	10 psi
	32 pounds (in husk)	7 quarts	Raw or hot	Quart	1 inch	1 teaspoon	1 hour 25 minutes	11 psi	10 psi
Mushrooms, whole or sliced	8 pounds	9 half-pints	Hot	Half-pint	1 inch	⅛ teaspoon	45 minutes	11 psi	10 psi
	15 pounds	9 pints	Hot	Pint	1 inch	⅛ teaspoon	45 minutes	11 psi	10 psi
Okra, whole or 1-inch pieces, soak for 30 minutes in vinegar, rinse and pat dry	7 pounds	9 pints	Hot	Pint	1 inch	½ teaspoon	25 minutes	11 psi	10 psi
	11 pounds	7 quarts	Hot	Quart	1 inch	1 teaspoon	45 minutes	11 psi	10 psi
Peas, shelled, boil for 2 minutes before packing	20 pounds (in pods)	9 pints	Raw or hot	Pint	1 inch	½ teaspoon	40 minutes	11 psi	10 psi
	32 pounds (in pods)	7 quarts	Raw or hot	Quart	1 inch	1 teaspoon	40 minutes	11 psi	10 psi
Peppers, stemmed and seeded, roast/broil at 400°F, then peel or raw pack with skin on	4½ pounds	9 half-pints	Raw	Half-pint	1 inch	None	35 minutes	11 psi	10 psi
	9 pounds	9 pints	Raw	Pint	1 inch	None	35 minutes	11 psi	10 psi
Potatoes, 1 to 2 inches in diameter, whole; large potatoes, ½-inch cubes	13 pounds	9 pints	Hot	Pint	1 inch	½ teaspoon	35 minutes	11 psi	10 psi
	20 pounds	7 quarts	Hot	Quart	1 inch	1 teaspoon	40 minutes	11 psi	10 psi
Spinach or greens, stemmed, blanch 1 pound at a time for 5 minutes	18 pounds	9 pints	Hot	Pint	1 inch	½ teaspoon	1 hour 10 minutes	11 psi	10 psi
	28 pounds	7 quarts	Hot	Quart	1 inch	1 teaspoon	1 hour 30 minutes	11 psi	10 psi
Sweet potatoes, 1-inch pieces, boil for 10 minutes	11 pounds	9 pints	Hot	Pint	1 inch	½ teaspoon	1 hour 5 minutes	11 psi	10 psi
	18 pounds	7 quarts	Hot	Quart	1 inch	1 teaspoon	1 hour 30 minutes	11 psi	10 psi

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Meat Processing Charts

Having pressure-canned meat on hand is a gift on those nights when you want a speedy, wholesome dinner. Of course, while you're working, be extra-sure to keep your workspace completely clean and wipe the rims of the jars before sealing. Follow these tips for each type of meat.

For chicken: Remove the fat and skin from chicken breasts and thighs; for raw packing, use cool water, but for hot packing, use hot water; keep the headspace—1¼ inches—in mind; and make sure you have enough liquid in the jars to cover the chicken without violating that headspace.

For pork: Remove any excess fat but keep marbleized fat for moistness and brown in fat (or cook and drain the fat from ground pork) and season before filling. Leave 1¼ inches of headspace.

For beef: Remove any extra fat but keep marbleized fat for moistness and brown (or cook and drain fat for ground beef) in fat and season before filling, and be mindful of the headspace—1¼ inches.

CHICKEN											
TYPE OF CHICKEN	PREPARATION	QUANTITY	PACK	AMOUNT	AMOUNT PER	YIELD IN	PROCESSING TIME FOR	YIELD IN	PROCESSING TIME FOR	PSI DIAL	PSI WEIGHT

		(POUNDS)	TYPE	PER PINT	QUART	PINTS	PINTS	QUARTS	QUARTS	GAUGE*	ED GAUGE*
Boneless, skinless breasts	Cut into 2-inch pieces	22 to 28	Raw	2 breasts	4 breasts	14	1 hour 15 minutes	7	1 hour 30 minutes	11 psi	10 psi
Boneless, skinless thighs	Cut into 2-inch pieces	40 to 55	Raw	4 thighs	8 thighs	14	1 hour 15 minutes	7	1 hour 30 minutes	11 psi	10 psi
Bone-in breast	Whole, skin removed	14	Raw	1 breast	2 breasts	14	1 hour 5 minutes	7	1 hour 15 minutes	11 psi	10 psi
Bone-in legs	Whole, skin removed	42	Raw	3 legs	6 legs	14	1 hour 5 minutes	7	1 hour 15 minutes	11 psi	10 psi
Bone-in thighs	Whole, skin removed	35 to 42	Raw	3 or 4 thighs	5 or 6 thighs	14	1 hour 5 minutes	7	1 hour 15 minutes	11 psi	10 psi
Ground	Cooked, fat drained	14 pounds	Hot	1 pound	2 pounds	14	1 hour 15 minutes	7	1 hour 30 minutes	11 psi	10 psi

PORK											
CUT OF PORK	PREPARATION	QUANTITY	PACK TYPE	AMOUNT PER PINT	AMOUNT PER QUART	YIELD IN PINTS	PROCESSING TIME FOR PINTS	YIELD IN QUARTS	PROCESSING TIME FOR QUARTS	PSI DIAL GAUGE*	PSI WEIGHTED GAUGE*
Boneless pork chops	Cut into 2-inch pieces, browned	14 pounds	Hot	1 pound	2 pounds	14	1 hour 15 minutes	7	1 hour 30 minutes	11 psi	10 psi
Ground	Cooked, fat drained	14 pounds	Hot	1 pound	2 pounds	14	1 hour 15 minutes	7	1 hour 30 minutes	11 psi	10 psi
Pork butt / shoulder	Cut into 2-inch pieces, browned	14 pounds	Hot	1 pound	2 pounds	14	1 hour 15 minutes	7	1 hour 30 minutes	11 psi	10 psi
Tenderloin	Cut into 2-inch pieces	14 pounds	Raw	1 pound	2 pounds	14	1 hour 15 minutes	7	1 hour 30 minutes	11 psi	10 psi

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BEEF											
CUT OF BEEF	PREPARATION	QUANTITY	PACK TYPE	AMOUNT PER PINT	AMOUNT PER QUART	YIELD IN PINTS	PROCESSING TIME FOR PINTS	YIELD IN QUARTS	PROCESSING TIME FOR QUARTS	PSI DIAL GAUGE*	PSI WEIGHTED GAUGE*
Chuck steak	Cut into 2-inch pieces, browned	14 pounds	Hot	1 pound	2 pounds	14	1 hour 15 minutes	7	1 hour 30 minutes	11 psi	10 psi
Ground	Cooked, fat drained	14 pounds	Hot	1 pound	2 pounds	14	1 hour 15 minutes	7	1 hour 30 minutes	11 psi	10 psi
Round roast	Cut into 2-inch pieces, browned	14 pounds	Hot	1 pound	2 pounds	14	1 hour 15 minutes	7	1 hour 30 minutes	11 psi	10 psi
Stew meat/beef tips	Cut into 2-inch pieces, browned	14 pounds	Hot	1 pound	2 pounds	14	1 hour 15 minutes	7	1 hour 30 minutes	11 psi	10 psi

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Wild game processing chart

Wild game, ranging from rabbit to venison to small birds, can be pressure canned to free up freezer space and tenderize tough cuts of meat. It's easy. Larger game is canned like beef and smaller game is canned like poultry. In either case, however, *the meat must process for 1 hour 15 minutes for pints and 1 hour 30 minutes for quarts* . When canning wild game, keep in mind you should not use meat with any dark bruising or tumors, remove any extra fat, and soak game, rinse, and remove bones, especially for venison.

LARGE GAME											
CUT OF GAME	PREPARATION	QUANTITY	PACK TYPE	AMOUNT PER PINT	AMOUNT PER QUART	YIELD IN PINTS	PROCESSING TIME FOR PINTS	YIELD IN QUARTS	PROCESSING TIME FOR QUARTS	PSI DIAL GAUGE*	PSI WEIGHTED GAUGE*
Chuck steak	Cut into 2-inch pieces, browned	14 pounds	Hot	1 pound	2 pounds	14	1 hour 15 minutes	7	1 hour 30 minutes	11 psi	10 psi
Ground	Cooked, fat drained	14 pounds	Hot	1 pound	2 pounds	14	1 hour 15 minutes	7	1 hour 30 minutes	11 psi	10 psi
Round roast	Cut into 2-inch pieces, browned	14 pounds	Hot	1 pound	2 pounds	14	1 hour 15 minutes	7	1 hour 30 minutes	11 psi	10 psi
Shoulder,shank, and neck meat	Cut into 2-inch pieces, browned	14 pounds	Hot	1 pound	2 pounds	14	1 hour 15 minutes	7	1 hour 30 minutes	11 psi	10 psi
Stew meat tips	Cut into 2-inch pieces, browned	14 pounds	Hot	1 pound	2 pounds	14	1 hour 15 minutes	7	1 hour 30 minutes	11 psi	10 psi

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SMALL GAME AND BIRDS											
CUT OF GAME	PREPARATION	QUANTITY	PACK TYPE	AMOUNT PER PINT	AMOUNT PER QUART	YIELD IN PINTS	PROCESSING TIME FOR PINTS	YIELD IN QUARTS	PROCESSING TIME FOR QUARTS	PSI DIAL GAUGE*	PSI WEIGHTED GAUGE*
Boneless, skinless breasts	Cut into 2-inch pieces	22 to 28	Raw	2 breasts	4 breasts	14	1 hour 15 minutes	7	1 hour 30 minutes	11 psi	10 psi
Boneless, skinless thighs	Cut into 2-inch pieces	40 to 55	Raw	4 thighs	8 thighs	14	1 hour 15 minutes	7	1 hour 30 minutes	11 psi	10 psi
Bone-in breasts	Whole, skin removed	14	Raw	1 breast	2 breasts	14	1 hour 5 minutes	7	1 hour 15 minutes	11 psi	10 psi
Bone-in thighs	Whole, skin removed	35 to 42	Raw	3 to 4 thighs	5 to 6 thighs	14	1 hour 5 minutes	7	1 hour 15 minutes	11 psi	10 psi
Bone-in legs	Whole, skin removed	42	Raw	3 legs	6 legs	14	1 hour 5 minutes	7	1 hour 15 minutes	11 psi	10 psi
Ground	Cooked, fat drained	14 pounds	Raw	1 pound	2 pounds	14	1 hour 15 minutes	7	1 hour 30 minutes	11 psi	10 psi

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Troubleshooting

Because you are dealing with low-acid foods when pressure canning, it is even more important that you inspect and evaluate your foods. Botulism bacteria and toxins thrive in low-acid, anaerobic environments, and because toxins are tasteless and odorless, they leave no evidence. If you are ever unsure of a food's safety, use the old rule: "When in doubt, throw it out." Dispose of the item in the trash (not the sink) and wash your hands and all items in contact with the questionable product thoroughly. Immerse items in contact with the questionable item in boiling water for 30 minutes.

EASY

Coriander Carrots

Prep Time: 15 minutes **Cook Time:** 5 minutes
Processing Time: 25 minutes for pints; 30 minutes for quarts
Makes: 4 pints or 2 quarts

This heart-healthy, vision-improving, all-around nutritious staple is a great snack or side. I like to use organic carrots when I can find them because the farming practices are more sustainable, or rainbow carrots for an eye-catching twist. You can easily double this recipe if you have more carrots.

3 pounds carrots, cut into sticks (be sure they're trimmed to fit into the jar with 1 inch of headspace)
2 teaspoons coriander seeds, divided
2 teaspoons Diamond Crystal kosher salt, divided (optional)

1. Prep 4 pint or 2 quart jars and your pressure canner according to the instructions in Pressure Canning, Step-by-Step .
2. Bring a large pot of water to a boil, then add the carrots. Reduce the heat to maintain a simmer and cook for 5 minutes.
3. Using a slotted spoon, pack the carrots into the prepared jars, leaving 1 inch of headspace (reserve the cooking water).
4. Add ½ teaspoon of coriander seeds and ½ teaspoon of salt (if using) to each pint jar, or 1 teaspoon of coriander seeds and 1 teaspoon of salt to each quart jar.
5. Fill the jars with the reserved cooking water, covering the carrots and leaving 1 inch of headspace.
6. Remove any air bubbles, wipe the jar rims, secure the lids and rings finger-tight, and load the jars into the pressure canner. Process the jars at 10 pounds pressure for 25 minutes for pints, or 30 minutes for quarts, according to the instructions in Pressure Canning, Step-by-Step .

MEDIUM

Essential Mixed Vegetables

Prep Time: 30 minutes **Cook Time:** 10 minutes
Processing Time: 1 hour 30 minutes **Makes:** 7 quarts

Add these all-purpose vegetables to soups or casseroles, season upon serving as a simple side dish, or add to grains for a nutritious boost.

7 cups chopped carrots (2 pounds)
7 cups chopped green beans (2½ pounds)
7 cups (2½ pounds) corn kernels (fresh or frozen) or kernels from 8 fresh ears of corn
1¾ teaspoons Diamond Crystal kosher salt, plus more for salting water
7 cups peeled, chopped potatoes (2½ pounds)

1. Prep 7 quart jars and your pressure canner according to the instructions in Pressure Canning, Step-by-Step .
2. Make sure the carrots, potatoes, and green beans are all chopped to relatively the same size.
3. In a large pot, combine the carrots, green beans, and corn, cover with water, and bring to a boil. Cook for 5 minutes.
4. Bring another large pot full of salted water to a boil and add the potatoes. Reduce the heat to maintain a simmer and cook for 5 minutes (they won't be fully cooked, just slightly softened).
5. Place ¼ teaspoon of salt into each jar (if using). Fill the prepared jars with the hot vegetables and liquid, leaving 1 inch of headspace.
6. Remove any air bubbles, wipe the jar rims, secure the lids and rings finger-tight, and load the jars into the pressure canner. Process the jars at 10 pounds pressure for 40 minutes, according to the instructions in Pressure Canning, Step-by-Step .

EASY

Rainbow Beets

Prep Time: 20 minutes, plus 10 minutes cooling time **Cook Time:** 15 minutes
Processing Time: 30 minutes **Makes:** 4 pints

Canning classic deep-red beets with delicate pink and yellow ones will turn them all red, so separate yellow or pink varieties from the classic deep-red ones. The vinegar helps the beets retain their color, so you'll have beautiful salads all year long.

8 to 10 medium multicolored beets (6 pounds), scrubbed
2 teaspoons Diamond Crystal kosher salt, divided
4 teaspoons apple cider vinegar or white distilled vinegar, divided
Boiling water, for filling the jars

1. Blanch the beets to peel them: Bring a large pot of water to a boil, add the beets, and cook for 15 minutes.
2. While the beets cook, fill a large bowl with a 50-50 mix of ice and water. Using a slotted spoon or tongs, transfer the blanched beets into the ice water. Let cool, then remove the skins with a paring knife or your hands. Cut the beets into ½-inch or bite-size pieces.
3. Prep 4 pint jars and a pressure canner according to the instructions in Pressure Canning, Step-by-Step .
4. Pack the cut beets into the prepared jars, leaving 1 inch of headspace. Add ½ teaspoon of salt and 1 teaspoon of vinegar to each jar. Fill the jars with boiling water, leaving 1 inch of headspace.
5. Remove any air bubbles, wipe the jar rims, secure the lids and rings finger-tight, and load the jars into the pressure canner. Process the jars at 10 pounds pressure for 30 minutes, according to the instructions in Pressure Canning, Step-by-Step .

EASY

Simple Canned Tomatoes, Many Ways

Prep Time: 45 minutes **Cook Time:** 20 minutes **Processing Time:** 15 minutes
Makes: 7 quarts

Pressure canning your tomatoes allows you to savor the fresh taste of summer year-round. You can can any type of tomato; just be sure they're ripe and juicy. I like beefsteak tomatoes and heirloom varieties, but use Roma if you prefer—just be sure to go by weight.

21 pounds (about 36 medium) tomatoes, any variety

7 teaspoons seasoning of choice, such as Chicken or Potato Herb Rub , taco seasoning, Italian seasoning, dried basil, dried onion, red pepper flakes, or 7 bay leaves

14 tablespoons bottled lemon juice

7 teaspoons Diamond Crystal kosher salt (optional)

1. In a large bowl, prepare an ice water bath.
2. Blanch the tomatoes to peel them: Bring a large pot full of water to a boil. Using a paring knife, cut a shallow X into the bottom of each tomato, then drop the tomatoes, a few at a time, into the water for 30 to 60 seconds, or until you see the skins starting to peel away at the X. Transfer the tomatoes to the ice bath and peel off the skins. At the same time, inspect the tomato and remove any pieces you don't want to preserve. Halve the peeled tomatoes and place them in another large bowl.
3. Prep 7 quart jars and your pressure canner according to the instructions in Pressure Canning, Step-by-Step .
4. Place 1 teaspoon of seasoning, or a bay leaf, plus 2 tablespoons lemon juice, in each prepared jar. Add 1 teaspoon salt per jar, if using. Fill the jars with the tomatoes, leaving 1 inch of headspace.
5. Remove any air bubbles, wipe the jar rims, secure the lids and rings finger-tight, and load the jars into the pressure canner. Process the jars at 10 pounds pressure for 25 minutes, according to the instructions in Pressure Canning, Step-by-Step .

MEDIUM

End-of-Summer Bean and Tomato Stew

Prep Time: 20 minutes **Cook Time:** 30 minutes
Processing Time: 1 hour 10 minutes for pints; 1 hour 20 minutes for quarts
Makes: 10 pints or 5 quarts

These delectable tomatoes and beans are so good. Taken alone, they make a great soup. Pour them over rice and grains for added bulk and enjoy a wholesome meal. Add meat for a protein boost. This hearty combo will warm you on a cold day and remind you of a warmer time. Omit the beans for a simple tomato sauce.

2 tablespoons olive oil
1 cup chopped celery (1 stalk)
1 cup minced white onion (1 onion)
2 garlic cloves, minced
½ cup chopped bell pepper, any color
4 (32-ounce) cans crushed tomatoes
4 cups water
4 cups cooked beans (lima, chickpeas, or white), or 3 (15-ounce) cans, drained and rinsed
2 teaspoons Diamond Crystal kosher salt, plus more as needed
2 teaspoons thinly sliced fresh basil or 1 teaspoon dried, plus more as needed

1. In a large pot over medium-high heat, heat the oil. Add the celery, onion, and garlic, and cook for about 5 minutes, stirring constantly, until soft.
2. Add the bell pepper and cook for 5 minutes until the pepper is soft.
3. Stir in the tomatoes and water and bring to a boil.
4. Add the beans to the tomato mixture and return the mixture to a boil.
5. Stir in the salt and basil. Taste and adjust the seasoning, as needed.
6. Prep 10 pint or 5 quart jars and your pressure canner according to the instructions in Pressure Canning, Step-by-Step .
7. Fill the jars with the hot tomato and bean mixture, leaving 1 inch of headspace.
8. Remove any air bubbles, wipe the jar rims, secure the lids and rings finger-tight, and load the jars into the pressure canner. Process the jars at 10 pounds pressure for 1 hour 10 minutes for pints, or 1 hour 20 minutes for quarts, according to the instructions in Pressure Canning, Step-by-Step .

Instructions: *Freeze this stew in pint or quart plastic storage cups for up to 9 months.*

D IFFICULT

Baked Beans

Prep Time: 30 minutes **Cook Time:** 5 hours
Processing Time: 1 hour 20 minutes for pints; 1 hour 35 minutes for quarts
Makes: 6 pints or 3 quarts

If you put in the time for this recipe, you'll find it's well worth it. The slow-simmered flavor is head and shoulders above a store-bought can of beans. If you like a little bit of heat, add 2 to 3 tablespoons minced chipotle pepper to your batch. See the tip for a vegetarian version.

2 pounds dried navy beans, rinsed and sorted
4 Smoked Bacon slices or store-bought bacon, diced
2 large yellow or white onions, chopped
⅔ cup packed light brown sugar, plus more as needed
⅔ cup molasses
2 tablespoons apple cider vinegar
1 tablespoon garlic powder, plus more as needed
1 teaspoon ground mustard
2 teaspoons Diamond Crystal kosher salt, plus more as needed

1. Preheat the oven to 350°F.
2. In a large Dutch oven or stockpot, combine the beans with enough water to cover by 3 inches. Bring to a boil over high heat, cover the pot, and cook for 1 to 1½ hours, or until tender. Check the beans halfway through the cooking time and top off the water to be sure the beans are submerged. Alternatively, cook the beans in your electric pressure cooker on bean mode, or at high pressure for 40 minutes. Let the pressure release naturally. Drain the beans, reserving 5 cups of cooking liquid.
3. Return the oven to 350°F if needed.
4. Place the cooked beans into a large baking dish or bean pot.
5. Stir in the bacon, onions, brown sugar, molasses, vinegar, garlic powder, ground mustard, salt and the reserved cooking liquid. If you do not have enough cooking liquid, use water. Mix well.
6. Cover the dish and bake for 3 to 3½ hours, mixing the beans and checking the level of liquid every hour; the beans should have a soupy consistency. You may need to add more liquid toward the end of the cooking time. Remove from the oven, taste, stir, and add more salt, brown sugar, or garlic powder, as needed.
7. Prep 6 pint or 3 quart jars and your pressure canner according to the instructions in Pressure Canning, Step-by-Step .
8. Fill the jars with hot beans, leaving 1 inch of headspace.
9. Remove any air bubbles, wipe the jar rims, secure the lids and rings finger-tight, and load the jars into the pressure canner. Process the jars at 10 pounds pressure for 1 hour 20 minutes for pints, or 1 hour 35 minutes for quarts, according to the instructions in Pressure Canning, Step-by-Step .

Try This Instead: *To make a vegetarian version, in step 5, omit the bacon and add 2 tablespoons olive oil, 1 tablespoon tamari or liquid aminos, 2 tablespoons Scratch*

Tomato Paste or store-bought paste, and 1 teaspoon smoked paprika or liquid smoke (if desired).

EASY

Simple Canned Salmon

Prep Time: 20 minutes, plus 1 hour to brine
Processing Time: 1 hour 40 minutes **Makes:** 4 pints

If you fish, this is a great way to preserve your catch instead of packing your freezer. It makes a quick and healthy source of protein that can be used in a number of ways.

2 pounds salmon fillets, skin-on or skinless
1 cup Diamond Crystal kosher salt
1 gallon water

1. If you caught your own salmon, gut it within 2 hours of being caught. Remove the head, tail, and scales, but leave the skin on. Wash the fish and remove any blood. Keep the fish clean and refrigerated, or on ice, until you are ready to process it.
2. In a large food-safe container, dissolve the salt in the water to make a brine (it should dissolve without needing to heat the water).
3. Cut the salmon into 3-inch pieces, add to the brine, and refrigerate for 1 hour.
4. Prep 4 pint jars and your pressure canner according to the instructions in Pressure Canning, Step-by-Step .
5. Drain the fish and pack it into the hot jars, skin-side facing the glass, leaving 1 inch of headspace.
6. Remove any air bubbles, wipe the jar rims, secure the lids and rings finger-tight, and load the jars into the pressure canner. Process the jars at 10 pounds pressure for 1 hour 40 minutes, according to the instructions in Pressure Canning, Step-by-Step .

Try This Instead: *Add ½ teaspoon per jar of one of the following: Dijon mustard, fresh or dried dill, lemon pepper, or an Italian seasoning blend.*

MEDIUM

Chili con Carne

Prep Time: 20 minutes **Cook Time:** 35 minutes
Processing Time: 1 hour 15 minutes for pints; 1 hour 30 minutes for quarts
Makes: 8 pints or 4 quarts

Impress your friends at impromptu football tailgates by whipping out jars of your hearty, homemade, chili. This simple chili recipe is great served with beans or without.

6 pounds ground beef
3 cups chopped yellow or white onion
3 garlic cloves, minced
2 (32-ounce) cans crushed tomatoes
½ cup plus 2 tablespoons chili powder
2 tablespoons ground cumin
1½ tablespoons Diamond Crystal kosher salt, divided

1. In a large Dutch oven over medium heat, brown the meat for about 15 minutes, breaking up clumps, until no pink remains. Drain off any fat.
2. Add the onion and garlic. Cook for about 5 minutes until the onion is tender.
3. Stir in the tomatoes, chili powder, and cumin. Cook for 15 minutes; skim any fat from the surface of the chili. Add 1 tablespoon of salt; taste and add more salt, up ½ tablespoon more, as needed.
4. Prep 8 pint or 4 quart jars and your pressure canner according to the instructions in Pressure Canning, Step-by-Step .
5. Pack the chili into the hot jars, leaving 1 inch of headspace.
6. Remove any air bubbles, wipe the jar rims, secure the lids and rings finger-tight, and load the jars into the pressure canner. Process the jars at 10 pounds pressure for 1 hour 15 minutes for pints, or 1 hour 30 minutes for quarts, according to the instructions in Pressure Canning, Step-by-Step .

Try This Instead: *Substitute ground turkey or ground chicken as a heart-healthier option.*

MEDIUM

Essential Chicken Soup

Prep Time: 30 minutes **Cook Time:** 20 minutes
Processing Time: 1 hour 15 minutes for pints; 1 hour 30 minutes for quarts
Makes: 8 pints or 4 quarts

Chicken soup is the perfect dish to have at the ready. It will comfort, captivate, and cure in a single serving. Using cooked chicken and sautéing the vegetables makes this soup a little richer than cooking the chicken in the broth. Turmeric gives an anti-inflammatory boost, too. If you like, add cooked noodles or rice before serving.

1 tablespoon olive oil
1½ cups chopped carrot
1 cup chopped celery
1 cup chopped yellow onion
2 garlic cloves, minced
1 tablespoon ground turmeric
8 cups Slow Cooker Chicken Bone Broth or store-bought chicken broth
2 cups shredded cooked chicken
1 teaspoon Diamond Crystal kosher salt, plus more as needed
2 teaspoons freshly ground black pepper, plus more as needed

1. In a stockpot over medium heat, combine the oil, carrot, celery, onion, and garlic. Sauté for about 10 minutes until slightly browned. Add the turmeric and cook for 2 minutes, stirring.
2. Add the broth and increase the heat to bring the mixture to a simmer. Add the chicken and stir to combine. Stir in the salt and pepper, taste, and adjust the seasoning as needed.
3. Prep 8 pint or 4 quart jars and your pressure canner according to the instructions in Pressure Canning, Step-by-Step .
4. Pack the soup into the hot jars, leaving 1 inch of headspace.
5. Remove any air bubbles, wipe the jar rims, secure the lids and rings finger-tight, and load the jars into the pressure canner. Process the jars at 10 pounds pressure for 1 hour 15 minutes for pints, or 1 hour 30 minutes for quarts, according to the instructions in Pressure Canning, Step-by-Step .

EASY

Easy Venison or Beef Stew

Prep Time: 25 minutes **Processing Time:** 1 hour 15 minutes
Makes: 9 pints

Stews usually need to simmer for hours, but pressure canning does all that cooking for you much more quickly. Just pack the raw meat and seasonings into the jars and process for long-simmered flavor.

1¼ cups Garlic Tomato Sauce or store-bought tomato sauce
4½ teaspoons taco seasoning or Chicken or Potato Herb Rub
4½ teaspoons Diamond Crystal kosher salt (optional)
4 pounds venison or beef chuck, excess fat removed, cut into 1-inch chunks or strips

1. Prep 9 pint jars and your pressure canner according to the instructions in Pressure Canning, Step-by-Step .
2. Evenly distribute the tomato sauce among the jars—2 tablespoons per jar.
3. Add ½ teaspoon of seasoning to each jar and ½ teaspoon of salt (if using) per pint.
4. Pack the raw meat into the jars, leaving 1 inch of headspace, pushing down on the venison to remove as much air as possible. Examine the jar while you are packing it to make sure there are no large air pockets; you may need to move the meat pieces around a bit. Do not add extra liquid.
5. Remove any air bubbles, wipe the jar rims, secure the lids and rings finger-tight, and load the jars into the pressure canner. Process the jars at 10 pounds pressure for 1 hour 15 minutes, according to the instructions in Pressure Canning, Step-by-Step .

Classic Sauerkraut

CHAPTER FOUR

Fermenting

FERMENTING 101

Unlike other methods of food preservation that work to inhibit the growth of microorganisms, fermentation does the opposite: it harnesses the power of beneficial bacteria to create beautiful, delicious, preserved foods. For the past decade, fermentation has ridden a wave of popularity with chefs, homesteaders, and food enthusiasts alike because it's accessible and healthy, and it creates unique flavors that develop and change over time. Because this method works with living organisms, fermentation projects grow and evolve over time and can allow for nuanced flavors that can turn a simple recipe into a (healthy) obsession.

Fermentation works by creating a slightly acidic environment, either with a salt brine solution or (in some cases) vinegar, allowing for beneficial microorganisms to thrive while blocking harmful ones from establishing themselves. Depending on the method, the microorganisms can come from the air, the fermenting produce, or by being introduced manually. Once the microorganisms establish in the environment, they feed off natural sugars (in the form of the item being fermented, or actual sugar introduced into the environment), and, when the conditions are right, they multiply and thrive. The breakdown of the sugars and increase of byproduct (tastier than it sounds) from the microorganisms preserve the food. In other words, fermentation preserves food while retaining its nutrients because it does not use extreme heat or cold, which can lead to nutrient loss.

Fermentation also creates new nutrients as a result of the culture's life cycle. The work of the microorganisms helps break down hard-to-digest items, even those that might have toxins. One of the best examples of this is soybeans, a dense legume that is hard to digest. Fermentation manipulates soybeans into digestible items like tofu, tempeh, soy sauce, and miso. This preservation method turns an inedible ingredient into one of the most diverse, delicious, and widely used staples in Asia and Asian-inspired cooking.

One major reason behind the popularity of fermented foods is probiotics, which have become a buzzword in recent years. Probiotics are simply bacteria that are good for our bodies. The diverse array of fermented foods, each with its own dense bacterial makeup, interacts with and benefits our bodies. Probiotics are known to help strengthen immunity, improve digestion, and improve overall wellness. It's important that the ferments are consumed "alive," or "with live cultures," if purchased commercially. Many store-bought ferments heat-seal or pasteurize their products to make them shelf stable, or longer lasting (kind of like what we did in chapter 3). The high heat destroys the probiotics, which is why many people start to make their own fermented foods. And once ferments are complete, they generally last between 3 and 6 months in the refrigerator.

Because you are dealing with live microorganisms to preserve food, you must micromanage your ferments. The work is done over time and fermentation is a method that requires checking, evaluating, and assisting the process the entire time. This is the trade-off with other forms of food preservation. It's easy to set up, but you have to monitor your "garden" to achieve a successful crop. It's the same amount of work as pressure canning in chapter 3 , but it entails little steps over time. Pressure canning is a lot of work in a few hours. Fermenting is little bit of work over longer periods of time.

Essential tools and equipment

What's amazing about fermentation is that you can get started right now, if you have a few simple things. You can use this preservation method anywhere, if you have the time.

FERMENTATION VESSELS

The beauty of fermentation is that you can start now with the humblest of ingredients and tools, like a simple glass jar. You can also really get into it and end up with a huge collection of containers. The following is a list of different vessels for projects. *Do not use metal containers for ferments,* because the long-term exposure to acids can negatively affect the food.

Ceramic crock: Ceramic crocks were most likely the first vessels used for fermenting, and they are still used today. Most crocks come with a stone or ceramic weight used to press items down below the brine's surface. They are beautiful and there are several artisan potters (included in the Resources section) that make amazing, functional pieces that also add a decorative touch to a kitchen. Unlike glass, you can only view what is happening to your ferment from the top; I suggest using this type of vessel only once you are comfortable with the fermenting process. If you do happen to find a used ceramic crock, examine it thoroughly for cracks or damage; if you have any doubt of its origins, test the paint for lead.

Glass container: I love to use glass for fermenting for several reasons. The containers are widely available, come in a variety of sizes and shapes, are reusable, and do not leach. You might already have the containers you need. I like to use small glass containers for projects like yogurt, large ones for pickles, and containers with narrow necks for fermented beverages like ginger beer or mead. Glass containers are great for beginners because you can see the entire ferment from top to bottom and it looks cool to have your food “experiment” on display. With glass containers, you will have to devise your own weight to keep items submerged in the brine.

Plastic container: If you are prone to dropping things, food-grade plastic containers are the way to go. Many people who do large-batch ferments use plastic tubs, and it’s my vessel of choice at my café because I often have to move around large batches of foods, which can be heavy. Make sure you use food-safe containers. As with glass, you will have to add your own weight.

MASON JAR AIRLOCK FERMENTER KITS

These kits are relatively new, born out of the rise in popularity of food fermentation and homebrewing. The kits come with an airlock device that allows the ferment to breathe as carbon dioxide escapes from the jar, while protecting the contents from dust, insects, oxidation, etc. They make fermenting quite easy and are great for young people, or those who might not feel as confident with fermentation projects. You won’t need a weight if you use an airlock. There are several versions of airlocks on the market and they are available from any homebrewing store or website. There are some recommendations in the Resources section.

WEIGHTS

Fermentation weights submerge vegetable and fruit pieces under the brine, so they are not contaminated by the air (and anything in the air). Traditional crocks come with a weight, but if using a glass jar or plastic container, you will have to make your own. Common weights are made using plates with a jar on top, or even better, a heavy-duty resealable plastic bag filled with the same brine solution as the ferment.

TYPES OF STARTERS

For purposes of this book, we will focus primarily on lacto-fermentation—but not everything fermented is accomplished with our lactic acid bacteria friends. There are other beneficial bacteria, yeasts, and microorganisms that assist in different types of fermentation, depending on what you are trying to make and what ingredient you want to ferment. A few notable ones include:

Active live cultures: These are cultures, or concentrations, of specific types of “good” bacteria that you can purchase to add to specific fermentation projects—typically beer, wine, and dairy, such as yogurt—where a particular microorganism is needed to facilitate a specific ferment. Some cultures are

dried and need water, or a warm environment, to be activated; others are liquid.

Mother vinegar: Mother vinegar is a collection of beneficial bacteria that assists in fermentation in vinegar, specifically. Their appearance is like SCOBY (see next page), but they are usually smaller and not as pronounced. You can transfer them to start vinegar making.

SCOBY (symbiotic community of bacteria and yeast): Sometimes called "mushroom," this is a collected concentration of microorganisms that forms a gelatinous disk that will kick-start fermentation in the right environment. SCOBYs look strange, but they are filled with good organisms that assist fermentation of kombucha and kefir (I have even made pickles from SCOBYs). You can buy SCOBYs online, grow them from smaller existing ones, or get one from a person who makes kombucha.

Sourdough starter: There are whole books dedicated to this type of fermentation and its results, and I highly recommend checking out some of them. Starters for sourdough relate to the fermentation of grains, specifically in the creation of breads where the baking eventually destroys the "live" component. Sourdough starters are collections of wild yeasts that work with grains in specific environments to create air, texture, flavor, and other nuances that make great bread truly great. This is a skill and method beyond the scope of this book, but I will note resources for further learning in the Resources section.

Essential ingredients

If you are making a brine, water is going to be a major component. Chlorinated water will harm fermentation projects (that's what chlorine does—it kills microorganisms), so, if you smell chlorine or taste it in your water, use distilled water available at grocery stores. If you're unsure of your water, have it tested.

Another staple in most fermentation projects, salt is critical in creating ideal environments for good bacteria while blocking harmful ones. For recipes in this book, I recommend Diamond Crystal kosher salt, easily found at most grocery stores.

FERMENTING, STEP-BY-STEP

Because we are dealing with living organisms to preserve food, and there are so many foods you can ferment, all with their own unique properties, I discuss specific steps in detail in the recipes. There are some universal rules applicable to lacto-fermentation, however, which I describe here. Keep in mind that cultures need to be treated as live and specific to ingredients.

1. **Choose the best produce.**
   Always use the best produce available because these items carry the bacteria that will start your fermentation project. Inspect all produce for blemishes, soft

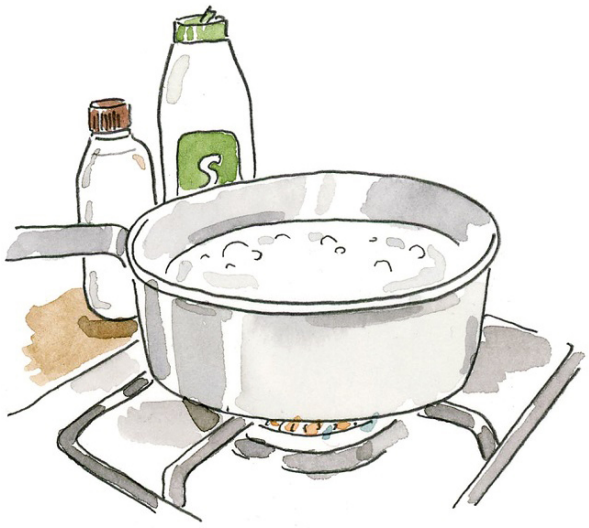
spots, and areas of decay. The skins must be firm, not tough, which would make them less able to interact with the pickling solution and reactions. Always use **unwaxed** produce when fermenting.

2. Clean your vessel and produce.

Wash your fermentation vessel well with hot soapy water. Make sure there is no soap residue remaining after rinsing. Wash any soil from produce but don't scrub it senseless or use a vegetable cleaner because you need the lactic acid bacteria on the produce to start the fermentation process. Pack your items tightly into the clean container.

3. Make the brine.

The salt brine you need to start the fermentation process can be created in two ways, depending on the size of the pieces you want to ferment. Items with high moisture content and a lot of surface area, like shredded cabbage, will create their own brine when interacting with the salt. For larger pieces, or less water-rich produce, you'll need to create a brine. Follow the recipe for instructions.



4. Submerge your ferment.

Fill your vessel with brine until the items to be fermented are covered. More brine will be created as time passes, so you do not need to overdo it; just fill the vessel so the items are submerged when you press down on them. If you have an airlock, secure your lid, lock it, and fill it with water or brine. If you have a weight, add that to the vessel. If you do not have a weight, create one using a heavy-duty resealable plastic bag filled with brine (if the bag breaks, it will not dilute the ferment). Make sure all items are submerged under the brine. Cover the vessel with a cloth or a few layers of cheesecloth and secure it around the container with a rubber band or string.

5. **Store your ferment.**
   Place the vessel in an area where the temperature is between 70°F and 90°F. The storage temperature will affect your ferment. If it's too hot, the process will happen too quickly and the food will be soft or broken down. If it's too cold, fermentation may not happen at all, or it will happen too slowly and can affect the final product. When the temperature is not ideal, it can lead to other—unwanted—bacteria invading your ferment.
6. **Check your ferment.**
   Scum may form on the surface. Check regularly for scum and remove any immediately. Leaving scum on the ferment will eventually affect your product, so pay attention and maintain a clean surface area on the top of the ferment.
   The following will happen under the right conditions. It is important to check your ferment daily and even take notes on your observations. Fermentation begins in just a few days and can last for months in controlled conditions and temperatures. During days 1 to 3, you should see a clear brine with no cloudiness. In 2 to 5 days, you'll have a cloudy brine with gas formation. Gas is forming when you see little bubbles around the items being fermenting that were not there before. In an airlock, you will see the gas pass through. Around day 5 or 6, the brine will be cloudy with no gas formation.
7. **Taste your ferment.**
   After day 6, begin to taste your ferment. Keep tasting and monitoring your ferment until it reaches your desired flavor; the longer it sits, the stronger the flavors. Once your ferment is completed, refrigerate it to slow the process.

Troubleshooting

EASY

Classic Sauerkraut

Prep Time: 1 hour **Fermentation Time:** 4 to 14 days **Makes:** 1 quart

Though *sauerkraut* is a German word, meaning “sour cabbage,” the fermented dish is said to have originated in China. Still, there are numerous recipes for sauerkraut from all over the world. Here’s a simple one to get you started. You can substitute purple cabbage for the green cabbage, although it will be a little tougher.

3 pounds thinly shredded green cabbage (from about 3 small heads)
1½ tablespoons Diamond Crystal kosher salt

1. Place the shredded cabbage in a very large bowl. Sprinkle the salt all over the cabbage. Massage or pound the cabbage, making sure the salt goes everywhere. You can use your hands or a cabbage pounder (a large wooden muddler) to do this. Wear gloves if you have cuts or sensitive hands. As you massage the cabbage, you will start to see and feel it become softer and notice some water. You should get the cabbage to a point where you can pick up a handful and squeeze liquid from it. This will take 10 to 20 minutes.
2. Pack the cabbage into a quart jar, including the juice, and pack it down, eliminating any air pockets you can find. The cabbage should be packed down so much that the juices should start to come up over the cabbage.
3. Once the cabbage has been packed down with the brine covering the top of it, place a weight on it to keep the cabbage submerged in the brine. If using a crock, use the crock weight; if using a Mason jar, make a weight with a heavy-duty resealable plastic bag containing a salt brine solution comprised of 2 cups water and ½ ounce salt.
4. After you weight the cabbage, cover the vessel’s opening with a clean cloth towel or cheesecloth and secure it with a rubber band or string. If using an airlock, secure the airlock to your lid, fill the lock with water, and secure it to the top of the vessel. Place the vessel on the counter, out of the sun’s light, where you can easily monitor it.
5. After a few days, begin tasting the cabbage, making sure to push the remaining cabbage down under the brine and removing any scum that might have formed on top (see here , Fermenting, Step-by-Step, step 6). Once the sauerkraut has a taste and texture you like, which may take up to 14 days, move the ferment into the refrigerator to slow the fermentation process. Some prefer sauerkraut with a lightly fermented taste, whereas others prefer a stronger flavor.
6. Save the sauerkraut juice as a brine for your next batch, or to drink as a healthy tonic. As you make more sauerkraut, keep notes on the flavors and textures you like with the days of fermentation tracked.

Try This Instead: *Add 1 tablespoon dried dill or caraway seed or ½ tsp juniper berries or a few bay leaves for a slightly different flavor, or add 1 chile pepper, minced, to your cabbage for a bite.*

MEDIUM

Spicy Kimchi

Prep Time: 1 hour, plus 6 to 12 hours to soak **Fermentation Time:** 4 to 14 days
Makes : 4 cups

Making kimchi is similar to making sauerkraut Classic Sauerkraut : the base of the ferment is cabbage, which is salted to ferment it. The fundamental difference is that sauerkraut creates its brine from the water extracted from the cabbage by the salt; with kimchi, you create a brine for the cabbage. Brining the cabbage not only extracts water from it, but allows it to then absorb the flavor components that make kimchi, kimchi! This recipe calls for gochugaru, which is Korean chili powder, that provides heat and that wonderful red color. You can buy it online, or look for it at Asian grocery stores.

2 pounds (1 medium head) napa cabbage, roughly chopped
6 tablespoons Diamond Crystal kosher salt, plus 1 to 2 teaspoons if needed
4 cups water
1 bunch scallions (white and green parts), cut into 2-inch pieces
3 tablespoons fine gochugaru
2 tablespoons grated peeled fresh ginger
2 garlic cloves, pressed or minced

1. Place the chopped cabbage in a large bowl or 1-gallon jar.
2. In a medium bowl, combine the salt and water, stirring until the salt dissolves. Pour the brine over the cabbage and gently mix for a few minutes, making sure all the cabbage is covered. Cover the bowl and place it on the counter for 6 to 12 hours.
3. Drain the cabbage and squeeze out the brine, reserving ½ cup of brine. Taste the cabbage; it should have a sea water–type saltiness. If it's too salty, lightly rinse it; if it's not salty enough, add 1 to 2 teaspoons of salt to the paste in step 4. Return the cabbage to its container. Add the scallions.
4. In a small bowl, stir together 1 to 2 teaspoons of salt (if needed, see step 3) the gochugaru, ginger, and garlic, mixing well to create a paste. Add a small amount of brine if it seems dry. Rub the paste all over the cabbage and scallions (you might want to wear gloves for this step, and avoid touching your face!), covering the pieces as much as possible.
5. Pack the cabbage tightly into a clean 1-gallon jar (you can use the one you used in step 1, but wash it first) and remove any air bubbles. Put a weight on the cabbage to keep it submerged. If using a crock, use the crock weights; if using a Mason jar, make a weight with a heavy-duty resealable plastic bag containing a salt brine solution comprised of 2 cups water and ½ ounce salt.
6. After you weight the cabbage, cover the vessel's opening with a clean cloth towel or cheesecloth and secure it with a rubber band or string. If using an airlock, secure the airlock to your jar lid, fill the lock with water, and secure it to the top of the jar. Place the vessel on the counter away from sunlight.
7. After 4 days, start to taste the kimchi, submerging the cabbage in the brine and removing any scum that might have formed over the top after every tasting (see here , Fermenting, Step-by-Step, step 6). Once the kimchi has your desired flavor, which may take up to 14 days, move the kimchi into the refrigerator to slow the fermentation process.

Try This Instead: *Use this recipe as a start, but adjust the seasonings (garlic,*

gochugaru, and ginger) to your desired liking.

EASY

Dill Pickles

Prep Time: 15 minutes **Fermentation Time:** 2 weeks **Makes:** 4 cups

Dating back thousands of years—and reportedly boasting Cleopatra and Julius Caesar as two of its fans—the pickle traveled to America with Christopher Columbus. Its deliciousness survived the journey to become an incredibly popular treat. On average, Americans consume 8 ½ pounds of pickles each year. Here's a classic deli-style recipe, so you can get started on your part of that quota!

2 pounds (about 6) pickling cucumbers, stem end trimmed
2 fresh dill heads or 1 tablespoon dried dill
1 head garlic, cloves separated and peeled
4 cups water
2 tablespoons Diamond Crystal kosher salt

1. Examine the cucumbers, making sure there are no soft, bruised, or discolored spots. Do a light wash and place the cucumbers in a clean crock, glass jar, or glass jar with an airlock attachment. Add the dill and garlic.
2. In a medium bowl, make the brine by combining the water and salt, stirring until the salt dissolves. Pour the brine over the seasoned cucumbers. Put a weight on the cucumbers to keep them submerged. If using a crock, use the crock weights; if using a Mason jar, make a weight with a heavy-duty resealable plastic bag containing a salt brine solution comprised of 2 cups water and ½ ounce salt.
3. After you weight the pickles, cover the vessel's opening with a clean cloth towel or cheesecloth and secure it with a rubber band or string. If using an airlock, secure the airlock to your jar lid, fill the lock with water, and secure to the top of the jar. Place the vessel on the counter in a cool dry place.
4. Let the cucumbers ferment for 2 weeks, removing any scum that forms on the top (see here , Fermenting, Step-by-Step, step 6). Depending on the temperature of your kitchen, the cucumbers should be ready in about 2 weeks. The brine will be cloudy and the cucumbers will be translucent when cut open.
5. After this point, move the pickles into the refrigerator, where the flavors will continue to develop over time.

Try This Instead: *Once you get the hang of this recipe, mix up the spices using dried chiles, coriander peppercorns, or just about anything you like.*

MEDIUM

Giardiniera

Prep Time: 30 minutes **Fermentation Time:** 7 to 10 days **Makes:** 2 quarts

This Italian mixed pickle, meaning “from the garden” in Italian, is great to serve with salads, dried meats, and cheeses. In Italy, it’s traditionally served as an antipasto. Italian immigrants who migrated to Chicago created abundant unique uses and flavors for this Italian staple in their communities.

1 large head cauliflower, florets and tender stem cut into small pieces (about 4 cups)
2 bell peppers, any color, thinly sliced
2 carrots, thinly sliced
2 celery stalks, diced
1 onion, thinly sliced
3 garlic cloves, thinly sliced
2 to 3 bay leaves
2 thyme sprigs or 2 teaspoons dried thyme
5 cups water
3 tablespoons Diamond Crystal kosher salt

1. In a large bowl, stir together the cauliflower, bell peppers, carrots, celery, onion, and garlic. Put the vegetables in the fermenting container and add the bay leaves and thyme.
2. In a medium bowl, make the brine by combining the water and salt, stirring until the salt dissolves. Pour the brine over the vegetables, packing the vegetables down so they are covered with brine.
3. Put a weight on the vegetables to keep them submerged in the brine. If using a crock, use the crock weights; if using a Mason jar, make a weight with a heavy-duty resealable plastic bag containing a salt brine solution comprised of 2 cups water and ½ ounce salt.
4. After you weight the mixture, cover the vessel’s opening with a clean cloth towel or cheesecloth and secure it with a rubber band or string. If using an airlock, secure the airlock to your jar lid, fill the lock with water, and secure it to the top of the jar. Place the vessel on the counter, out of the sun’s light.
5. Let the mixture ferment for 7 to 10 days, removing any scum that forms on top (see here , Fermenting, Step-by-Step, step 6). When the giardiniera has the desired flavor, place it in the refrigerator to slow the process, where it will keep for 3 to 6 months.

MEDIUM

Spicy Fermented Green Beans

Prep Time: 15 minutes **Fermentation Time:** 7 to 10 days
Makes: 1 quart

What can't you use these green beans for? Add them to a cold pasta salad, or any salad at all for that matter. Please the dinner crowd with a spicy green bean side dish. Or, best of all, feature them prominently on your Bloody Mary buffet.

1 to 1½ pounds green beans, ends trimmed
2 garlic cloves, thinly sliced
4 chiles de Árbol or other small dried hot chile peppers
2 bay leaves
3 cups water
2 tablespoons Diamond Crystal kosher salt

1. In a medium bowl, combine the green beans and garlic. Transfer them to your fermenting container and add the chile peppers and bay leaves.
2. In another medium bowl, make the brine by combining the water and salt, stirring until the salt dissolves. Pour the brine over the vegetables, packing the vegetables down so they are covered with brine.
3. Put a weight on the vegetables to keep them submerged in the brine. If using a crock, use the crock weights; if using a Mason jar, make a weight with a heavy-duty resealable plastic bag containing a salt brine solution comprised of 2 cups water and ½ ounce salt.
4. After you weight the green beans, cover the vessel's opening with a clean cloth towel or cheesecloth and secure it with a rubber band or string. If using an airlock, secure the airlock to your jar lid, fill the lock with water, and secure it to the top of the jar. Place the vessel on the counter, out of the sun's light.
5. Ferment for 1 week, removing any scum that forms on top (see here , Fermenting, Step-by-Step, step 6). Once the green beans have the desired flavor (it may take a few more days), move them into the refrigerator to slow the process, where they will last for 3 to 6 months.

MEDIUM

The Best Hot Sauce

Prep Time: 30 minutes **Fermentation Time:** 3 to 4 weeks **Makes:** 2 cups

I make a version of this hot sauce all the time at my café and people just go crazy for it. You can substitute all sorts of chiles in this recipe to make your own custom hot sauce. If made ahead of time, this makes a great holiday gift. And if you're anything like me, you'll pour this on everything. This makes a green hot sauce; if you like red, simply swap in red jalapeños.

2 cups sliced stemmed jalapeño peppers (include seeds and veins if you want a spicier sauce)
3 cups water
2 tablespoons Diamond Crystal kosher salt
2 garlic cloves, peeled
1 cup distilled white vinegar or apple cider vinegar (optional)

1. Put the jalapeños into a quart glass jar or container with enough room to accommodate the brine and the weight, if you are not using an airlock.
2. In a medium bowl, make the brine by combining the water and salt, stirring until the salt dissolves. Pour the brine over the chiles, covering them by ½ inch. You may not need all the brine. Tamp down the chiles to remove any air pockets and make sure the brine covers all the jalapeño pieces.
3. Put a weight on the chiles to keep them submerged in the brine. If using a crock, use the crock weights; if using a Mason jar, make a weight with a heavy-duty resealable plastic bag containing a salt brine solution comprised of 2 cups water and ½ ounce salt.
4. After you weight the chiles, cover the vessel's opening with a clean cloth towel or cheesecloth and secure it with a rubber band or string. If using an airlock, secure the airlock to your jar lid, fill the lock with water, and secure it to the top of the jar. Place the vessel on the counter, away from sunlight.
5. Let the chiles ferment for 3 to 4 weeks, removing any scum that forms on top (see here , Fermenting, Step-by-Step, step 6). The chiles will be soft and a bit darker in color. If you taste a small piece, it will taste tangy as well as spicy. Tamp down the chiles occasionally.
6. Once the fermenting time elapses, drain the jalapeños, reserving the brine.
7. In a blender, combine the fermented jalapeños and garlic. Add either 1 cup of brine or 1 cup of vinegar (if you prefer the flavor) and blend until smooth. If you want the hot sauce to be thinner, add more liquid.
8. Refrigerate, labeled, in an airtight glass jar for 2 to 3 months.

Don't Forget: *When working with hot peppers, wear gloves to protect your hands and your face, and do not touch your eyes or mouth.*

MEDIUM

Homemade Yogurt

Prep Time: 5 minutes **Cook Time:** 10 minutes **Fermentation Time:** 8 to 20 hours
Makes: 3 cups

Sure, you could buy yogurt, but making your own allows you to use top-quality ingredients and control the thickness and tartness of the final product. To begin the fermentation process, you can do one of two things: purchase a starter online or use another yogurt as your starter. Look for a plain yogurt with "active live cultures" on the label.

3 cups whole milk

2 to 3 tablespoons plain yogurt with live active cultures

1. In a saucepan over medium to medium-high heat, heat the milk to 120°F, stirring gently. Use a thermometer to check the temperature.
2. In a small bowl, slowly stir together the yogurt and ½ to 1 cup of the warmed milk, mixing well. Return the milk-yogurt mixture to the saucepan of milk.
3. This mixture must maintain a temperature of between 115°F and 120°F during the period of fermentation. To accomplish this, you have a few options: Place the mixture in an oven-safe container and into an oven with a strong pilot; place the mixture in an insulated cooler with hot water packs around the container; put the mixture into a multicooker with a yogurt setting, or place the mixture in a dehydrator set to 120°F.
4. Keep the yogurt mixture in this environment overnight, or for 8 to 12 hours. Make sure the temperature doesn't drop (it will take the yogurt longer to make) or become hotter (you might destroy the microorganisms creating the yogurt).
5. After 8 hours, check the yogurt to see if it has firmed up. If it is firm, move it to the refrigerator. If it has not firmed, let it ferment 4 to 8 hours more, checking and tasting occasionally. The longer the fermentation time, the stronger, or more "sour," the yogurt will become. When the yogurt reaches a consistency and flavor you like, move it to the refrigerator. Don't forget to save some of your yogurt for your next batch. If you like Greek yogurt, strain the yogurt in the refrigerator, overnight, in a cheesecloth-lined sieve or colander placed over a bowl.

Try This Instead: *Add maple syrup, cacao powder, honey, or matcha to your yogurt for a twist (start with 1 teaspoon and increase to taste). Or, if you've made Simple Strawberry Jam or Apple-Cinnamon Granola , top your homemade yogurt with some.*

EASY

First-Time Vinegar

Prep Time: 10 minutes **Fermentation Time:** 3 months **Makes:** 3 cups

A great way to use up old wine, you'll get subtle changes in your vinegar depending on the grape variety used. This is one of the easiest projects you can undertake (two ingredients!), but it does take some time and monitoring. It also makes a great gift, if you start it early enough. Use the vinegar for dressings or marinades. For more information on vinegar with the mother, see here .

3 cups red wine (any type)

½ cup apple cider vinegar with the "mother"

1. In a clean fermenting vessel, combine the wine and vinegar. Cover the vessel's opening with a clean cloth towel or cheesecloth and secure it with a rubber band or string. If using an airlock, secure the airlock to your jar lid, fill the lock with water, and secure it to the top of the jar and give the vessel a light shake. Place the vessel on the counter, in a cool dry place.
2. After 1 month, check the vinegar, removing any scum that forms on top (see here , Fermenting, Step-by-Step, step 6). It should taste more like vinegar, and the "mother" should be present.
3. Keep adding leftover wine to the vessel. If you add more than one-third the amount of wine compared to vinegar, allow another month for the vinegar to ferment. After 3 months, the vinegar will be ready.

EASY

Blackberry Shrub

Prep Time: 15 minutes **Fermentation Time:** 1 week **Makes:** 2 cups

A shrub is fruit preserved in vinegar and sugar that is then turned into a syrup. In Colonial times, shrubs were used to make sodas. Today, some of the trendiest bars across the country use shrubs to create signature drinks. Use this tangy, sweet, and fruity syrup to brighten soda water, sweeten iced tea, or make your own personal cocktail.

3 cups fresh blackberries, washed and dried
1½ cups sugar
2 cups apple cider vinegar

1. In a large bowl, combine the clean blackberries and sugar and smash them together with your clean hands or a wooden spoon. Make sure the berries are completely smashed, so you get adequate juice from the berries. Pour the mixture into a large glass jar or container and add the vinegar. Place a lid on the jar and shake it well.
2. Refrigerate the shrub for 1 week, shaking the jar when you remember. Taste the shrub each week to assess the flavor development.
3. After 1 week, strain the mixture through a fine-mesh sieve to remove the seeds. You can use the shrub at this point, or you can reduce it on the stovetop to make the flavors more concentrated.

Try This Instead: *Make this shrub using all kinds of fruits, other types of berries, pineapple, or stone fruits. Or, make a fruit-herb combination, like pear and ginger, strawberry and basil, blueberry and juniper, or peach and cinnamon.*

MEDIUM

Fruity Kombucha

Prep Time: 1 hour **Fermentation Time:** 1 to 2 weeks **Makes:** 4 quarts

Kombucha, a probiotic-filled, effervescent, sweet-sour tea drink, likely originating in China, has become seriously popular in the United States. There are so many variations and ways to make kombucha that the possibilities are endless. Change up your tea, use a different sweetener, or even add different fruit juices for endless flavor combinations. You can use homemade or store-bought kombucha for a starter, but it must have the mother—look for a cloudy mass in it. Your SCOBY (see here) should be at least the size of the bottom of a jar. If you need kombucha starter or a SCOBY, check out Kombucha Kamp, an online community for kombucha fans—people will even ship you some Resources .

16 cups water

4 black or green tea bags

1½ cups sugar

2 cups kombucha starter

1 SCOBY

1 to 2 cups pureed fruit (such as berries, melon, or tropical fruits) or fruit juice (try apple, cranberry, grape, or pineapple) (optional)

1. In a large pot, bring the water to a boil and add the tea bags. Remove the pot from the heat. Stir in the sugar, stirring until the sugar dissolves, and let cool.
2. Once the tea is cool, remove and discard the tea bags (strain the tea through a fine-mesh sieve if using loose tea leaves).
3. Stir the kombucha starter into the tea. Pour the tea into a large glass jar or bottle and add the SCOBY. Cover the vessel's top with a clean cloth towel or cheesecloth and secure it with a rubber band or string. Place the jar on the counter, away from heat and the sun's light.
4. Let the kombucha ferment for the next 7 to 10 days. Start to taste the batch after 7 days. It should begin to taste sour. You will see a new layer of SCOBY starting to form.
5. Once the kombucha has your desired taste, remove the SCOBY. Place the SCOBY and 1 to 2 cups of the finished kombucha into a separate container to use as the starter for your next batch. Refrigerate it until ready to use.
6. Add the pureed fruit or fruit juice to the kombucha (if using) and pour it into a clean reused soda bottle with a lock or screw top. Put a lid on the bottle and leave it on the counter for 1 to 3 days as it builds up carbonation. Check it each day to see how much pressure has built up. Move the kombucha into the refrigerator to enjoy over the next 1 to 2 months.

Simple Dehydrated Kale, see chart here

CHAPTER FIVE

Dehydrating

DEHYDRATING 101

Dehydration is likely the oldest form of food preservation and was probably discovered by chance. Something was left outside on an extremely hot day, or fruit dried on a tree or vine, and some curious early ancestor noticed this, took a chance and ate it. The rest was food history.

Drying food hasn't really changed over the millennia. It still requires the removal of water or moisture from food. Bacteria, yeast, and mold need water to grow (though yeast and mold require it in lesser amounts), and so successful dehydration removes enough water so microorganisms cannot function. It does not kill them, though, so keep in mind that microorganisms will reactivate once the dried food is rehydrated, even just a little. When rehydrated, the dried food must be handled like fresh food.

There are several reasons to make dehydrated foods. It is the most economical method of food preservation. You can dry herbs in a paper bag or your oven, equipment you already have. It's also incredibly easy. Drying food takes minimal effort and equipment, maybe a bit of pretreating A Guide to Pretreatments , and some daily observation and care for the items you are drying.

The results can be used to enhance other preservation methods: Dried herbs, spices, grains, and beans are all used in several other methods. Plus, the removal of water from foods makes them lightweight and compact, which is ideal for travel; many hikers use dehydrated foods for sustenance, much like travelers from hundreds of years ago. You can grind or blend herbs, spices, and even fruits and vegetables into small particles.

Drying can happen in the simplest of ways, or using more modern appliances.

Bag drying: This is done just like it sounds—using a paper bag to dry items. This works best with certain "sturdier" herbs, such as thyme and rosemary. Poke holes or use a hole puncher to punch holes in the paper bag for airflow and place the items inside the bag with their ends coming out the top. Tie the bag shut around the ends and hang it, making sure the herbs face down, in a dry place. It's simple and takes minimal work—but you can't dry everything in a paper bag. Make sure the bag is not near a source of humidity or moisture, or you risk mold developing on the food.

Electric dehydrating: If you really want to dehydrate, I recommend investing in an electric dehydrator. It's a wonderful and convenient appliance to own. That said, I do suggest trying to dry foods using other methods first, just to be sure you enjoy this method of food preservation.

Oven drying: Ovens can work as dehydrators—it just depends on your oven. Before using this method, evaluate your oven to see if it will work for you. The oven will need to maintain a temperature between 120°F and 140°F for hours and have air circulation. If you have a convection oven, it will circulate enough air. If your oven does not have a fan, you will need to prop open the door (which uses more energy) and place a fan outside on low speed to circulate air. I have a 1950s gas oven with a strong pilot, and because the oven is smaller than modern ones, I'm able to dehydrate most items in it. As for maintaining temperature, an accurate thermometer will tell you whether your oven is the right tool to use. If your oven serves as a good dehydration tool, it is perfect for smaller projects.

Sun drying: This technique uses the power of the sun and its heat to dehydrate items—most commercially dried fruit is prepared this way. For home use, as trays for the food, use metal screens, baking sheets, or other food-grade material screens to dry your items on, ensuring they are properly covered (with cheesecloth, for example) to limit insect infestation or dust. You can build a drying rack out of cinder blocks or bricks to elevate the items off the ground. If using the sun to dry food, temperatures need to remain above 80°F or higher for at least 5 days, and humidity should be 60 percent or less. Rotate items and put trays indoors, if the evenings have higher humidity conditions. In this way, you can dry large quantities at one time—but you need ideal weather conditions and considerable effort and maintenance. Sun drying will work better for rural or suburban dwellers. City dwellers may find that their food, left outside, even covered, disappears quickly!

Essential tools and equipment

The following tools should enable you to dehydrate all the different types of foods you would like to dry.

Electric dehydrator: This convenient tool is a great addition to your kitchen if you want to commit to dehydrating a variety of foods. This appliance has multiple trays for maximum use, a timer, and you can alter its temperature to specific heats. There are even trays specifically for fruit leathers. Having trays organizes projects and you can easily change the temperature and set the time. Prices range from between $80 and $300 (for a commercial dehydrator). They are a bit bulky but worth the space if you think you will dehydrate food regularly.

Presto and Nesco are popular brands. There are top-load and side-load dehydrators. Top-load dehydrators have stacking trays that stack one on top of the other. They are great because you can stack one tray for small projects or twelve for a big drying day; they expand and contract to your needs. Still, their tall towers mean air is not distributed as well, so you must rotate trays. These top loaders are also less insulated, so they are less efficient. Front loaders have a fixed outer shelf in which trays are loaded. These are fixed in size so you cannot make them smaller or larger, but they are more insulated, meaning you have better airflow and get more uniform dehydration without having to rotate trays.

Paper bags: Small lunch-style paper bags are ideal for drying herbs or small chile peppers.

Storage containers: Storage containers need to be airtight but can be made of any material, as long as they are solid. Mason jars used for canning are perfect for storage if you already have them on hand. You can also reuse glass jars from the grocery store, as long as they and their lids are cleaned thoroughly. Heavy-duty resealable plastic bags are also convenient because you can easily squeeze the air from the bags.

A GUIDE TO PRETREATMENTS

Pretreating foods before preserving them helps keep the foods in the best possible condition to stand the test of time . . . which is the point! Doing so helps maintain color, flavor, and structure of food by stopping enzyme action, thus jump-starting the

preservation process and allowing certain preservation methods to work better. Following are the essential pretreatment methods to know.

Acidulate: One method of preventing fruits, such as apples, apricots, bananas, and peaches, from darkening without adding sugar is to cover the food in a mixture of water and an acidic element like lemon juice or vinegar. This is called acidulated water. Refer to How to Keep Cut Fruit from Darkening in Color for more information.

Ascorbic acid: This pretreatment is a less conventional way to prevent discoloration, but if you have access to vitamin C tablets, it is quite effective. Combine 1 teaspoon crushed vitamin C tablets per 2 cups water used and submerge the fruits in it.

Condition: This treatment happens *after* preserving, not before, but it's an essential process to reduce the risk of mold on dehydrated foods, especially jerky. Essentially, because of the nature of the food, the way it's cut, and how it's placed in the dehydrator, sometimes different pieces of food dry inconsistently, and conditioning ensures everything is evenly dried. You can do this by placing items in a 175°F oven for 10 to 15 minutes, or by storing items loosely covered in a jar for 1 week, shaking the jar periodically to make sure there is proper airflow.

Steam blanch: This process is like water blanching (see following), but steam is the cooking medium, not boiling water. The process is ideal for small pieces of food, thin slices, or delicate items like spinach. I also spell out the procedure in The Essentials of Blanching (see below).

Syrup: I mention syrups in chapter 2 ; this is a simple sugar syrup made from a 1:1 ratio of sugar or honey and water, simmered to dissolve the sugar, then cooled, which stops light-colored fruits from darkening. Dip cut fruits into it and dehydrate or freeze. This method works best with fruits like apples, apricots, bananas, pears, and peaches.

Water blanch: Otherwise known simply as blanching, this is such an essential technique I have a whole section on it, The Essentials of Blanching. This process involves plunging food in boiling water for just a few moments (I've spelled out specific times in the Blanching Times chart to partially cook the food, then transferring it to ice water to cool. Blanching is also useful for peeling foods like tomatoes and peaches. Fruits with a natural wax coating, like blueberries, cranberries, figs, grapes, and plums, should be dipped in boiling water for a few minutes to break down the coating so moisture can escape.

THE ESSENTIALS OF BLANCHING

Blanching foods, particularly produce, helps keep its shape, texture, and color, which is why you'll see it in numerous preservation methods and recipes, including canning, dehydrating, and freezing. It's also the first step when you're peeling soft-skin fruits like tomatoes and peaches. I reference two types of blanching in this chapter: steam blanching and water (or regular) blanching. Steam blanching is great for more delicate items, while regular blanching is easier for large quantities and works well for sturdier foods.

Here's how to blanch the classic way:

1. If you're blanching tomatoes or peaches, score them by cutting a small, shallow X on the bottom of each piece.

2. Bring a large pot of water to a boil. Or, for steam blanching, add 1 to 2 inches of water to a pot and insert a steamer basket inside—the water shouldn't touch the bottom of the basket. Cover and bring to a boil.
3. Prepare a large bowl with a 50-50 mix of ice and cold water.
4. Place the produce in the boiling water, or in the steam basket (don't forget to put the lid back on), for the time indicated on the chart (see here), or until the produce is brightly colored and crisp-tender, being sure not to overcrowd the food. You will start to see the skins slowly come off the tomatoes or peaches, especially in the scored areas.
5. Using a slotted spoon or tongs, quickly transfer the produce into the ice bath.

6. Once cool enough to handle, remove the produce from the ice bath. If you're peeling tomatoes or peaches, pull off the skins with your hands and a paring knife.

Blanching times

The following chart shows blanching times for most fruits and vegetables. Times are for blanching in boiling water; for steam blanching, add 1 to 2 minutes to the cook time.

As you work, follow the procedure in The Essentials of Blanching . The post-blanch ice water bath is important—it keeps the produce from overcooking.

Fruits listed in this chart are blanched in a sugar syrup that turns them into candy. To make the syrup, dissolve sugar or honey in water using a 1:1 ratio and heat to 212°F. Simmer the fruits for the times listed in this chart. Fruits not listed in the chart do not require syrup blanching. This is an option for fruits, not a requirement; you can also use lemon juice or an ascorbic acid dip to treat fruits.

FOOD	MINUTES
Apples	10
Apricots	10
Artichoke	7 to 10
Asparagus	2 to 3

FOOD	MINUTES
Bananas	10
Beans, green	3
Beans, shelled	2 to 3
Beets: trim tops but leave tops and bottoms attached, and keep beets whole to prevent bleeding	B oil small beets for 15 minutes, medium beets for 25 minutes
Broccoli, 1-inch pieces	3
Brussels sprouts, medium	4
Cabbage	1 to 2
Carrots, diced	2 to 5
Cauliflower, 1-inch pieces	3
Celery slices	1
Cherries	10
Citrus peel	15 to 20
Corn, small to large ears	7 to 10
Eggplant	3 to 4
Figs	10
Greens, spinach, collards: steam blanch	2 to 3
Mushrooms	3 to 5
Nectarines/peaches	10
Okra	3 to 4
Pears	10
Peas	1
Peppers, hot	None
Peppers, sweet	2 to 3

FOOD	MINUTES
Plums	10
Potato/sweet potato, cubed	3 to 5
Squash, summer	2
Squash, winter, cubed	3
Tomato	1
Turnips/parsnips, cubed	2

HOW TO TELL WHEN YOUR FOOD IS FULLY DEHYDRATED

It can be tricky to know when something is sufficiently dried, and sometimes the dehydrating time ranges are wide. Here's how you'll know food is blanched properly:

- **Fruit:** Should feel leathery. Halve the fruit and squeeze it. If there is any evidence of moisture, as in drops of liquid, continue to dehydrate until there is none.
- **Herbs:** These will be dry and brittle and will break or crumble easily when pressed. Their color will deepen but should not turn brown, which is a sign of burning/cooking that will alter the flavor of the herb.
- **Meats:** Jerky will be leathery and chewy and will have no evidence of moisture when ripped apart. Brittle jerky is often too dry, although some styles of jerky are made to be brittle.
- **Vegetables:** Should be hard and brittle with no evidence of moisture when cut and no condensation when in a sealed container. Vegetables should be dried to 5 percent moisture, which means, for example, 5 pounds of vegetables should net you about ¼ pound (4 ounces) of dried food.

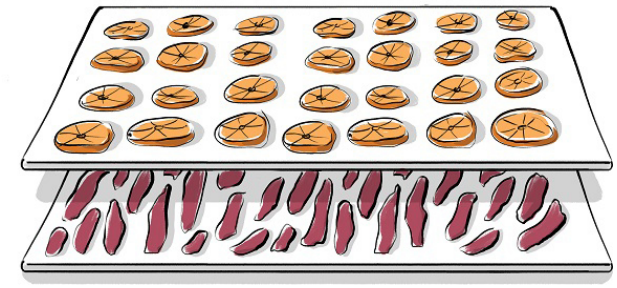
DEHYDRATING, STEP-BY-STEP

The steps used for dehydrating will vary depending upon the method you use. Each recipe following will specify and detail a dehydration method, but here are some general dehydration instructions to keep in mind.

1. **Choose the best ingredients.**

Choose the best and freshest ingredients you can find. Do not use items with bruises or any signs of deterioration because they won't go away when you dehydrate the food. Use peak-season produce and plan to leave little time between garden, or other sourcing, to dehydrator.

2. **Prep your equipment.**
   Whichever dehydration method you use, set up and clean your drying apparatus before you begin. Wash trays and get proper covers ready, if you are drying outdoors. If you are drying in an electric dehydrator, set the time and temperature.
3. **Clean and prepare your food.**
   Wash food well to remove dirt, insects, and bacteria. Dry items with a paper towel. Whether you peel, core, cut, slice, or chop your items will depend on the project or recipe. Make sure all cuts are consistent, even, and equal in size. If you are making a leather, puree the fruit or vegetable.
4. **Pretreat your food.**
   Do this to stop any enzyme action or color changes. Most vegetables must be blanched and some fruits must be treated to retain color. Pretreatments include blanching, steaming, or coating with an acid or syrup A Guide to Pretreatments . There is also a blanching chart .
5. **Arrange and dry your food.**
   Get your food on trays or set them up in the drying apparatus. When dealing with sticky foods (especially leathers), lightly coat the tray with oil. Make sure items are in a single layer and that there is good airflow between all pieces, which will help ensure that items dry properly. If you are drying different items at the same time, keep them on separate trays or sections of the dehydrator because they will, most likely, dry differently and with different times.



6. **Check and cool your food.**
   As you approach the end of drying time, check your items to make sure they are close to full dehydration. Pull a single item out and let it cool (because heat can make things bendable and seem moist). Check for moisture content by bending the food and pressing into it. It should be brittle, not tacky, to the touch. (For more information on how to check for doneness, see How to Tell When Your Food is Fully Dehydrated . Once the time has ended, let the food cool completely before checking the items.
7. **Keep watch over your food.**
   After using an electric dehydrator, place the food in a jar or plastic container with a tight-fitting lid, filling it three-fourths full. Keep the food in the jar for a few days,

shaking it occasionally. If there is any sign of moisture on the food or in the jar, the food has not dehydrated properly; if there is no sign of spoilage or rot (dark spots, mold, smells, other obvious signs), dehydrate the food further, or even better, put it in a 160°F to 180°F oven for 20 to 30 minutes.

If you dried food outside, or in the open air, you'll want to ensure your food is insect-free. Place the food in a heavy-duty resealable plastic bag and into the freezer for a few days, or place it on a baking sheet and into a 175°F oven for 15 minutes. If you use the oven, you will further dry your items, but this method will also destroy any insect infestation or larvae.

REHYDRATING FOODS

Foods can be hydrated in hot water, cold water, or cooked in liquid. The general rule is that the longer it took to dehydrate, the longer it takes to rehydrate.

Cold soaking entails rehydrating fruits in liquid. The general rule is 2 cups food to 1 cup liquid. Rehydrate fruits with water, fruit juice, yogurt, or alcohol and let soak for a few hours in the refrigerator. Vegetables can soak in water, bouillon, vegetable juice, or stock for at least 2 to 8 hours. If the soaking time is longer than 2 hours, move the food to the refrigerator. Reserve the soaking liquid for gravies, dressings, sauces, or to add flavor to other dishes.

To hot soak , add boiling water to dehydrated food using three-fourths the amount of water to food. Let it sit for 20 minutes, gently folding or mixing to incorporate the hot water. Drain and use the food. You can also steam the items for 10 to 20 minutes.

To cook in liquid , use 2 parts water to 3 parts food and cook on the stovetop. If you are cooking fruit, taste the liquid for sweetness before adding any sweetener. Either drain or use the entire food plus liquid in a further application.

8. Store your food.

Fully pack your foods into glass or plastic airtight containers, removing as much air as possible. Heavy-duty resealable plastic bags are fine if they will be stored in areas where insects or rodents cannot get to them. Store all items in a dark place, because sunlight can bleach the food and make it look unappealing. When stored properly, your foods should last at least 4 months and up to 1 year.

9. Rehydrate your food.

Some dehydrated foods are meant to be enjoyed as is, while others are meant to be rehydrated before consuming. Check out Rehydrating Foods . Recipes will specify this step if it is necessary.

DEHYDRATE ANYTHING

Anything can be dehydrated—although you *might* want to ask if you should—dehydrated cucumbers, anyone? Following are times and temperatures for some of the most common dehydrated foods.

FRUITS

FRUITS					
FRUIT			TEMPERATURE	G TIME	S INDICATOR
~~TYPE OF FRUIT~~	~~PREP NOTES~~	~~PRETREATMENT~~	~~DRYING TEMPERATURE~~	~~DRYING TIME~~	~~DONENESS INDICATOR~~
Apples	Peel, core, and cut into rings or slices, ⅛ to ¼ inch thick.	Steam blanch and acidulate	125°F to 135°F	6 to 16 hours	Slices are pliable or crisp, not sticky
Apricots	Do not peel. Halve, pit, and quarter, if desired.	Steam blanch and acidulate	125°F to 135°F	16 to 20 hours	Slices are pliable, not sticky
Bananas	Peel and freeze for 10 minutes; cut into ⅛- to ¼-inch-thick slices.	Acidulate	125°F to 135°F	6 to 12 hours	Slices are pliable or crisp, not sticky
Blueberries	Wash and remove stems or leaves.	Blanch by dipping into boiling water for 30 seconds to craze the skins	125°F to 135°F	10 to 20 hours	Berries are leathery, not sticky
Cherries	Wash, stem, and pit whole cherries.	Pierce whole cherries with a knife, or water blanch for 30 seconds. For yellow cherries, steam blanch and acidulate.	125°F to 135°F	12 to 16 hours	Cherries are leathery, not sticky
Citrus	Wash and cut into ⅛- to ¼-inch-thick pieces. Can also dry just the zest by removing the peel without the pith.	None	125°F to 135°F	3 to 6 hours	Slices are pliable or crisp
Cranberries	Wash and pick out any leaves.	Blanch	125°F to 135°F	8 to 14 hours	Cranberries are leathery, not sticky
Figs	Wash and handle carefully. Leave small figs whole but cut a slit on opposite sides to promote drying. For fruits larger than 1 inch, trim the stem and cut the figs into pieces.	Blanch	125°F to 135°F	8 to 24 hours	Figs are firm and chewy, not sticky
Grapes	Wash and stem. For seeded grapes, halve and remove seeds.	Blanch	125°F to 135°F	6 to 16 hours	Grapes are leathery, not sticky
Mango	Wash and cut lengthwise around the stone. Without cutting through the skin, cut ¼-inch slices and remove fruit from the peel with a spoon.	None	125°F to 135°F	6 to 12 hours	Slices are pliable, not sticky
Peaches and nectarines	Wash, pretreat, pit, and cut into ⅛- to ¼-inch pieces.	Blanch peaches to peel the fuzzy skins. Steam blanch both peaches and nectarines.	125°F to 135°F	6 to 12 hours	Slices are pliable, not sticky
Pears	Wash and peel (if desired), halve, core, and cut into ⅛- to ¼-inch thick slices.	Steam blanch	125°F to 135°F	6 to 16 hours	Thin slices are crisp, or thicker slices are pliable, not sticky

FRUITS

TYPE OF FRUIT	PREP NOTES	PRETREATMENT	DRYING TEMPERATURE	DRYING TIME	DONENESS INDICATOR
Pineapple	Scrub and trim off the rind and any “eyes.” Core and cut into ¼-inch pieces, or make rings using a corer.	None	125°F to 135°F	6 to 16 hours	Thin slices are crisp, or thicker slices are pliable, not sticky
Plums	Wash, pretreat, pit, and cut into chunks.	Blanch	125°F to 135°F	12 to 16 hours	Chunks are leathery, not sticky
Raspberries and blackberries	Wash in a basin with cold water and drain.	None	125°F to 135°F	6 to 12 hours	Berries are leathery, not sticky
Watermelon	Wash, remove the flesh from the rind, and cut into cubes or ⅛- to ¼-inch slices.	None	125°F to 135°F	4 to 20 hours	Thin slices are crisp, or thicker slices are pliable, not sticky

VEGETABLES

TYPE OF VEGETABLE	PREP NOTES	PRETREATMENT	DRYING TEMPERATURE	DRYING TIME	DONENESS INDICATOR
Asparagus	Wash, peel or trim the tough ends; leave whole or cut into bite-size pieces.	Steam blanch	125°F to 135°F	6 to 18 hours	Asparagus will rattle when shaken
Beets	Scrub, cook until tender, peel (if desired), and cut into ⅛-inch chips or ¼-inch dice.	None	125°F to 135°F	2 to 10 hours	Pieces are leathery and thin chips are crisp
Broccoli and cauliflower	Soak for 20 minutes to 1 hour, submerged in cold water mixed with ¼ cup salt and 2 tablespoons distilled white vinegar. Rinse and cut into bite-size pieces.	Steam blanch	125°F to 135°F	4 to 10 hours	Pieces will rattle when shaken
Broccoli rabe	Cut off and discard 1 inch from stems, rinse under running water, separate the leaves from the stems; cut stems into 1-inch pieces. Dry leaves and stems separately.	Steam blanch	125°F to 135°F	4 to 8 hours for leaves; 6 to 18 hours for stems	Pieces will rattle when shaken
Brussels sprouts	Wash, remove bruised outer leaves, and cut into ⅛- to ¼-inch slices.	Steam blanch or roast, cut-side down, at 425°F for 20 to 30 minutes, until browned.	125°F to 135°F	6 to 8 hours	Pieces will rattle when shaken

VEGETABLES					
TYPE OF VEGETABLE	**PREP NOTES**	**PRETREATMENT**	**DRYING TEMPERATURE**	**DRYING TIME**	**DONENESS INDICATOR**
Cabbage	Wash, peel away outermost layers, core, and cut into ¼-inch shreds.	Steam blanch	125°F to 135°F	8 to 10 hours	Shreds are crisp
Carrots	Wash, trim, and peel (unless organic). Slice, dice, or cut into ⅛-inch strips. You can also shred them.	Steam blanch: shredded carrots do not need to be blanched.	125°F to 135°F	6 to 12 hours	Carrots should be brittle or leathery
Celery	Separate stalks; wash, trim the tops, and cut crosswise into ¼- to ½-inch slices.	Steam blanch	125°F to 135°F	4 to 10 hours	Celery pieces should be brittle
Corn	Remove husks and silk, pretreat, and cut wide strips of kernels off the cob.	Boil husked corn in water for 7 to 9 minutes.	125°F to 135°F	6 to 10 hours	Pieces will rattle when shaken
Eggplant	Wash and peel, if desired. Cut into ½-inch cubes or ¼-inch slices.	Steam blanch or grill eggplant slices.	125°F to 135°F	10 to 20 hours	Pieces will be leathery or crisp
Fennel	Cut off leaves, separate the stalks and bulb; wash and trim bulb root end. Cut bulb into ⅛- to ¼-inch strips; cut stalks into ¼- to ½-inch slices.	Steam blanch	125°F to 135°F	4 to 12 hours	Pieces will rattle when shaken
Garlic	Separate the cloves, trim the ends, peel, and halve, removing any green shoots. Chop, if desired.	None	125°F to 135°F	4 to 12 hours	Pieces will rattle when shaken
Ginger	Peel mature ginger's papery skin (not young ginger) using a spoon; slice the roots into ⅛-inch-thick slices.	If using for desserts, pretreat with a sugar syrup or salt solution.	125°F to 135°F	1 to 4 hours	Pieces will rattle when shaken
Green beans	Wash, trim, and remove strings; leave whole or cut into bite-size pieces.	Steam blanch	125°F to 135°F	2 to 6 hours	Beans will rattle when shaken
Hearty greens (such as kale, mustard greens, chard)	Trim tough stems; cut leaves from the stem and swish in a basin of cold water until no sand remains at the bottom and leaves are clean. Cut into bite-size pieces.	Steam wet greens over medium-high heat in a large covered skillet for 2 to 3 minutes until they start wilting. Drain and remove any excess water.	115°F to 125°F	4 to 8 hours	Pieces should be brittle and crumbly
Herbs	Wash in cold water and shake or pat dry. Remove insects by lightly sprinkling the herbs with table salt, then rinsing and draining again. For storage, separate leaves from stems.	None	95°F to 105°F	1 to 4 hours	Herbs will be brittle and crumbly

VEGETABLES					
TYPE OF VEGETABLE	**PREP NOTES**	**PRETREATMENT**	**DRYING TEMPERATURE**	**DRYING TIME**	**DONENESS INDICATOR**
Leeks	Trim roots and tops; halve lengthwise, then cut the white and light green parts into ¼-inch slices. Swish in a basin of cold water until there is no sand remaining, then drain and pat dry.	None	125°F to 135°F	6 to 10 hours	Pieces will rattle when shaken
Mushrooms	Scrub, remove tough parts, cut into ¼-inch slices.	Dip in acidulated water	140°F to 145°F	8 to 10 hours	Mushrooms should feel leathery or brittle
Okra	Wash and either leave whole, halve, or trim the top and cut into ¼- to ½-inch slices.	None	125°F to 135°F	4 to 6 hours for thin slices; 18 to 24 hours for whole pods	Okra will rattle when shaken
Onions and shallots	Trim off top and root end; halve, peel the layers that are not firm, and cut into ⅛- to ¼-inch slices.	Steam blanch	135°F to 145°F	6 to 12 hours	Onion pieces will rattle when shaken
Parsnips	Cut off the green tops, wash and peel, if desired. Roast at 425°F for 15 to 20 minutes until browned, if desired. Cut into sticks, slices, or shreds.	Steam blanch	125°F to 135°F	6 to 12 hours	Pieces will be leathery or rattle when shaken
Peppers, hot and sweet	Wear gloves. Pierce whole chiles, or stem and cut into ¼-inch slices, removing the seeds, if desired.	None	125 °F to 135°F	4 to 12 hours	Peppers will rattle when shaken
Potatoes	Scrub, peel (if desired), and hold in cold water.	Cook potatoes al dente by boiling in water for 7 to 9 minutes, refrigerating overnight, then slicing; steam blanch, or roast at 425°F for 20 to 30 minutes.	125°F to 135°F	6 to 12 hours	Potato pieces will rattle when shaken
Scallions	Wash, trim the roots, cut off the white part, separate the light green parts from the darker green parts, and cut into uniform 1- to 2-inch pieces.	None	95°F to 105°F	6 to 10 hours	Pieces will rattle when shaken
Spinach and other tender greens	Separate the leaves from the stems and swish in a basin of cold water until no sand remains; drain and cut leaves into 1-inch pieces.	Steam wet greens in a large covered skillet over medium-high heat for 1 to 2 minutes until they begin to wilt.	125°F to 135°F	4 to 8 hours	Pieces will be brittle and crumbly
Squash, summer	Wash and cut into ⅛- to ¼-inch-thick slices.	None	125°F to 135°F	6 to 12 hours	Squash pieces will be leathery or crisp

VEGETABLES					
TYPE OF VEGETABLE	**PREP NOTES**	**PRETREATMENT**	**DRYING TEMPERATURE**	**DRYING TIME**	**DONENESS INDICATOR**
Squash, winter	Wash, pretreat, cut the squash into ½-inch-thick slices, then peel.	Bake the whole squash before peeling or cutting. Pierce the rind and bake in a shallow baking pan with 1 inch of water at 350°F for 30 minutes. Squash will be tender but not fully cooked.	125°F to 135°F	10 to 14 hours	Squash pieces will rattle when shaken
Sweet potatoes	Scrub under running water; peel, if desired, and cut into wedges or cubes.	Steam blanch	125°F to 135°F	6 to 12 hours	Sweet potato pieces will rattle when shaken
Tomatillos	Peel off husks, soak in warm water until sticky reside is loosened, then rinse it off. Halve, quarter, or slice.	None	125°F to 135°F	4 to 10 hours	Pieces will be pliable or brittle; thin slices will be crisp
Tomatoes	Wash, trim, and blanch to peel. Slice or cut into ½- to ¾-inch-wide sections. Halve cherry, grape, or pear tomatoes.	Roast or blanch to peel	125°F to 135°F	4 to 20 hours	Pieces will be pliable or crisp

Troubleshooting

ISSUE/RESPONSE	ROOT CAUSE	SOLUTION	KEEP OR TOSS
Food has been in the dehydrator for longer than the recipe specifies but it still won't dry	• Drying times are guidelines and all dehydrators vary • High humidity • Food retained extra moisture	• Be patient. • Cut foods thinner. • Press food between towels to remove excess moisture. • Add a fan to enhance air circulation. • Rotate trays or flip items over.	Keep, but cook longer.
Outside is leathery but inside is still moist	• Case hardened	• Continue drying but cut the pieces smaller first. • Cut the pieces small and spread out on multiple trays. • Flip food on the tray or rotate trays. • To stop this from happening in the first place, user lower temperatures and longer drying times.	Keep, but cook longer.
Fruits turning moldy during storage	• Certain fruits with waxy skins are difficult to dry fully • Food was not completely dried	• Skins must be pierced (use a knife) or water blanched before drying. • Cut the foods into smaller portions before drying.	Toss
Browning after drying	• Some fruits and veggies, especially those with lighter skins, are more susceptible to oxidizing while drying	• Blanch or otherwise pretreat before drying. • Soak food in pretreatment a few minutes longer.	Keep
Color loss	• Not blanched before drying or too much light exposure	• Blanch most vegetables to shield from color loss and store in a location without exposure to	Keep

		light or heat.	
Bad taste	• Oil or fat in the food has gone rancid	• Use lean meats, cook with little oil, and get rid of excess fats in foods to be dehydrated.	Toss
Containers of dried food have mold in them	• Moisture made its way into the container	• Check monthly for moisture in the containers and redry if you find moisture but no mold yet.	Toss
Bugs are in the containers with dried food	• Dried food was not contained or stored correctly	• Clean the area thoroughly, look in all the containers for insects, and package in airtight containers, being cognizant of moisture and changes in humidity.	Toss

EASY

Winter Green Tea

Prep Time: 10 minutes **Dehydration Time:** 6 to 12 hours **Makes:** 2½ cups

Dehydrated foods can also be used to make drinks. This is a simple way to brighten up green tea but you can also dehydrate it and blend with white or black tea, or brew alone.

1 orange, thinly sliced
1-inch piece fresh ginger, peeled and thinly sliced
2 cups loose-leaf green tea

1. Arrange the food on trays according to the instructions for Dehydrating, Step-by-Step .
2. Place the orange and ginger in the dehydrator at 130°F to 140°F for 6 to 12 hours. The ginger will be ready after 6 hours, so remove it first. See Dehydrating, Step-By-Step , for guidance.
3. When the orange is ready, let cool and chop it into pieces. It should be crispy but not burnt.
4. Mix the orange pieces with the ginger and green tea.
5. Store in a securely covered glass container in a cool dry place for up to 1 year.

Try This Instead: *Replace the orange and ginger with other foods—there are many options. Try lemon slices, lemon peel, chamomile flowers, peppermint, strawberries, cranberries, lavender, or apple.*

MEDIUM

Nutty Kale Chips

Prep Time: 30 minutes, plus at least 1 hour to soak
Dehydration Time: 8 to 10 hours **Makes:** 1½ pounds

The nuts in this recipe lend substance to these kale chips as well as a boost of protein and creamy flavor, making this a snack even a non-kale-lover, like my husband, can't resist. Keep these chips on hand as a nutritious alternative to potato chips for your next snack attack.

1 cup raw unsalted cashews or macadamia nuts
1½ cups boiling water
2 pounds (2 bunches) fresh kale (any type will work)
¼ cup bottled lime juice, lemon juice, orange juice, or water
¼ cup olive oil
1 tablespoon mild chile powder
1½ teaspoons Diamond Crystal kosher salt
1 teaspoon freshly ground black pepper

1. Place the nuts in a medium heatproof bowl. Pour the boiling water over the nuts and let stand for at least 1 hour, or overnight.
2. Wash the kale, shake dry, and chop it into 1- to 2-inch pieces. Set aside in a large bowl.
3. Drain the nuts and place them in a blender. Add the lime juice, oil, chile powder, salt, and pepper. Blend on high speed until smooth. Pour the nut spread over the chopped kale and massage the kale for a good 10 minutes, making sure the spread goes everywhere. The kale should collapse and soften. Arrange the kale on trays according to the instructions for Dehydrating, Step-by-Step .
4. Place the kale in the dehydrator and dry for 8 to 10 hours at 120°F. It should be crispy when finished; the chip's nut coating will no longer be wet; it will be dry and brittle, and the kale underneath will be brittle at the edges. See Dehydrating, Step-By-Step , for guidance.

MEDIUM

Apple-Cinnamon Granola

Prep Time: 30 minutes **Blanching Time:** 15 minutes
Baking Time: 20 minutes **Dehydration Time:** 8 to 10 hours **Makes:** 6 cups

The apple-cinnamon combo is a crowd-pleaser, whether you're eating it for breakfast with milk, grabbing it as a quick snack and energy boost, or tossing it with some yogurt to create a parfait.

⅓ cup bottled lemon juice
4 cups water
2 or 3 apples or 4 ounces dried apple pieces
4 cups rolled oats
½ cup chopped walnuts
1 cup oat bran
1 teaspoon ground cinnamon
½ cup maple syrup
¼ cup grapeseed oil or canola oil

1. If using the dried apple pieces, skip this step. In a medium bowl, combine the lemon juice and water. Peel, core, and cut the apples into ⅛-inch rings, placing them in the lemon water as you work.
2. Fill a large bowl with a 50-50 mix of water and ice.
3. Bring a large pot full of water to a boil. Using a slotted spoon, transfer the apples to the boiling water (reserve the lemon water) and blanch Blanching Times . Transfer the apples to the ice water, then dip back into the lemon water.
4. Drain, pat the apples dry, and place them on tray(s) without overlapping.
5. Dehydrate the apples for 8 to 10 hours at 120°F degrees. Dehydrating, Step-By-Step , for guidance. After they have dried and cooled, chop into small pieces.
6. Preheat the oven to 275°F. Line a sheet pan with parchment paper and set aside.
7. In a large bowl, stir together the oats, walnuts, oat bran, and cinnamon. Pour the maple syrup and oil on top and thoroughly mix, ensuring everything is coated. Spread the granola on the prepared sheet pan.
8. Bake for 15 to 20 minutes, or until the oats turn a light golden-brown color.
9. Cool the granola completely, then sprinkle it with the dried apple pieces.
10. Place the granola in a heavy-duty resealable plastic bag or other sealable container with a label. Store in a cool dry place, or refrigerate, for up to 4 months.

Try This Instead: *Substitute any dried fruit that pairs with cinnamon, like blueberries, cranberries, grapes, peaches, or pears.*

EASY

Lavender-Lemon Sugar

Prep Time: 10 minutes **Dehydration Time:** 8 to 10 hours, 11 to 14 hours if drying the lavender in an electric dehydrator
Makes: 1½ cups

I've used this sugar for cookies, to sweeten drinks, and even as a rim for a margarita. In a pinch, you can combine it with coconut oil to create a fresh-smelling DIY exfoliant for the shower. If using fresh lavender and drying it yourself, be sure it's grown for human consumption; many times, flower growers use pesticides you do not want to eat. Keep this in mind if you're growing your own, too. Otherwise, you can find dried food-grade lavender in the spice aisle, at the farmers' market, or online.

2 lemons
1 small bunch lavender or ¼ cup dried lavender flowers
2 cups sugar

1. Wash the lemons well, removing all the dirt. With a knife, peel the lemons; it's fine to have some white pith on the peel. Lay the peels on a baking sheet and dehydrate in the oven with a strong pilot overnight, or in the dehydrator at 140°F for 8 to 10 hours. The peels will be crispy when ready. Dehydrating, Step-By-Step , for guidance.
2. Once dry, put the peels into a blender or clean spice grinder and process them into a powder. If the peels are too soft and not turning into a powder, return them to the oven, or dehydrator, for 2 hours, or until they are dry enough to grind into a powder.
3. Keep the lavender on the stem and either air-dry it or use a dehydrator.
   - To air-dry, gather the stems together and tie with string. Hang upside-down in a paper bag with a few holes poked in it for proper airflow. Let dry for several days in a place away from moisture, checking often for dryness. Once the flowers are brittle to the touch, remove them from the stems.
   - To dry in an electric dehydrator, gently place the stems in the dehydrator on the lowest setting. Dry for 3 to 4 hours, checking every hour. Once the flowers are brittle, remove them from the stems.
   - To dry in the oven, line a baking sheet with parchment paper and place the stems on it. Dry in a 180°F oven for 10 to 15 minutes, checking often. Once the flowers are brittle to the touch, remove them from the stems.
4. In a medium bowl, stir together the sugar and dried lavender flowers. Stir in the lemon powder until it is incorporated throughout. Taste. If you feel it tastes too strongly of lemon or lavender, add ½ cup more sugar and taste again.
5. Store in an airtight jar for up to 1 year.

Ingredient Tip: *If you're looking for a way to use this sugar, use it to top my favorite sugar cookies: Cream 1½ cups butter, at room temperature, with 1½ cups sugar using an electric mixer. Beat in 2 large eggs and 1 teaspoon vanilla extract. With the mixer on low speed, add 4½ cups all-purpose flour and 1 teaspoon Diamond Crystal kosher salt, mixing just until combined. Wrap the dough in plastic and chill for 2 hours, or overnight. On a lightly floured surface, roll out the dough to ½ inch thick. Cut out*

shapes using cookie cutters, sprinkle with Lemon-Lavender Sugar, and bake at 325°F for 10 to 12 minutes until lightly golden around the edges.

MEDIUM

Garden Veggie Dip Mix

Prep Time: 30 minutes **Dehydration Time:** 4 to 6 hours **Makes:** 1 cup

Add this mix to sour cream or Greek yogurt to create a delectable dip to add sparkle to raw vegetables or chips. I like to make large batches of this as a homemade gift for the holidays, or even make it as a contribution to a potluck. I also add this to cream cheese for a next-level bagel schmear.

1 bunch fresh parsley (½ cup once dried)
1 small bunch fresh dill (3 tablespoons once dried)
3 scallions (white and green parts), cut into 1-inch segments (1 tablespoon once dried)
1 small onion, thinly sliced (2 tablespoons once dried)
1 tablespoon garlic powder
1 tablespoon Diamond Crystal kosher salt
2 teaspoons freshly ground black pepper

1. Either air-dry the parsley and dill separately (see here), or dry them in a dehydrator with the scallions and onion. To use a dehydrator, lay the parsley and dill stalks and sliced scallions and onion on a tray without overlapping. Dry for 4 to 6 hours between 100°F and 120°F until brittle. Dehydrating, Step-by-Step , for guidance.
2. In a blender or food processor, combine the dried parsley and dill, dried scallions, dried onion, garlic powder, salt, and pepper. Pulse until you have a broken mixture, not a powder. You can also use your hands to crumble the herbs and vegetables.
3. Store, labeled, in an airtight glass jar for 6 months. Use 1 to 2 tablespoons of the mix per 1 cup of sour cream or yogurt.

MEDIUM

Chicken or Potato Herb Rub

Prep Time: 20 minutes **Dehydration Time:** 4 to 8 hours **Makes:** 2 cups

You can dehydrate the herbs for this recipe in the dehydrator, or you can use a paper bag. Simply hang the herbs (except the basil) upside-down in a paper bag with a few holes poked in it in a cool dry place until properly dried. This seasoning mix is great on lamb, chicken, potatoes, and veggies. I've even used a few spoonfuls to spice up some rice.

6 rosemary sprigs (¼ cup once dried)
1 bunch fresh basil (¼ cup once dried)
6 oregano sprigs (¼ cup once dried)
6 thyme sprigs (¼ cup once dried)
2 heads garlic, cloves separate, peeled, and thinly sliced (¼ cup once dried)
½ cup Diamond Crystal kosher salt
¼ cup freshly ground black pepper

1. If not air-drying the herbs, include them here with the other ingredients. In a dehydrator, place the rosemary, basil, oregano, and thyme stalks as well as the sliced garlic on a tray without overlapping. Dry for 4 to 8 hours between 100°F and 120°F until the herbs crumble in your hands and the garlic is crispy. Dehydrating, Step-by-Step , for guidance.
2. In a medium bowl, combine the dried rosemary, basil, oregano, thyme, garlic, salt, and pepper. Mix and crush with your hands.
3. Store, labeled, in an airtight glass jar for up to 1 year.

Try This Instead: *If you are out of one of the herbs, substitute the same amount of coriander or fennel seed.*

MEDIUM

Spicy Popcorn Seasoning

Prep Time: 1 hour, plus at least 4 hours to marinate
Dehydration Time: 4 to 8 hours **Makes:** 3 cups

This seasoning is like everything bagel mix, but the chili powder brings it to the next level. It's great for popcorn (just sprinkle over hot popped kernels), or use it to add zing to avocado toast or soft cheeses.

1 onion, thinly sliced (¼ cup once dried)
2 heads garlic, cloves separated, peeled, and thinly sliced (¼ cup once dried)
1 pound fresh chiles, thinly sliced into rings (¼ cup once dried and ground)
1 cup sesame seeds
1 cup flaxseed
¼ cup Diamond Crystal kosher salt

1. Place the onion slices, garlic, and chiles on trays and dehydrate for 4 to 8 hours at 120°F until crispy. The garlic will be done first, so check every hour and remove the vegetables as they're done.
2. Place the dried onion, garlic, and chiles in a clean spice grinder, or use a mortar and pestle, and finely grind. Be mindful as you handle the chiles and open the lid of the spice grinder; you don't want to get any of that spice in your eyes! Transfer the ground spices to a medium bowl.
3. Stir in the sesame seeds, flaxseed, and salt.
4. Store, labeled, in an airtight jar in a cool dry place for up to 1 year.

D IFFICULT

Backpacker’s Stew

Prep Time: 1 hour
Dehydration Time: 4 to 12 hours for each component (soup and broth)
Makes: 3 cups dried soup components; 1½ cups broth mix

When hiking alone or camping with others, this dehydrated stew can be modified to include whatever vegetables you have at the ready or enjoy most. It’s lightweight, compact, and, most importantly, delicious, making it the ideal treat after you’ve scaled some tough terrain. This is a big project that might take a few days, but you can substitute store-bought dried ingredients, as needed, such as dried mushrooms or onions, or even dried bouillon. But what’s the fun in that?

FOR THE SOUP COMPONENTS

2 pounds potatoes or sweet potatoes, peeled and diced (½ cup once dried)
2 pounds carrots, diced (½ cup once dried)
1 pound celery, diced (½ cup once dried)
2½ pounds corn kernels (½ cup once dried)

FOR THE BROTH

2 pounds tomatoes, chopped or thinly sliced (1 cup once dried)
1½ pounds onions, thinly sliced (1 cup once dried)
8 ounces mushrooms, thinly sliced (½ cup once dried)
3 bell peppers, any color, thinly sliced (½ cup once dried)
1 tablespoon garlic powder
2 teaspoons Diamond Crystal kosher salt
1 teaspoon dried thyme, store-bought or homemade (see here)
1 teaspoon freshly ground black pepper

TO MAKE THE SOUP COMPONENTS

1. If your dehydrator is big enough, you might be able to do this all at once, or work in stages over a few days.
2. Bring a large pot full of water to a boil. Add the potatoes, carrots, and celery, and blanch according to the times in the Blanching Chart . Drain. Lay the blanched vegetables and the corn on trays so they don’t overlap. Dehydrate at 140°F until dry and brittle, checking the vegetables first after 4 hours, though it might take up to 12 hours. The vegetables will be done at different times, so check every hour or so. Dehydrating, Step-By-Step , for guidance.
3. In a large bowl, stir together the dehydrated vegetables. Transfer the mixture into a large glass airtight jar, or divide into 1-cup portions. Label and store for up to 1 year.

TO MAKE THE BROTH

4. If your dehydrator is big enough, you might be able to do this all at once, or work in stages over a few days.
5. Place the tomatoes, onions, mushrooms, and bell peppers on trays and dehydrate between 120°F and 130°F until dry and brittle, checking first after 4 hours, though it might take up to 12 hours. The vegetables will be done at different times, so check every hour or so. Dehydrating, Step-By-Step , for guidance.

6. In a food processor or clean spice grinder, combine the dried tomatoes, onions, mushrooms, and bell peppers. Process until they become a powder. Pulse in the garlic powder, salt, thyme, and pepper. Store, labeled, in an airtight glass jar for 6 months up to 1 year.

TO REHYDRATE THE STEW

7. In a medium pot over high heat, combine 2 to 3 teaspoons of broth powder with 2 cups water. Heat to dissolve the broth powder.
8. Add ½ cup of dried soup components. Boil for 20 to 30 minutes, or until the vegetables are soft. Season with salt and pepper to taste.

Variation Tip: *Sip the broth alone (although you might want to add more broth powder), or add dried veggies, jerky pieces, or ramen noodles, depending on what's on hand.*

EASY

Raspberry Leather

Prep Time: 15 minutes **Dehydration Time:** 5 to 7 hours **Makes:** 1 pound

Fruit leathers are a popular and straightforward item to make in the dehydrator. Kids and adults alike love the endless flavors you can produce. This makes an easy-to-grab, healthy alternative to candy or artificial sweet treats. I love keeping the seeds in the raspberries because they give another texture to the leather.

4 cups fresh raspberries
2 to 3 tablespoons orange juice or water
2 tablespoons maple syrup (optional)
Nonstick cooking spray

1. In a blender, combine the raspberries, orange juice, and maple syrup (if using). Puree until smooth.
2. If using an electric dehydrator, coat the fruit leather tray with cooking spray.
3. If using an oven, preheat the oven to 140°F. Line the tray with parchment paper because it will be difficult to remove the leather otherwise.
4. Using a spatula, spread the puree over the prepared tray to about ¼ inch thick. Dehydrate for 5 to 7 hours at 140°F. When ready, the leather will be a little tacky but will not indent when touched. If you need to dry it for longer, check it every 30 minutes. Dehydrating, Step-By-Step , for guidance.
5. Store, labeled, in an airtight container in a cool dry place for up to 3 months.

MEDIUM

Savory Tomato Leather

Prep Time: 20 minutes **Cook Time:** 40 minutes
Dehydration Time: 10 to 12 hours **Makes:** 1 pound

This is a savory version of fruit leather for those who prefer a less sweet treat. Add to cheese plates, or garnish a Bloody Mary!

2 cups chopped tomato
½ cup chopped onion, any type
¼ cup chopped celery
¼ cup chopped carrot
½ teaspoon dried parsley (store-bought or homemade; see here)
½ teaspoon finely ground black pepper (optional)
1 teaspoon Worcestershire sauce
Diamond Crystal kosher salt
Olive oil spray

1. In a medium saucepan over medium heat, combine the tomato, onion, celery, and carrot. Cook for about 20 minutes until tender. Stir in the parsley and pepper (if using). Transfer to a food processor and blend until smooth, or pass the mixture through a food mill. Return the puree to the saucepan and place it over medium heat.
2. Stir in the Worcestershire sauce. Cook for 20 more minutes until the sauce becomes a bit thicker. Taste and add salt, as needed.
3. Coat a fruit leather tray with olive oil according to the instructions for Dehydrating, Step-by-Step .
4. Using a spatula, spread the puree over the prepared tray into a thin layer but not so thin that it is transparent, or it will be hard to peel the leather off the tray.
5. Dehydrate for 10 to 12 hours at 140°F, or until the leather becomes tacky and lifts off the tray when gently pulled.

Variation Tip: *Change the flavor by substituting curry powder, dried basil, The Best Hot Sauce , or your favorite hot sauce, for the Worcestershire sauce and parsley. Start by adding ½ teaspoon at a time, taste the puree when it is thick and adjust the flavors.*

D IFFICULT

Seed and Veggie Crackers

Prep Time: 25 minutes **Dehydration Time:** 8 to 16 hours **Makes:** 4 to 5 cups

These super-healthy gluten-free crackers are far better than store-bought. Plus, if you're a fan of juicing, it's a great way to use up extra carrot pulp.

4 cups grated carrot or carrot pulp (if you juice carrots)
1 large tomato, roughly chopped
1⅓ cups water
¾ cup flaxseed
½ cup chopped fresh parsley or fresh cilantro
¼ cup freshly squeezed lemon juice or lime juice
2 garlic cloves, peeled
2 teaspoons Diamond Crystal kosher salt
½ cup chia seeds
1 cup raw unsalted pumpkin seeds or sunflower seeds
Nonstick cooking spray

1. In a food processor, combine the carrot, tomato, water, flaxseed, parsley, lemon juice, garlic, and salt. Process until well blended. Pour the mixture into a large bowl and stir in the chia and pumpkin seeds.
2. If using a dehydrator, coat a fruit leather tray with cooking spray. Using a spatula, spread the vegetable mixture over it to ⅛ inch thick (thinner crackers will dry faster but break more easily; thicker crackers will take longer to dry but will be able to handle items you top them with).
3. Dehydrate for 10 to 12 hours at 120°F until dry to the touch. Transfer to a mesh tray and dehydrate for an additional 2 to 4 hours, or until the crackers are crisp.
4. If using an oven, preheat the oven to between 120°F to 140°F. Line a baking sheet with parchment paper.
5. Spread the mixture over the prepared tray until ⅛ inch thick. Dehydrate for 8 to 10 hours. Check the crispness of the crackers. If they break easily when the corners bend, they are done.
6. Cool completely, then store in an airtight container.

Variation Tip: *Replace the carrot with beet, or mix carrot and beet, or spinach.*

D IFFICULT

Soy Beef Jerky

Prep Time: 30 minutes, plus at least 4 hours to marinate **Cook Time:** 20 minutes
Dehydration Time: 6 to 8 hours **Makes:** 8 ounces

Beef jerky is a world unto itself—there are competitions dedicated just to jerky. The important thing when making jerky is to select lean meat with long grains and minimal fat so it doesn't go rancid. Ask your butcher to select a meat (like flank steak) and, if possible, to cut the meat into thin slices on a slicer (see the tip if you're slicing it at home). Meat and poultry should be cooked before or after dehydration to reduce food-borne illness. I offer two options here.

2 pounds flank steak
¼ cup soy sauce
2 tablespoons Worcestershire sauce
½ teaspoon freshly ground black pepper
½ teaspoon onion powder
¼ teaspoon garlic powder
1 teaspoon The Best Hot Sauce or store-bought hot sauce (optional)

1. Prepare the meat by trimming the fat and connective tissue. Slice the meat very thinly against the grain into ⅛- to ¼-inch-thick slices.
2. In a large heavy-duty resealable plastic bag, combine the soy sauce, Worcestershire sauce, pepper, onion powder, garlic powder, and hot sauce (if using). Add the meat. Seal the bag and mix the meat in the marinade. Refrigerate for 4 hours, or overnight, turning and mixing the bag occasionally.
3. Cook the meat before dehydration: Place the meat and marinating liquid in a medium saucepan. If you need more liquid, add water—just ensure that the liquid covers the meat. Bring to a boil and boil the meat in the liquid for 5 to 10 minutes. Drain the meat and pat it dry.
4. Place the meat in the dehydrator with the strips close together but not overlapping or touching. Dehydrate for 6 to 8 hours at 160°F, checking for doneness after 5 hours. The jerky is finished when it cracks when you bend it. Dehydrating, Step-By-Step , for guidance.
5. As an added safety measure, bake the jerky after dehydration. Preheat the oven to 275°F. Arrange the dehydrated strips close together, but not touching, on a baking sheet. Bake for 5 to 10 minutes. Cool completely before storing.
6. Store, labeled, in a heavy-duty resealable plastic bag or airtight glass jar for a few weeks at room temperature, 4 to 6 months in the fridge (in a sealed bag), and up to 1 year in the freezer, if in a vacuum-sealed bag.

Make It Easy: *Pop the meat in the freezer for 30 minutes before you slice it to make it easier to get thin, even slices.*

MEDIUM

Dog Treats

Prep Time: 10 minutes **Dehydration Time:** 10 to 12 hours **Makes:** 1 cup

Your pets will love you and thank you for these. They are an incredibly healthy and inexpensive treat.

1 pound beef liver

1. Clean the liver in fresh water, removing the membranes around the liver. Pat it dry and place it on a cutting board designated for meat. Cut the liver into 1- to 2-inch strips, about ½ inch thick.
2. Arrange the strips on trays according to the instructions for Dehydrating, Step-by-Step . You can also dehydrate the liver in the oven, placing it on a wire cooling rack set over a baking sheet. Preheat the oven to 160°F.
3. Dehydrate for 10 to 12 hours at 160°F, or until the liver strips feel tough and are almost brittle when you bend them. They will be very dark, almost black, in color. Dehydrating, Step-By-Step , for guidance.
4. If you want the treats to be crispier, finish them in a 200°F oven for 5 to 10 minutes.
5. Refrigerate, labeled, in a tightly covered glass or plastic container for 3 to 4 months.

Gravlax

CHAPTER SIX

Salting and Smoking

SALTING AND SMOKING 101

Salting, which is also called curing, and smoking are different but related techniques that are often, but not always, used in tandem, which is why they're together in this chapter. It is quite possible they were discovered separately, then combined once people realized they are the ultimate combination.

Both curing and smoking are commonly used for preserving animal proteins but the techniques also enhance fruits, vegetables, and even seasonings. Beef, fish, pork, poultry, wild game, and even eggs shine when they're preserved by these methods for several reasons. First, using these methods, you can preserve larger pieces of food that cannot fit in a jar or freezer easily and that are too thick to dehydrate or ferment properly. If temperatures remain in a safe zone to avoid spoilage, large pieces of meat can sit for months, or even years, curing: Think of prosciutto, or cured ham, from Italy and Spain. Another wonderful thing about salting and smoking is that there are so

many different flavor profiles you can achieve—just part of the fun and adventure with using this technique.

Salting or curing

The mechanics of salting, or curing (I use the two terms interchangeably), meats are similar to fermentation. Salt is applied in sufficient quantities so that no bacteria can contaminate the food being cured, making it difficult for bacteria to spoil the food. The salt pulls the water out of the food's outer layers and creates a protective barrier around the food, limiting anything from penetrating it. Some examples of cured foods include country ham, pancetta, and salami.

Curing times can last from a few hours to days, depending on the flavors you want to achieve. The recipes in this book typically recommend curing meat and fish for a few days, and, in the case of Preserved Lemons , one month. Dry brine recipes require longer curing times, whereas wet brine recipes generally cure for no more than 24 hours. While food cures, it must not be in an environment that is over 38°F to 40°F because higher temperatures will cause the food to spoil. At the same time, if the temperature is too cold, it will inhibit the effects of the salt on the meat. Refrigeration is key to a successful cure. Historically, farmers would utilize the seasons to get the same effect, butchering once the weather cooled in fall and curing in early winter.

BEST PRACTICES FOR SAFELY PRESERVING MEAT

I have mentioned it before, but this is worth mentioning again: When working with raw proteins, it is critical that your workstation be clean and sanitized before and throughout the curing/smoking/cooking process. Raw meats and proteins can spoil and become incredibly harmful; they can easily contaminate other foods, cooking counters, utensils, and equipment if not cared for and cleaned completely. The easiest way to keep it all clean is to make a cleaning solution out of 1 tablespoon bleach to 1 gallon water. Mix well and have some of the mixture available in a spray bottle and another portion in a larger container for larger areas in need of sanitation.

Smoking

When humans discovered fire, they eventually figured out that the smoke, not just the flames, could also transform food. Hence, the technique of smoking. Nine times out of 10, it's essential to dry cure or wet brine food before smoking, because the salt adds flavor, moisture, and another level of protection against microbes. So, although many cured foods are not smoked, most smoked foods have been cured. The process of smoking can be "hot" or "cold"—a difference I explain here:

Cold smoke: This smoking method is mainly for flavoring foods like fish or salt and involves smoking at temperatures between 70°F and 120°F. This kind of smoking is more delicate in its penetration of the food and is used primarily to impart smoke flavor without "cooking" the food. Because the temperature is lower, you need special

equipment, such as a smoking gun, or you will need to ensure the temperature is kept low with the use of ice in your smoker. Since the smoke is not cooking the food, you usually must cook the food after smoking it.

Hot smoke: This smoking technique entails smoking foods, like bacon or even nuts, between the temperatures of 120°F and 240°F. The smoke will be more intense than that produced by cold smoking and the smoke will slowly cook the food. Items smoked using this method might not need further preparation or cooking afterward. This method is what I use the most in this book.

Essential ingredients

The essential ingredients for curing and smoking are salt, which we've discussed plenty in this book (use Diamond Crystal kosher salt, please), and what you are using to create the smoke.

There are many different items that will create smoke effectively, including wood chips, pellets, sawdust, and wood shavings. The material you choose will depend on the type of smoker you're using and the type of food you're preserving. Each material will require some practice to become familiar with how it works. The most important thing to know when choosing your smoking ingredient is to avoid soft woods that can coat the smoker with resin or unpleasantly alter the taste of food.

Woods that work well for smoking include apple, birch, cherry, hickory, maple, oak, and walnut. Soft woods to avoid are cedar, cypress, pine, and spruce. Some recipes even call for corncobs as a tool for smoking. This does not mean you can use leftovers from dinner; rather, these are corncobs that have been properly dried and hardened to use specifically for this purpose. Wet wood is actually great for smoking food because it will create smoke while making sure the wood does not turn into flames. Check your smoker instructions for guidance, but many types of smokers instruct you to soak wood chips for 30 minutes to 1 hour before using so they burn more slowly.

SMOKERS AND OTHER ESSENTIAL TOOLS AND EQUIPMENT

Like other methods of food preservation, smoking and curing require a few essentials that are unique to these methods, most essentially, smokers, which run the gamut from homemade to professional grade. Here are some options.

Smokers

Smokers range from boxes meant to work in your oven to widely available contraptions that sell for a few hundred dollars to whole small rooms dedicated to smoking food. The type of smoker you choose depends upon your budget, your passion, the time you want to spend attending to your food, and your space. It can be complicated or simple. You can build it yourself, or you can buy something fancy. But all smokers have four things in common: a source for smoke, an area that confines the smoke, racks to hold the food, and a draft.

If you don't have access to outdoor space, you can still get smoky flavor—either use a smoking gun, which costs about $50, or a smoker box. These tools are designed to

work indoors, though I only recommend using one if you have very good ventilation in your kitchen.

Bullet-style smoker: This grill is also powered by charcoal, but unlike a kettle grill (see following), it's specifically designed for smoking, which makes it easier to hold the steady, low temperatures you need. The bottom layer contains charcoal, which you then place soaked wood chips on. There's a pan of water to retain moisture and keep the temperature down, and the meat sits on racks, or hangs on a hook, above the pan. It's a relatively inexpensive tool, running around $300 for a basic model. However, a bullet-style smoker requires constant tending; you'll find yourself messing with the vents and adding charcoal or wood roughly every 45 minutes, which can turn smoking into a fun, day-long event, or a tiresome task—depending on your point of view.

Egg-style smoker: An egg-style smoker is shaped like an egg and its function is based on ancient clay ovens. They are the most eye-pleasing of the group. The bottom of the egg holds the fire. You place the food above it and control vents at the top and bottom to manage smoke and temperature. The egg allows you to grill, cook, and even bake, but if you place a pan with water and wood chips in with the heat, you can also smoke foods. There is even a plate you can purchase—specific for smoking—that helps deflect heat. The disadvantage of this equipment is that you can expect to pay a minimum of $500 for it. I have seen very small models that are not as expensive, but you sacrifice space and, therefore, the amount of food you can smoke at one time.

Electric/propane smoker: Electric smokers use wood chips that are heated without fire but instead with a heating element and water pans. This heating method creates a water vapor that imparts the smoke flavor. Because you are not relying on fire or heat but, instead, on electricity or propane to power the smoker, this smoker requires less attention; things can smoke without a lot of meddling. Because of the water element,

though, you won't get the crispier bits on your smoked foods. This option is great for smoking bacon, cheese, eggs, nuts, or salt.

Kettle grill: Not technically a smoker, this is your basic charcoal grill, and if you already have one, this is a great way to try smoking before investing in more equipment. Because kettle grills are not smokers, you will have to do a little rearranging to incorporate your heat source (charcoal), a water pan, and wood chips to create a smoky environment rather than just one that cooks food. Place wood chips on top of your hot coals and then a water pan on top of that to create the smoke vapors to properly smoke your food and keep temperatures low. Because this piece of equipment is not designed to smoke food, you need to pay careful attention to the airflow, smoke, and heat. Nonetheless, with a little work and detailed attention, you can get results, although probably not as consistent as when using other (real) smokers.

Pellet smoker: A pellet smoker is a combination oven/smoker. It uses pellets made of compressed sawdust that sit to the side of the smoker. The smoker is versatile, acting as smoker, grill, and oven, and the pellets burn down to practically nothing, meaning less cleanup. They are expensive, however, usually starting at a few hundred dollars, and you will need electricity to ignite the pellets. If you have the budget and think you will use this smoker in all the ways it can be used, it's worth the investment.

Smoker box or gun: A smoker box or gun is the lowest-investment way to smoke food. It is good for those who do not have access to outdoor cooking, want to accomplish small projects, or would like to test the waters (or the smoke!) before investing in more expensive equipment. Just make sure you have good ventilation in your kitchen.

Smoker boxes sit in or on your stovetop and use the heat from a burner, or the oven, with food-grade sawdust to smoke the food. It works for cold or hot smoking, but because of the size and nature of the box and sawdust, it is different from using a large smoker: You can only smoke small projects, the flavors may be different from what you can achieve in a larger smoker, and there might be more moisture on foods. Still, they're an inexpensive and effective entry point.

Smoking guns are convenient tools that impart smoke flavor through cold smoke exposure. These tools are affordable, small, and you can smoke food just about anywhere, any time. They are used to bring softer, gentle smoke flavors to foods like cheese, eggs, seafood, and cocktails! Even though they can go anywhere, they can't do everything—they are small, only producing small amounts of smoke at a time, and their purpose is to flavor food rather than preserve it.

Other essential tools

Other than the smoker, salting and smoking require a few more tools.

FOOD-SAFE CONTAINERS

Brining and curing often takes hours and, sometimes, days. You need a container that will not leach and that is big enough to hold the quantities you want to make. Stainless-steel pans are acceptable but *do not use any other metal* because they can affect the curing process. Instead, use glass, ceramic, or food-grade plastic containers.

MEAT THERMOMETER

Especially when smoking, a thermometer is mandatory. Most modern smokers have a temperature gauge attached to the smoker but you should also have a meat thermometer to check the internal temperature of the food you are smoking. Temperature maintenance is critical to proper and safe results with this technique.

SALTING, STEP-BY-STEP

I've broken salting and smoking into two step-by-step processes because they're slightly different. We'll start with salting.

1. **Choose the best ingredients.**
   If using cheese, eggs, or produce, look for the freshest, best- quality foods you can find. As with other preservation methods, preservation only enhances existing flavors, including off ones, so get the best of the best. Especially when dealing with animal proteins, which are low-acid foods and are susceptible to harmful microorganisms, it is important that you use the best products you can attain and plan to preserve them quickly. Produce should be fresh and completely free from blemishes. While you work, be vigilant about food safety; see Best Practices for Safely Preserving Meat . If using frozen meat, you must thaw it before curing it. Cures do not penetrate frozen meats. Thaw meats safely overnight in the refrigerator.
2. **Make the brine.**
   Whether you are doing a dry brine or wet brine, make it before you take your food out of the refrigerator to cure. Be sure to follow the brine concentrations listed in the recipes, because they are designed for safety, not just flavor.
3. **Prep your food.**
   Make sure your food is free of blood, debris, or other impediments that can affect curing. Do not scrub but, rather, wash and inspect your items before you set them to cure.
4. **Cure your food.**

If doing a dry cure, make sure to fully cover the item with the brine. Rub it into the cracks and crevices, going over the item multiple times to make sure no spot is left untouched. Take the time to be thorough. If using a wet brine, make sure the item being brined is fully submerged in the brine. You might need a weight or plate to keep the item submerged. While food cures, place it in a plastic tub or pan with 1- to 2-inch sides to prevent juices/liquids from contaminating anything else, and refrigerate it.

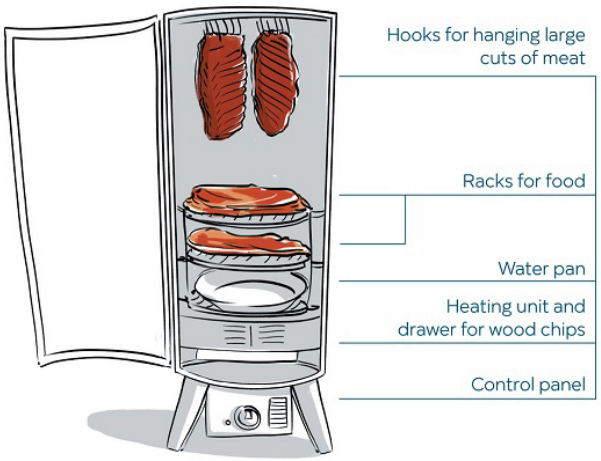
5. **Check your brined food.**
   Check your cure halfway through the brining process to make sure the food is still submerged (wet brine) or still covered in dry cure. Check for any missed spots or areas that need more attention.
6. **Store your food.**
   I've included storage instructions in each recipe, but in general, cured and smoked meats will keep for about 1 week in the fridge, or 3 to 6 months in the freezer. Other foods, like cheeses, will last for about 1 month, while items like salt last indefinitely. Reference the freezing chart here for more details.

SMOKING, STEP-BY-STEP

Although each smoking recipe will have specific instructions, the following steps apply generally to the hot smoked recipes in this book.

1. **Prepare your smoker.**
   If smoking your food, use the brining time to clean and prepare your smoker. If you need to soak wood chips, do it at least 1 hour before smoking. Clean the grills and/or hooks. Load your smoker with the appropriate burning fuel and have it ready for a quick and easy transfer to the next step of preservation. Before you remove the food from the brine, light your smoker and get it up to the ideal temperature of 120°F to 170°F for cold smoking, or 170°F to 240°F for hot smoking.
2. **Smoke your food.**
   Place your food on a rack or hook and close the smoker door. Give the temperature a few minutes to stabilize. Make sure the burning fuel is constantly

producing smoke and observe it to get a gauge on how the wood is smoldering. If the temperature gets too low, open vents and/or add more fuel, and if it gets too hot, dampen the vents. Add more wood, as needed, to maintain the smoke—it should be consistently drifting out of the vents.



3. Check your food.

Depending on smoking time, check your smoked items often, especially if you are new to smoking, or new to your smoker. Each device will be a little different and you will have to get to know your device and how it performs. Check the temperature of your meat, making sure the internal temperature is **below 120°F for cold smoking** and **between 170° F and 200°F for hot smoking** . Make sure the food is not touching any cooking surfaces or other items that are smoking because that can affect the process and penetration of the smoke.

Troubleshooting

ISSUE	ROOT CAUSE	SOLUTION	KEEP OR TOSS
Discolored meat	• Not submerged or covered completely in brine	• Put a weight on the meat to cover it entirely in brine, or use more brine. • Check brining container so that it can properly hold the meat and brine.	Toss
Too salty	• Brine was too strong, or food was cured for too long	• Wash the food, or soak in water to lessen the saltiness. • Use the recommended type of salt.	Keep, but flavor will be affected
Not salty enough	• Brine was too weak, or food did not cure long enough	• Increase the brine time.	Toss
Bitter taste	• Food was oversmoked • Not enough ventilation when smoking • Soft woods used, which are not recommended for smoking	• Moderate the amount of smoke emitted. • Open airways. • Eliminate use of soft woods for smoking projects.	Keep, but flavor will be affected
Hard or dry meat	• Brine was too strong, or food cured too long	• Wash or soak the meat in water to help it soften.	Keep, but flavor with be affected

USDA internal doneness temperatures

PRODUCT	MINIMUM INTERNAL TEMPERATURE AND REST TIME
All poultry (breasts, giblets, ground, legs, thighs, whole bird, wings, stuffing)	165°F
Beef, lamb, pork, and vealsteaks, chops, roasts	145°F; let rest for at least 3 minutes
Casseroles	165°F
Eggs	160°F
Fish and shellfish	145°F
Ground meats	160°F
Ground poultry	165°F
Ham, fresh or smoked (uncooked)	145°F; let rest for at least 3 minutes
Ham, fully cooked (to reheat)	Reheat cooked hams packaged in USDA-inspected plants to 140°F and all others to 165°F.
Leftovers	165°F

EASY

Preserved Lemons

Prep Time: 15 minutes **Cure Time:** 4 to 5 weeks **Makes:** 1 quart

This North African condiment is a so useful: add pieces while cooking any kind of grain to give them a citrusy punch, stuff them into a roast chicken, or toss them into soups.

5 lemons

¼ cup plus 2 tablespoons Diamond Crystal kosher salt

1. Wash the lemons, scrubbing the outsides thoroughly.
2. Halve each lemon starting from the top of the lemon but not quite cutting through the entire fruit. You want to stop about three-fourths of the way into the fruit, from the bottom. Make another cut in the lemon crosswise so it will open into 4 pieces while still staying whole.
3. Open each lemon and place 1 tablespoon of salt inside the fruit. Massage the salt all over each lemon. Pack the lemons into a clean jar and smash them down with a metal spoon. You will start to see liquid come out and a salty brine form. Add the remaining 1 tablespoon of salt to the jar and continue to smash down the lemons. When the lemons look a little soft and there is brine, put a lid on the jar and let it sit on the counter for 2 weeks.
4. Monitor for scum and remove any that forms (see here , Fermenting, Step-By-Step). Shake the jar every few days and push the lemons back down.
5. After 2 weeks, move the jar into the refrigerator to cure for 2 additional weeks.
6. Examine the lemons. If the skins are soft and mushy, your lemons are ready. If they are still tough, let cure in the refrigerator for another week, checking the skins afterward. Keep refrigerated in an airtight container for up to 6 months.

Try This Instead: *This is a base recipe, so spice it up to your liking. Add cinnamon sticks, coriander seeds, peppercorns, red pepper flakes, or even bay leaves.*

D IFFICULT

Gravlax

Prep Time: 30 minutes **Cure Time:** 24 to 36 hours **Makes:** 1 to 1½ pounds

A Scandinavian staple, gravlax is delicious with bagels and cream cheese or with crackers and capers, sour cream, or mustard. Gravlax is oftentimes made with vodka or aquavit (a Scandinavian liquor). Any type of salmon works, from sockeye to king, just use the best-quality and freshest you can find.

1 (1- to 1½-pound) high-grade skin-on salmon fillet (not individual fillets; one large piece)
1 cup chopped fresh dill
½ cup sugar
½ cup Diamond Crystal kosher salt
2 tablespoons vodka or aquavit (optional)
Grated lemon zest (optional)

1. Wash the fish and pat it dry. Inspect the fillet and remove any bones.
2. In a medium bowl, stir together the dill, sugar, and salt. Stir in the vodka (if using).
3. Roll out two sheets of plastic wrap that are large enough to wrap the fish and place them on a work surface. Put a layer of half the sugar-salt mix on one piece of plastic wrap and lay the fish on top, skin-side down.
4. Cover the fish with the remaining sugar-salt mix. Depending on the size of your fish, you may have some mix left. Sprinkle the top with lemon zest (if using). Tightly wrap the fish in the plastic to keep the sugar-salt mix close to the fish.
5. Sandwich the fish between two flat surfaces, such as two cutting boards or large, flat plates, then place it in a large baking dish where liquid can collect. Place a weight on top of the fish (a canned food item works) and put the fish in the refrigerator to cure for the next 24 to 36 hours.
6. Check the salmon after 24 hours. Empty the liquid from the baking dish and flip the fish over, so the bottom is now the top, when returning it to the dish. If the fillet is small, a medium cure will happen in about 36 hours. If the fillet is closer to 2 pounds, 48 hours will produce a medium cure.
7. After the curing time has finished, the fish should have bright-orange flesh and be firm to the touch. Rinse off the cure and pat the fillet dry. Keep it refrigerated for 3 days or up to 3 weeks if you vacuum seal the gravlax. You can freeze it (see tip), although the texture will be altered slightly.
8. To serve the gravlax, using a sharp knife, slice the gravlax into paper-thin slices, removing the flesh from the skin if you cured the fish with the skin on. Serve on crackers or toast with mustard or mustard sauce. You can also serve it like you would lox, on a bagel with cream cheese or cucumber.

Freezing Tip: *If you want to freeze the gravlax, do so as soon as it is ready. Cut the fillet into 4-inch sections and wrap each in plastic wrap, or vacuum seal, and freeze in a heavy-duty resealable plastic bag for up to 4 months.*

MEDIUM

Cured Egg Yolks

Prep Time: 30 minutes **Cure Time:** 1 week, plus 30 minutes in the oven
Makes: 4 yolks

For those who love egg yolks, this is your jam! These hardened yolks are wonderful grated on salads, or used to top soups, roasted vegetables, or pasta to add that extra richness. This recipe produces four cured yolks, because a little goes a long way, but you can double or triple the recipe if you want more. Use fresh free-range eggs for the best results.

1½ cups Diamond Crystal kosher salt
½ cup sugar
4 large egg yolks (make sure you have a use for the whites)

1. In a medium bowl, stir together the salt and sugar. Transfer the mixture to a small tray or plate and make 4 little wells, one for each yolk. Gently place one yolk into each well.
2. Cover the yolks with the salt mixture that surrounds them. Place the yolks in the refrigerator and let cure for 1 week.
3. After a week, check on the yolks. They should be firm but a little tacky. Brush off the salt mixture as much as possible.
4. Preheat the oven to 200°F. Line a small baking sheet with parchment paper.
5. Place the yolks on the prepared baking sheet and let them cure in the oven for 30 minutes. Remove them from the oven.
6. Refrigerate the egg yolks wrapped separately in cheesecloth or layers of paper towel, in an airtight container, for up to 3 weeks.

Smoking Instructions: *For more depth of flavor, smoke the cured yolks with a smoking gun or in a smoker at 90°F for 10 to 20 minutes.*

EASY

Smoked Salt

Prep Time: 15 minutes **Smoking Time:** 3 to 4 hours **Makes:** 1 cup

Probably the easiest recipe in this book—if you have a smoker you must do this! Smoked salt gives that special smoky flavor to anything. Use it on raw or cooked vegetables, replace regular salt with it in rubs or other seasonings, use it to top soups or sprinkle it on buttered toast. It also makes a wonderful gift. You can either cold smoke or hot smoke salt, depending on what you have easy access to. It's even easy to make without a smoker—a smoker box works fine. You can use any sea salt in this recipe, but I recommend investing in a high-quality one, like Maldon.

1 cup sea salt

1. Place the salt on a small sheet pan or in a heatproof dish that will fit in the smoker.
2. **To cold smoke:** Do not exceed 80°F for cold smoking salt. Because of the low temperature, smoke it for 3 hours before you start tasting the salt.
3. **To hot smoke:** Keep the heat no higher than 250°F and avoid the lower racks of the smoker. Because of the higher temperature, taste the salt after 1 hour and check every 30 minutes after that until the salt reaches your preferred taste.
4. Store, labeled, in an airtight container at room temperature indefinitely.

EASY

Smoked Almonds

Prep Time: 10 minutes Smoking Time: 1 to 2 hours **Makes:** 1 pound

Smoked nuts are one of those treats that seem super fancy but are the easiest things to make. This recipe is for almonds, but feel free to experiment with your favorite nuts or seeds.

1 pound raw unsalted almonds
2 tablespoons maple syrup
1 tablespoon Diamond Crystal kosher salt

1. In a medium bowl, stir together the almonds, maple syrup, and salt.
2. Preheat the smoker to between 200°F and 250°F.
3. Spread the almonds on a small, rimmed baking sheet and smoke for 1 hour. Taste the almonds. If you want more smoke flavor, smoke for 1 hour more.
4. When the almonds have the desired flavor, set them aside to cool.
5. Store, labeled, in an airtight container in the pantry for up to 1 month, or freeze for up to 6 months.

Ingredient Tip: *Instead of maple syrup, try The Best Hot Sauce , Worcestershire sauce, or soy sauce, but reduce the salt by half.*

Variation Tip: *These smoked almonds make the most delicious nut butter, a huge hit at my café. Simply smoke the almonds without the maple syrup and salt, then roast the nuts at 350°F for 7 to 10 minutes, stirring once, until toasty. While the almonds are hot, puree them in a food processor or high-powered blender until smooth. Once creamy, add the salt, a pinch at a time, blending and tasting. Refrigerate, labeled, in an airtight glass jar for up to 6 months.*

EASY

Smoked Cheddar

Prep Time: 15 minutes **Smoking Time:** 2 to 4 hours **Makes:** 1 pound

Smoked cheeses are available in grocery stores, but they're often made with fake smoke flavor. Not so here. Hard cheeses work best for smoking because they do not melt under the heat of the smoker. The key to this smoking method is to keep the cheese as cold as possible while being exposed to the smoke and becoming infused with more flavor.

1 pound Cheddar cheese
Ice

1. Remove any wax or packaging from the cheese.
2. Preheat the smoker to 90°F.
3. Fill a baking dish with ice and put the dish in the smoker on the shelf below where you will place the cheese. Place the cheese on the shelf above the ice and right over the baking dish, positioned farthest away from the smoke.
4. When the smoke builds, close the smoker door and monitor the temperature. The temperature should not exceed 90°F.
5. Smoke the cheese for 2 to 4 hours. The color of the skin on the cheese will become darker. Add more ice, if needed. You may need to open the smoker door to reduce the heat.
6. After smoking, remove the cheese and pat it dry because there might be oils on it from the heat. Let it cool completely before tightly wrapping the cheese in plastic (vacuum sealing is preferred) and refrigerating, where it will keep for 3 to 4 weeks.

EASY

Smoked Peach Salsa

Prep Time: 15 minutes **Smoking Time:** 30 minutes
Makes: 4 cups salsa (using 3 smoked peaches)

Smoked peaches stand alone as a wonderful dessert topped with brown sugar, whipped cream, or ice cream, but they can also be used in nontraditional ways, like in this salsa.

3 peaches, washed, halved, and pitted
1 red onion, finely chopped
2 jalapeño peppers, minced
½ cup loosely packed minced fresh cilantro
1 teaspoon Diamond Crystal kosher salt
Juice of 1 or 2 limes

1. Preheat the smoker to 200°F. Soak applewood chips, if necessary.
2. Place the peaches, skin-side down, on the top part of the smoker and smoke for 30 minutes. Set aside to cool, then chop the peaches.
3. In a medium bowl, combine the chopped peaches, red onion, jalapeños, and cilantro. Gently stir to combine.
4. Add the salt, stir, and taste.
5. Add the juice of 1 lime, stir, and taste. Add the juice of the remaining lime and more salt, as needed.
6. Refrigerate, labeled, in an airtight container for 3 to 4 days at peak flavor and texture.

D IFFICULT

Smoked Cheddar Breakfast Sausage

Prep Time: 30 minutes **Makes:** 2½ pounds

This recipe, along with the Smoked Trout , is from my good friend Sheila Anderzunas, who has had many lives in food, including designing commercial kitchens, nurturing food makers, and owning a butcher shop. Her love of all things meat (especially sustainable and local) has led her to a love of smoking. Her breakfast sausage recipe works beautifully with Smoked Cheddar .

1 tablespoon light brown sugar
2 teaspoons dried sage
2 teaspoons Diamond Crystal kosher salt
1 teaspoon freshly ground black pepper
¼ teaspoon dried rosemary
2 pounds ground pork
6 ounces Smoked Bacon , or store-bought smoked bacon, finely chopped
8 ounces Smoked Cheddar , or store-bought smoked Cheddar cheese, chopped into ⅛-inch pieces

1. In a large bowl, stir together the brown sugar, sage, salt, pepper, and rosemary.
2. Add the ground pork to the spice mixture and stir, or mix with your clean hands, to combine. Add the bacon and Cheddar. Mix well with your clean hands and form into about 10 (4-ounce) patties, or 5 (8-ounce) patties.
3. Refrigerate, labeled, wrapped tightly in plastic and placed in an airtight container, for up to 1 week, or cook immediately.
4. To cook the patties, heat a skillet over medium-high heat until hot. Working in batches as needed, add the patties to the skillet and cook for 6 minutes per side, or until the internal temperature reaches 150°F.

Freezing Instructions: *Vacuum seal and freeze uncooked sausage patties for up to 3 months.*

D IFFICULT

Smoked Bacon

Prep Time: 30 minutes **Curing Time:** 5 to 7 days, plus 24 hours in the refrigerator after curing **Smoking Time:** 3 hours **Makes:** 3 pounds

Ah, bacon: If you eat meat, this is the great unifier of all dishes. Once you start making your own bacon, you'll never be the same—having control of the quality of the meat, seasoning, and smoking will make your meals that much more delicious.

⅓ cup packed light brown sugar
3 tablespoons Diamond Crystal kosher salt
1 tablespoon freshly ground black pepper
2 teaspoons smoked paprika
1 teaspoon pink curing salt (not pink Himalayan salt; see Ingredient Tip)
3 pounds boneless, skinless pork belly

1. In a small bowl, stir together the brown sugar, salt, pepper, paprika, and curing salt.
2. Place the pork belly on an aluminum foil–lined tray and pat it dry with paper towel. Evenly sprinkle half the cure mix over the surface of the belly and gently rub it in. Turn the pork over and repeat on other side with the remaining mix.
3. Place the entire belly into a large heavy-duty resealable plastic bag and refrigerate it for 5 to 7 days. Each day, flip the belly to its other side and massage the contents of the bag (which will transform to a liquid). Once the belly is firm to the touch (think well-inflated basketball), after 5 to 7 days, it is ready for the next step.
4. Remove the belly from the bag and rinse it under cool water. Pat it dry with paper towels and place it on a wire rack set over a drip pan in the fridge, uncovered, for 24 hours.
5. Preheat the smoker to between 200°F and 225°F. Soak apple or cherry wood chunks or chips.
6. Place the belly in the smoker directly on a smoker rack and smoke for about 3 hours, or until the internal temperature reaches 150°F.
7. Refrigerate the bacon in a heavy-duty resealable plastic bag, or other sealable container, for up to 1 week, or freeze, vacuum sealed preferred, for 3 to 4 months.
8. To prepare the bacon, thinly slice the pork belly, less than ½ inch thick, or cube it to use in dishes for added flavor. In a skillet over medium-high heat, cook the bacon for about 5 minutes per side until crispy, or place the slices on a wire rack set over a sheet pan and bake in a 400°F oven for 15 to 25 minutes until cooked through and crisp.

Ingredient Tip: *Don't mistake pink curing salt for trendy pink Himalayan salt—they're not at all the same. Pink curing salt, also known as Prague Powder #1, helps combat botulism and gives foods like ham and bacon that rosy color everybody loves. It has nitrites in it, which have a bad rap, but is safe to eat in small doses.*

MEDIUM

Smoked Trout

Prep Time: 20 minutes **Curing Time:** 15 minutes
Smoking Time: 1½ to 2 hours **Makes:** 6 fillets, or 1½ pounds

This recipe, along with Smoked Cheddar Breakfast Sausage , is from my good friend Sheila Anderzunas. This recipe also works great with Arctic char, if that is easier for you to find at the market. This trout is great served cold or hot.

2 tablespoons Diamond Crystal kosher salt
2 tablespoons light brown sugar
4 cups cool water
6 rainbow trout fillets (about 1½ pounds total)

1. In a large bowl, make the brine by combining the salt, brown sugar, and water, stirring until the salt and sugar dissolve. If they're not dissolving properly, heat the water a bit. Just make sure the brine is completely cool before adding the fish.
2. Soak applewood chips for about 30 minutes.
3. Place the fillets, skin-side up, in the brine and let soak for 15 minutes.
4. Preheat your smoker to 180°F.
5. Remove the fish from the brine and place the fillets directly on the smoker grates. Close the lid and smoke for 1½ to 2 hours, depending on the thickness of your fillets. The goal is to reach an internal temperature of 145°F and for the fish to flake easily with a fork.
6. Remove the fish from the smoker and serve warm, or cool completely and serve chilled with your favorite sides, such as red onion, capers, cream cheese, and crusty bread.
7. Refrigerate, labeled, tightly wrapped in plastic, for 1 week in the fridge, or freeze, vacuum sealed preferred, for up to 3 months.

MEDIUM

Smoked Tofu

Prep Time: 15 minutes, plus 30 minutes to drain **Smoking Time:** 90 minutes
Makes: 1 pound

Smoked tofu (or tempeh) is a healthy vegetarian alternative to animal proteins. You can hot smoke or cold smoke the tofu: cold smoking gives it a gentle flavor and delicate texture, whereas hot smoking produces a stronger flavor and a tougher exterior. Use the smoked protein in stir-fries, cold in salads, and thinly sliced as an alternative to bacon in sandwiches.

1 (16-ounce) block tofu, drained
1 tablespoon sesame oil or olive oil

1. Wrap the tofu in a clean dish towel or paper towels. Place the block between 2 cutting boards and leave to drain for 30 minutes. Cut the block into 4 equal pieces and brush with oil.
2. **To cold smoke:** Preheat your smoker to between 70°F and 90°F. **To hot smoke:** preheat your smoker to 180°F.
3. Place the tofu in the smoker and smoke for 30 to 45 minutes per side.

Storage Tip: *Refrigerate in a heavy-duty resealable plastic bag for up to 2 weeks (check the expiration date of your tofu). Vacuum seal and freeze leftover tofu for up to 4 months.*

MEDIUM

Smoked Turkey Jerky

Prep Time: 15 minutes, plus 30 minutes to freeze and 24 hours to marinate
Smoking Time: 2 to 4 hours **Makes:** 1 pound

This jerky is miles away from what you might pick up at your local gas station. The cherrywood adds a nice sweet flavor, the perfect complement to the soy and ginger.

1 (3-pound) turkey breast
1 cup soy sauce
½ cup packed light brown sugar
5 garlic cloves, chopped
2 tablespoons Worcestershire sauce
2 tablespoons honey
2 tablespoons chopped peeled fresh ginger
2 teaspoons red pepper flakes (optional)
Neutral cooking oil

1. Put the turkey breast in the freezer for 20 to 30 minutes so it firms up.
2. Using a very sharp knife, slice the breast against the grain into thin, ⅛-inch-thick slices. Try to make the slices as uniform as possible.
3. In a heavy-duty resealable plastic bag, combine the soy sauce, brown sugar, garlic, Worcestershire sauce, honey, ginger, and red pepper flakes (if using). Add the turkey to the bag, seal the bag, and refrigerate for 24 hours, turning the bag a couple of times.
4. When ready to smoke, soak cherry wood chips for 30 minutes.
5. Drain the turkey in a colander in the sink.
6. Preheat the smoker to 180°F. Coat the grates with oil.
7. Carefully place the turkey slices directly onto the prepared grates, making sure no slices overlap. Smoke for 2 to 4 hours, flipping once during the smoking time. The finished jerky should be chewy, but still bend a bit. You can smoke it longer if you want extra-chewy jerky. Let cool.
8. Store the jerky, labeled, in a heavy-duty resealable plastic bag or lidded glass jar for up to 3 weeks at room temperature, 4 to 6 months in the fridge (in the sealed bag), or vacuum sealed in the freezer for up to 1 year.

Green Smoothie Mix

CHAPTER SEVEN

Freezing

FREEZING 101

Freezing is one of the easiest and most convenient food preservation methods and—along with dehydration—one of the oldest. Before modern home appliances, communities that lived in the far north or near mountain ranges discovered that food didn't spoil in extremely cold temperatures. The power of cold temperatures led to ice boxes (literally metal boxes stuffed with ice) that transformed with technology into the refrigeration we have today.

Freezing lowers the temperature of food so microorganisms can no longer work and enzymes act at a drastically slower rate. Note that I didn't say it "destroys" the microorganisms; they are still present, just not moving. Enzymes will also be present and working at a drastically slower rate, but they will still function, meaning decay will still happen, just much more slowly. And because spoilage elements are still present, once an item thaws, it quickly begins to spoil.

The objective of freezing is not just to keep the food item around longer, but also to maintain its quality. With this in mind, when you place your food in the freezer, you want to ensure there is as little air as possible. Exposure to air, whether from outside the container via a leak or on the inside, will make the food deteriorate.

You can freeze anything you can process in a jar, and even more, but determining which processing method you should use requires weighing the pros and cons of freezing food. Freezing is ideal for seafood, or items like berries or other produce that doesn't preserve well (like broccoli). Freezing also retains much of the nutritional value, color, and texture of foods—but there are also downsides to consider. A freezer has limited room; there is no way you can choose to freeze everything. And freezing, unlike other methods, requires defrosting and, often, cooking. It also doesn't transport well unless you have a portable freezer.

Nevertheless, when stored correctly, frozen foods last between 3 months and 1 year. When the temperature of your freezer fluctuates (due to a malfunction, power outage, or from being left open too long), it can reduce the quality of the frozen items in it. If ever there is an incident of a prolonged rise in temperature, it is important to check all frozen items (especially meat) to see if they are still frozen. If the item has completely thawed, you should either prepare the item in the next couple of days or refreeze the product. Label these items to say they were refrozen, along with the date.

Part of the issue with freezing is that we don't give it enough credit. We tend to treat the freezer as a storage unit for things we don't want to think about or don't have a plan for. It wasn't until I opened my own café that I started to use the freezer with intention, making sure we made the best use out of this small space. It is worth taking a bit of time to decide what you will be using and what freezing can do to make life easier for you.

So, let's make this last section count and do freezing right.

Maintaining quality when freezing

To do freezing right, there are certain steps you can take to assure higher quality outcomes, like pretreating produce, blanching, and taking steps to prevent discoloration and freezer burn. For example, some items need to be pretreated to maintain their structure in cold temperatures. Similarly, most vegetables should be blanched before freezing, by lightly steaming or boiling them. The blanching halts enzyme activity.

Some fruits, such as cut apples, will darken when exposed to air. To prevent discoloration before freezing, apply one of three options to the fruit: lemon juice; salt water (2 teaspoons salt to 2 cups water); or a salt-vinegar solution (1 tablespoon salt plus 1 tablespoon vinegar and 2 quarts water). This is important when dealing with lighter-colored fruits.

Another food-quality concern when it comes to freezing is freezer burn. Freezer burn is dehydration in frozen food. You might detect it on the edges of frozen items, where there is air exposure. It's not dangerous but it can affect the texture and flavor of the product. Removing as much air as possible from the bags (vacuum sealing is ideal) or leaving only ½ inch of headspace in containers will limit the amount of air to which a product is exposed. Wrapping items tightly in aluminum foil or plastic wrap and taping well also prevents freezer burn.

Essential tools and equipment

Some of these are vital (like the freezer!) and some are based on preference.

Containers: You can use heavy-duty resealable plastic bags, plastic pint or quart containers, or other tougher plastic containers (I like “deli cups” you can get in restaurant supply stores). It all depends on the size of the items you are preserving and how these storage containers make the most of your freezer space. You can use heavy-duty foil, but cover it in plastic wrap to avoid tearing. And as much as I love glass for preserving projects, glass can break.

Freezer: There are two main types of freezers: upright or chest style. The upright freezer is probably what most of us are used to. It is either part of a refrigerator combo or a stand-alone freezer. There are several variations of sizes, styles, and looks. The uprights take up less space because they are taller rather than wider. But these freezers are typically much smaller (if attached to a refrigerator) and they lose cold air quickly when opened. Chest freezers are great if you want to do some serious freezing. They are larger and stay cold when the door is opened because cool air usually sinks to the bottom. They do take up more floor space. Whichever you buy, place it in an area away from heat sources, like your oven, and leave 2 to 4 inches’ distance between the back of the unit and the wall to allow for good airflow, which means the appliance doesn’t have to work as hard to maintain the cold temperature.

Silicone ice-cube tray: I love using ice-cube trays for portioning items that are impactful in small concentrations, like lemon juice, although I have a whole list of things I like to freeze in ice-cube trays (see here). I prefer silicone because it is easier to remove items from these trays.

Vacuum sealer and bags: A vacuum sealer machine removes all the air from a special bag designed for this purpose; the bag molds itself to the item you are freezing, cutting out any oxygen. Sealers range in price from $70 for simple ones to almost $1,000 for commercial-grade sous vide sealers. Vacuum sealers are great for meats, proteins, and other more expensive items because they ensure that the least amount of air will come in contact with the item, meaning less freezer burn. This is also a great way to make single portions of large batch items; plus, you can maximize storage space by eliminating any unused space.

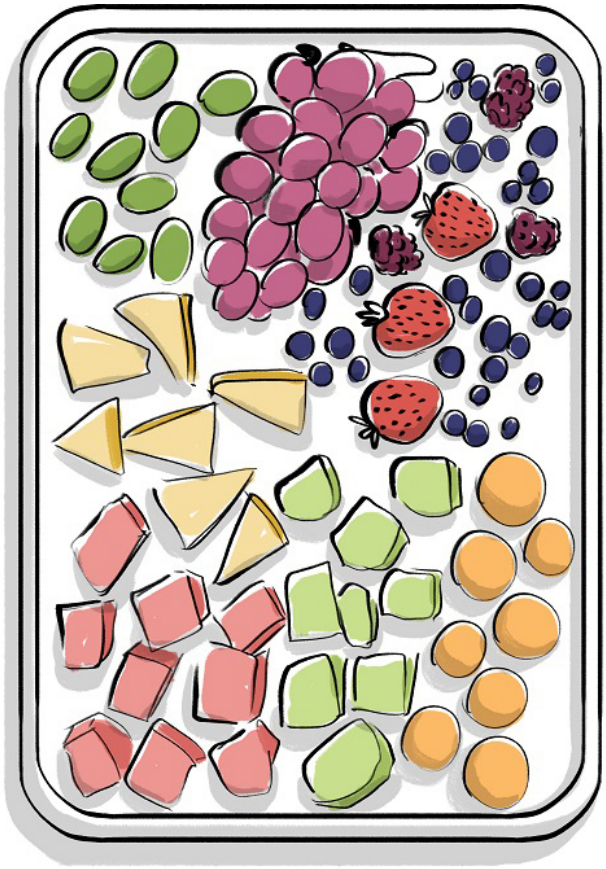
ITEMS IDEAL FOR ICE CUBE FREEZING

Broth: Grab and use for cooking or flavoring.
Citrus Juice: Use it in drinks, seasoning, and dressings.
Coffee/Tea: Use in beverages like iced coffee and iced tea to cool them without diluting.
Herbs: Blend 2 cups fresh herbs with 1 cup water until smooth and pour into trays. Frozen herbs are handy for adding to cooked or pureed items like soups, sauces, and marinades.
Yogurt: Freezes well for 2 to 3 months. You can pop it into the blender for a smoothie as a creamier alternative to ice.

FREEZING, STEP-BY-STEP

Freezing isn't rocket science—you've surely done it before—but there are ways to do it better. Here's how.

1. **Overhaul your freezer.**
   If you want to maximize your freezer and use your freezing skills to their utmost potential, it is important to overhaul your freezer first. Empty it, evaluate everything in it, and determine which items are old and/or will be used in a reasonable amount of time. Be realistic: are you truly going to use everything in there? It's okay, too, to start off with an empty freezer so you can fill it with purpose. After you empty it, clean it thoroughly and make sure it has a thermometer, either as a part of the unit or one you add.
2. **Choose and prepare your ingredients.**
   Choose the best and freshest ingredients you can find. Fruit should be at peak flavor, vegetables should be young, and meats of the best quality possible. Wash everything well but do not soak anything, as retained water will expand as the item freezes, which will break food tissues and cell walls, thereby reducing quality. Pretreat as needed Freezing 101 .
3. **Portion your items for freezing.**
   As long as you have the proper vessels in which to place your items, you can portion things as you like. This lets you freeze quantities according to how much you want to eat or serve.



Refrigerate animal proteins until you are ready to cut them, and work in small quantities as you package them to prevent contamination and any loss of quality.

For fruits and vegetables, cut them to your preference, place in a single layer on a parchment paper–lined tray to flash freeze (see here , Items Ideal for Flash Freezing). For liquid ingredients, freeze either in pint or quart containers, or in heavy-duty resealable plastic bags. If you're freezing in a bag, seal the bag and lay it flat on a rimmed baking sheet to freeze; once frozen, you can stack the bags to store.

4. Label your packages.

Label your items and include the date frozen on every package. Include information like "spicy" or "sugar-free" or "contains nuts," if you like.

5. Rotate your frozen items.

Place your new freezer items in the back of the freezer and rotate older items to the front. Known as "FIFO" (first in, first out), this policy will ensure you use older food first, thereby preventing waste. Also, make a section on the bottom or aside from other items in the freezer for raw proteins. That way, in case a meat container breaks or somehow leaks, you lower the risk of cross-contamination.

HOW TO FLASH FREEZE

To flash freeze, freeze individual pieces of food in a single layer on a parchment paper–lined tray so they can easily be separated. Once the items are frozen, place them in heavy-duty resealable plastic bags for easier storage. Here are the best items to flash freeze.

Avocado
Banana
Beans, snap or shelled
Berries
Coconut
Corn kernels
Flours
Grains, both raw and cooked
Nuts a nd seeds

Peas, shelled
Sto ne fruit

FREEZE ANYTHING

The more surface area an item has, the more exposure to the elements and the shorter the storage time. For example, a cut of meat will hold for longer than ground beef. Likewise, preparing animal proteins before freezing shortens the storage time, as opposed to freezing in their raw state. High-fat content foods will also have a shorter storage time.

Beans and grains don't have their own section here, but don't take that to mean they're not good for freezing. Quite the opposite: they're fantastic for freezing. The rules are basically the same no matter what type you're cooking. You can flash freeze cooked grains by spreading them on a parchment-lined baking sheet, then placing them in the freezer. Once frozen, transfer to a labeled heavy-duty resealable plastic bag. Freeze beans the same way, or in their cooking liquid in a pint- or quart-size container, or flat in a bag. They will last 6 months in the freezer. To thaw, either leave in the refrigerator overnight, microwave, or reheat over low heat in a covered container on the stovetop.

Meat, poultry, and proteins

For best quality, thaw meats and proteins in the fridge—this could take overnight or several days, depending on how big the pieces are. You can cook some items directly from frozen, like frozen dinners and casseroles. You can also thaw meat still in its wrapping in a bowl of cool water on the counter; just change the water frequently so it stays cool. Alternatively, thaw in the microwave at 50 percent power but be sure to check it frequently so it doesn't begin to cook.

ITEM	MONTHS TO KEEP FROZEN
Bacon and sausage	1 to 2
Casseroles	2 to 3
Egg whites or egg substitute	12
Frozen dinners and entrées	3 to 4
Gravy, meat or poultry	2 to 3
Ham, hot dogs, lunch meats	1 to 2
Meat, cooked	2 to 3
Meat, uncooked ground	3 to 4
Meat, uncooked roasts	4 to 12

Meat, uncooked steaks or chops	4 to 12
Poultry, cooked	4
Poultry, uncooked giblets	3 to 4
Poultry, uncooked parts	9
Poultry, uncooked whole	12
Soups and stews	2 to 3
Wild game, uncooked	8 to 12

Fruits

You can simply flash freeze many types of fruit and then keep frozen, but some foods benefit from some pretreatment (A Guide to Pretreatments), so I've added notes here. Basically, all these fruits will last 9 months to 1 year in the freezer but check them occasionally to be sure they're not developing freezer burn and that the packaging is still intact. Use directly from frozen for baking or smoothies, or heat to make sauces and compotes. Frozen fruit can even make a nice, refreshing snack (I love grapes for that reason). Keep in mind the texture will be softer than fresh, so use a cooking method that accounts for that.

TYPE OF FOOD	PREP NOTES
Apples	Peel, core, slice, and dip into acidulated water; can sprinkle with sugar, or turn into applesauce
Apricots	Pit; ascorbic acid dip; sugar sprinkle (optional); can puree
Bananas	Peel and slice; ascorbic acid dip; can mash
Blueberries	Blanch for 30 seconds for a firm texture; sugar sprinkle for a soft texture; can crush/puree
Cherries	Stem and pit; sugar sprinkle
Citrus	Peel, segment, or pull apart; sugar sprinkle (optional); can juice
Cranberries	Blanch for 30 seconds for a firm texture; sugar sprinkle for a soft texture; can crush/puree
Figs	Peel (optional); sugar sprinkle (optional); can crush
Grapes	Sugar sprinkle (optional); can juice
Guava	Peel and cut; sugar sprinkle (optional); can puree (add lemon juice)

TYPE OF FOOD	PREP NOTES
Loquats	Cut and seed; acidulated water; can puree (add juice)
Mango	Peel and slice; sugar sprinkle (optional); can puree
Melons	Peel, remove soft areas, cube, slice, or ball; sugar sprinkle (optional); can crush (add lemon juice)
Peaches and nectarines	Peel, pit, and slice; acidulated water dip; sugar dip; can crush/puree
Pears	Peel, core, and slice; acidulated water dip; sugar sprinkle (optional); can puree
Persimmons	Peel and cut; can puree (add juice)
Pineapple	Peel, remove eyes/core; dice or slice; sugar sprinkle (optional); can crush
Plums	Cut and pit; acidulated water dip; sugar dip; can puree (use juice)
Rhubarb	Cut into 1- to 2-inch pieces; blanch for 1 minute; sugar sprinkle (optional); can puree (cook in boiling water)

Vegetables

Most vegetables need some form of pretreatment (A Guide to Pretreatments), so I've added notes here. Vegetables will last 9 months to 1 year in the freezer but check them occasionally to be sure they're not developing freezer burn and that the packaging is still intact. Stir into casseroles or roast directly from frozen, or heat on the stovetop or in the microwave for a quick side. As with fruit, the texture will be softer than fresh, so use a cooking method that accounts for that.

TYPE OF FOOD	PREP NOTES
Asparagus	Trim and blanch
Beets	Roast or boil until fully cooked; peel. If small, freeze whole, or quarter and flash freeze
Broccoli and cauliflower	Separate florets, chop stems, blanch
Broccoli rabe	Trim, chop, and blanch
Brussels sprouts	Halve large sprouts, keep small ones whole; blanch
Carrots	Slice or chop; blanch
Celery	Slice or chop

TYPE OF FOOD	PREP NOTES
Corn	Blanch on the cob, then cut off kernels
Eggplant	Slice or halve (if small), salt for 30 minutes, then roast until tender
Fennel bulb	Core, slice, and roast until tender, or chop and freeze (the texture will suffer if you don't precook, so this is appropriate for soups and casseroles)
Garlic	Roast whole, then puree or mash the cloves; freeze in ice-cube trays
Ginger	Grate or juice and freeze in ice-cube trays, or freeze, whole and unpeeled, in plastic wrap—to use, grate from frozen
Green beans	Trim and blanch
Hardy greens	Sauté, cool, and freeze in a heavy-duty resealable plastic bag
Herbs	Blend with water or oil and freeze in ice-cube trays
Leeks	Slice or chop
Mushrooms	Slice or chop, dip in acidulated water, then steam blanch, sauté, or roast
Okra	Trim and blanch
Onions and shallots	Slice or chop
Parsnips	Slice or chop, then blanch
Peppers, sweet and hot	Slice, chop, or leave whole if small; can roast before freezing
Potatoes	Peel, chop, blanch, or roast (do not need to fully cook)
Scallions	Puree or finely chop, mix with water or oil; freeze in ice-cube trays
Spinach and other tender greens	Sauté, cool, and freeze in a heavy-duty resealable plastic bag
Squash, summer	Slice ½ inch thick and blanch
Squash, winter	Roast and mash, or cube and blanch until fully cooked
Sweet potatoes	Peel, chop, blanch, or roast (do not need to fully cook)
Tomatillos	Remove husks, score, freeze whole or roast and freeze
Tomatoes	Blanch and peel, or freeze whole or chopped, or roast and freeze

Troubleshooting

EASY

Green Smoothie Mix

Prep Time: 30 minutes **Makes:** 3½ cups (enough for 4 smoothies)

If you are a smoothie fan, this is a quick and simple way to batch prep portions of your favorite flavor combinations. Freezing is a great way to retain the healthful benefits of fruits and vegetables, and smoothies highlight them for quick and easy enjoyment.

2 cups chopped fruit (a single fruit or combination)
1 cup torn greens (such as arugula, beet, chard, dandelion, kale, or spinach)
½ cup thickener (such as frozen sliced banana, yogurt, juice, or peanut butter frozen in ice-cube trays)
1 tablespoon hemp seeds, coconut flakes, chia seeds, protein powder, honey, or cacao (optional)

1. Blanch the fruit and greens separately (The Essentials of Blanching) and flash freeze them (How to Flash Freeze).
2. Evenly divide the frozen fruit, greens, thickener, and hemp seeds (if using) among 4 heavy-duty resealable plastic bags. Label and date the bags, then seal them, pushing out as much air as possible from the bags to limit freezer burn. Freeze for up to 3 months (if using yogurt for a thickener) or 9 months (if using the other thickeners).
3. When you are ready to make your smoothie, in a high-speed blender, combine the contents of one bag with 1 to 1½ cups milk, juice, coconut water or coconut milk, or water. Blend on high speed until smooth.

EASY

Teriyaki Marinade

Prep Time: 10 minutes **Makes:** 1 cup (enough to marinate 1 pound of meat, tofu, or tempeh)

This crowd-pleasing marinade can be frozen alone so you can bring it out whenever you have something you'd like to marinate, or you can freeze it with a protein like chicken, tofu, or tempeh, so you have a flavor-infused meal at the ready. There are so many variations you can make to tailor this marinade to your own tastes.

⅓ cup soy sauce
⅓ cup rice wine vinegar
3 tablespoons olive oil
2 tablespoons light brown sugar
1 teaspoon thinly sliced garlic or ½ teaspoon garlic powder
1 teaspoon grated peeled fresh ginger or ½ teaspoon ground ginger

1. In a medium bowl, large measuring cup, or jar, combine the soy sauce, vinegar, oil, sugar, garlic, and ginger. Whisk well to combine.
2. If you are freezing the marinade alone, pour it into a plastic pint container, or freeze flat in a heavy-duty resealable plastic bag.
3. If you are freezing the marinade with chicken, tofu, or tempeh, place the protein in a vacuum bag or heavy-duty resealable plastic bag. Pour the marinade into the bag. Close the bag, removing as much air as possible.
4. Place the bag on a flat dish in the freezer for 3 hours, or until frozen solid. Check the bag to make sure there are no leaks. Label and use within 3 months.

EASY

Pepita Pesto

Prep Time: 5 minutes **Cook Time:** 15 minutes **Makes:** 2 cups

Pepitas make this pesto a little different and slightly lighter overall. This pesto works with pasta, but also as a condiment on sandwiches or a dip for vegetables.

2 cups packed fresh basil leaves
2 cups unsalted pepitas (hulled pumpkin seeds)
6 garlic cloves, peeled
1 tablespoon Diamond Crystal kosher salt, plus more as needed
1 tablespoon freshly ground black pepper, plus more as needed
½ cup red wine vinegar, plus more as needed
½ cup olive oil, plus more as needed

1. In a food processor, combine the basil, pepitas, garlic, salt, and pepper.
2. Turn on the processor and drizzle in the vinegar.
3. With the machine still running, slowly add the olive oil. The pesto should start to turn creamy. Once the mixture is a lighter green color, the pesto is ready. You might need to add more olive oil. Taste and adjust the seasoning, as needed.
4. Freeze in small containers, labeled, for up to 6 months, or refrigerate for 1 month.

MEDIUM

Scratch Tomato Paste

Prep Time: 30 minutes, plus 1 hour to cool **Cook Time:** 4 to 26 hours
Makes: 4 half-pints or 32 ice cubes

You can make this recipe on the stovetop, but the best and easiest way to make this is in a slow cooker. I also highly encourage using a food mill for this recipe because it will make the process easier, but I've added instructions if you don't have one. I love using the ice-cube tray for preserving tomato paste because it easily makes 2-tablespoon portions that are ready to use. This paste is so concentrated—the flavor of delicious ripe tomatoes really sings.

12 pounds tomatoes, cored and chopped (4 quarts); if you don't have a food mill, blanch and peel the tomatoes before coring and chopping

2 bay leaves

½ teaspoon Diamond Crystal kosher salt (optional)

1. If using a food mill, skip this step. In a large pot over high heat, cook the chopped tomatoes for 30 minutes, stirring frequently and crushing the tomatoes with a wooden spoon, to break them down and make them soft. Press the cooked tomatoes through a fine-mesh sieve into a slow cooker.
2. If using a food mill, pass the raw tomatoes through a food mill into a slow cooker.
3. Add the bay leaves to the cooker, cover the cooker, and cook on high heat for 2 hours. After 2 hours, the puree should be bubbling. At this point, turn the lid slightly to the side so there is an opening for air to escape, or use 2 wooden spoons to prop up the lid. The objective is to have air flowing out of the cooker while keeping the puree hot so it can reduce. Cook for 24 hours, checking it and stirring every so often. The paste is ready when it holds its shape on a spoon.
4. Alternatively, place the puree in a saucepan, add the bay leaves, and place the pan over medium heat. Cook for 1½ to 2 hours, stirring frequently to avoid burning. When the paste is thick and coats the spoon, remove it from the heat and let it cool for 1 hour.
5. Taste the paste; add the salt, if using.
6. Once cooled, remove the bay leaves from the paste, spoon the paste into an ice-cube tray, and freeze for 1 hour.
7. When the paste is frozen, transfer the cubes into a heavy-duty resealable plastic bag. Keep frozen, labeled, for up to 6 months. If you have vacuum-sealer bags, portion the cubes in groups of 4 and vacuum seal the bags for freezing.

Canning Tip: *You can also water bath can tomato paste using the acidification steps described in chapter 2 (see here); just halve the quantities used for 1 pint and process for 45 minutes.*

Dehydration Tip: *No waste! Turn the tomato pulp left in your food mill into a magically delicious seasoning I call "tomato dust." Spread it on a fruit leather tray sprayed with olive oil, or on a parchment paper–lined baking sheet. Dehydrate in an electric dehydrator for 6 hours at 140°F, or until the tomatoes are crispy. In an oven, dehydrate on the lowest possible setting, checking the tomatoes at 2 hours and every hour after until they are dried and crispy. In both cases, allow the dried tomato to cool after*

dehydrating. Crush the dried tomatoes in a clean spice mill into a powder. Store, labeled, in an airtight glass jar in a cool dry place.

DIFFICULT

Apple and Rum Raisin Pie Filling

Prep Time: 45 minutes, plus 1 hour for raisins to soak
Cook Time: 25 minutes (filling only), plus about 1 hour to cool; 30 to 45 minutes if baking a pie **Makes:** 16 cups (enough to fill 4 [9-inch] pies)

Rum, raisins, and apples make this a slightly different take on a classic. Use your favorite store-bought or homemade pie dough when you bake the pie—I've added instructions for you.

1 cup raisins
½ cup dark rum
7½ pounds (18 to 20) apples, cored, peeled, and thinly sliced (16 cups)
¼ cup bottled lemon juice
6 cups water
2 cups granulated sugar
2 cups packed light brown sugar
1 cup cornstarch
4 teaspoons ground cinnamon
2 teaspoons grated lemon zest (optional)
1 teaspoon Diamond Crystal kosher salt

1. In a small saucepan over medium heat, bring the raisins and rum to a boil. Remove from the heat and let sit for 1 hour.
2. In a large bowl, toss the apples and lemon juice and set aside.
3. In a large pot over medium heat, warm the water.
4. In a small bowl, whisk the granulated sugar, brown sugar, cornstarch, cinnamon, lemon zest (if using), and salt to combine. Add the sugar mixture to the water and bring to a boil. Cook for 2 to 3 minutes, whisking constantly.
5. Add the apples and bring to a boil again. Add the rum raisins and reduce the heat to maintain a simmer. Cook for 5 to 8 minutes, or until the apples are tender. Remove from the heat and cool the mixture for 1 hour.
6. Once cooled, divide the filling among 4 gallon heavy-duty resealable plastic bags. Seal the bags, taking out as much air as possible, and lay flat in the freezer. Label and keep frozen for up to 1 year.
7. To make a pie, defrost the pie filling in the fridge overnight. Have ready 2 piecrusts.
8. Preheat the oven to 350°F.
9. Line a 9-inch pie tin with pie dough and pour the filling into the crust. Cover with a second crust, crimp or trim the sides, and pierce the top crust to allow steam to escape.
10. Put the pie on a baking dish to catch any drippings and bake for 30 to 45 minutes until the filling is bubbling out of the crust and the crust is a golden brown.

MEDIUM

Slow Cooker Chicken Bone Broth

Prep Time: 15 minutes **Cook Time:** 8 hours 30 minutes (stovetop); 15 hours 30 minutes (slow cooker) **Makes:** 4 quarts

Every time I roast a chicken, I make a batch of bone broth; there is just no reason not to. You can use it for a recipe, or drink mugs of it, just like I do, in winter with a squeeze of fresh lime juice and a dash of The Best Hot Sauce . The best way to make this broth is in a slow cooker—make it in the evening and let it cook while you sleep. Regardless of how you make it, you're bound to feel its positive effects; bone broth is said to promote gut, skin, and joint health.

20 cups water

Bones from 1 whole roasted chicken, picked clean of meat

1 yellow onion, quartered

1 celery stalk, halved

3 carrots, roughly chopped

3 garlic cloves, peeled

1 bay leaf

2 teaspoons Diamond Crystal kosher salt (optional), divided, plus more as needed

1. In a slow cooker, combine the water, bones, onion, celery, carrots, garlic, bay leaf, and 1 teaspoon of salt (if using). Cover the cooker and cook on high heat for 10 to 15 minutes until the liquid starts to boil. If 20 cups of water are too much for your slow cooker, just cover the bones with water.
2. Once the broth boils, turn the slow cooker temperature to low.
3. If you are making this on the stovetop, combine the ingredients in a large stockpot over high heat and bring to a boil. Reduce the heat to low, partially cover the pot with a lid, and simmer for 6 to 8 hours.
4. With either appliance, maintain a simmer or low boil.
5. Check the broth at the 5-hour mark. You should start to see the chicken fat on the top of the broth and the vegetables softening.
6. After the 10-hour mark, the broth will start to become ready. The chicken bones should be brittle and you will be able to crush them easily.
7. By hour 15, the vegetables will almost disintegrate upon touching them. Taste the broth and turn off the heat.
8. Using a fine-mesh strainer set over a large heatproof bowl, filter out all the bones and vegetables from the broth. Taste the broth. Add the remaining 1 teaspoon of salt (if using), stir, and taste again. If you need more salt, add it to taste.
9. Pour the broth into 4 quart-size plastic containers, leaving 1½ inches of headspace to allow the broth to expand while freezing. Freeze, labeled, for up to 6 months.

EASY

Roasted Chiles

Prep Time: 30 minutes, plus 10 to 20 minutes to steam
Roasting Time: 5 to 10 minutes **Makes:** 6 cups

Those that live in New Mexico know that when chile season approaches, you clear out your freezer and just stock it full of charred chiles! Defrost throughout the year and add to omelets, meat, or chicken dishes; create new flavors for your salsas; or, if you are a true “chilehead,” add them to everything you eat. You can use any of your favorite peppers. Keep in mind that the time this recipe takes depends on how many chiles you want to freeze.

10 medium to large chile peppers (New Mexican Hatch chiles preferred), washed

1. Place a rack in the top third of the oven and preheat the oven to broil, or 500°F.
2. Place the washed peppers on a sheet pan and roast or broil them for 3 to 4 minutes per side until the majority of peppers are blistered and golden *(not black),* checking them every minute or so. The entire pepper should be blistered; if necessary, flip the chiles to make sure both sides are roasted.
3. Take the chiles out of the oven, put them in a paper bag and close it, or a covered bowl, and let them steam for 10 to 20 minutes. This will help when removing the skins.
4. Wearing gloves, stem the chiles and peel off the skins. From here you have two options: Chop the chiles, or keep them whole, and place in airtight containers; or vacuum seal, to freeze. It depends upon how you plan to use them.
5. Freeze, labeled, for up to 1 year.

EASY

Mini Spinach and Parmesan Frittatas

Prep Time: 15 minutes **Cook Time:** 35 minutes **Makes:** 12 frittatas

I love to do this project when I'm making Mini Chicken Potpies , using any leftover onion and spinach from the pies. Also made in pie tins, these little frittatas—or quiches without crust—are great for breakfast or lunch with a side salad.

2 tablespoons olive oil or butter, divided
1 cup chopped onion
1 (16-ounce) package frozen spinach, thawed, squeezed dry, and chopped
12 large eggs
½ teaspoon Diamond Crystal kosher salt
½ teaspoon freshly ground black pepper
¾ cup grated parmesan cheese
1 tablespoon dried parsley or dill (optional)

1. Preheat the oven to 350°F. Coat a 12-cup muffin tin, or two 6-cup tins, using 1 tablespoon of oil.
2. In a small skillet over medium heat, heat the remaining 1 tablespoon of oil. Add the onion and cook for about 8 minutes, stirring, until soft. Add the spinach and cook for 2 minutes, just until hot. Evenly distribute the vegetable mixture among the prepared cups.
3. In a large bowl, whisk the eggs, salt, and pepper until blended. Whisk in the cheese and dried herbs, if desired. Pour the egg mixture into a large measuring cup and evenly distribute it into the muffin tin, using all the custard.
4. Bake for 25 minutes, or until the eggs are lightly browned on the top and sizzling on the sides.
5. Let cool to room temperature. Remove the cooled frittatas from the tin and place them into a heavy-duty resealable plastic bag. Freeze, labeled, for up to 3 months.
6. To reheat, microwave on high power for 2 minutes.

D IFFICULT

Mini Chicken Potpies

Prep Time: 30 minutes **Cook Time:** 45 minutes (filling only)
Freeze Time: 5 hours **Makes:** 12 to 14 potpies

Mini potpies make a great dinner for a busy day and a comfort food treat. Freezing them in advance makes cooking easy when time is not on your side. They also make a nice item to gift. You can use a muffin tin or mini pie tins.

¼ cup all-purpose flour, plus more for dusting
1 (14-ounce) package pie dough (2 crusts)
2 tablespoons olive oil or butter
½ cup chopped onion
1 cup chopped carrot
½ teaspoon dried thyme
½ teaspoon Diamond Crystal kosher salt
¼ teaspoon freshly ground black pepper
1 cup milk or Slow Cooker Chicken Bone Broth or store-bought broth
1½ cups shredded cooked chicken
1 cup frozen spinach, thawed, squeezed dry, and chopped

1. Lightly flour a work surface and roll each piecrust so it is a little bit thinner than what came out of the package. Use a small (5-inch) bowl to cut out 6 or 7 dough circles, rerolling the scraps and cutting out more circles.
2. Press each dough round into the well of a muffin tin. The dough should come over the edges of each cup. Place the pan in the fridge while you prepare the filling.
3. In a large skillet or medium saucepan over medium heat, heat the oil. Add the onion and cook for 2 to 3 minutes, just until it begins to soften. Add the carrot and cook for 2 to 3 minutes more.
4. Add the flour, thyme, salt, and pepper. Cook for 1 minute, stirring.
5. Add the broth and bring to a boil, stirring constantly. The mixture will start to thicken.
6. Remove the pan from the heat and stir in the chicken and spinach, making sure the spinach is fully incorporated. The mixture should be thick and hold its shape when scooped into a spoon. If the mixture is too thin, return the pan to medium-high heat and cook, stirring constantly, until it thickens, then remove from the heat. Let cool to room temperature.
7. Remove the muffin tin from the fridge. Evenly divide the filling among the crusts, filling them to the top. Gently fold the excess dough over the top of the filling to completely cover the top. Place the pies in the freezer for 5 hours, or until frozen solid.
8. Gently remove the pies from the muffin tin, using a butter knife to detach the sides of the pies from the tin, if needed. Place the frozen pies in a heavy-duty resealable plastic bag, or vacuum seal them individually. Keep frozen, labeled, for up to 3 months.
9. To heat the pies, preheat the oven to 350°F. Line a sheet pan with parchment paper and place the pies on it. Bake the frozen pies for 25 to 30 minutes, or until the crust is golden and the filling is bubbling.

D IFFICULT

SoCal Breakfast Burritos

Prep Time: 45 minutes **Cook Time:** 1 hour **Freeze Time:** 2 to 3 hours **Makes:** 8 burritos

Breakfast burritos make a delicious and wholesome meal that is also convenient to grab and go. The key to making these is to prepare all the components individually, then arrange them on your counter to create a burrito-filling assembly line. To reheat from frozen, unwrap a burrito, place it on a microwave-safe plate with a slightly damp paper towel on top, and microwave on high power for 2 minutes.

8 Smoked Bacon slices or store-bought bacon slices
2 bell peppers, any color, or Roasted Chiles , chopped into bite-size pieces
2 pounds potatoes, scrubbed and cut into 1-inch cubes
1 tablespoon taco seasoning (optional)
Diamond Crystal kosher salt
Freshly ground black pepper
2 tablespoons olive oil, or as needed, divided
1 pound bulk Smoked Cheddar Breakfast Sausage , or store-bought breakfast sausage
16 large eggs
12 (12-inch) flour tortillas, plus a few more in case of tearing
1 (16-ounce) package shredded Cheddar-Jack cheese blend

1. Preheat the oven to 400°F.
2. Place the bacon strips on a baking sheet and bake for about 15 minutes until crispy, depending on the thickness of the bacon. Set aside.
3. In a roasting pan, combine the bell peppers (if using pre-roasted chiles, no need to re-roast them) and potatoes. Sprinkle with taco seasoning (if using), or salt and pepper to taste, and drizzle with 1 tablespoon of oil.
4. Roast for about 30 minutes until slightly browned and the peppers are soft, stirring once halfway through the cooking time. Set aside.
5. While the vegetables roast, in a medium nonstick skillet over medium heat, cook the sausage for about 10 minutes until browned and no longer pink, stirring and breaking up any chunks. Drain the fat, place the sausage in a medium bowl, and set aside.
6. In a large bowl, whisk the eggs to blend. Season with salt and pepper.
7. Using the same skillet you used for the sausage, place it over medium heat and add the remaining 1 tablespoon of oil, if needed. Pour in the eggs and cook, stirring occasionally, until they are set to your liking. Turn off the heat and set the eggs aside.
8. Heat your tortillas. You can microwave them all at once on high power for 15 seconds or, heat them in a skillet or on a grill, over medium heat, one at a time, for 30 seconds per side.
9. Place the warmed tortillas on a clean work surface and evenly divide the sausage, bacon, cheese, eggs, and potato/chile mixture among the tortillas, placing the filling in the center of each.
10. Fold the tortillas one at a time. Fold the left and right sides of the tortilla toward the center, about 2 inches on each side. Tightly fold the bottom of the tortilla up and over the center where the filling is. From the bottom, roll up the burrito toward the top of the tortilla, keeping the entire burrito's contents

as snug as possible without breaking the tortilla. If you break the tortilla, transfer the contents to another tortilla.

11. Wrap each folded burrito in a piece of parchment paper, in the same manner that you wrapped the actual tortilla. Then, wrap each parchment-wrapped burrito in plastic wrap or aluminum foil and flash freeze on a tray for 2 to 3 hours. Once frozen, transfer the burritos into a heavy-duty resealable plastic bag. Keep frozen, labeled, for up to 3 months.

Try This Instead: *Substitute cooked and drained beans for the sausage and bacon to make a vegetarian burrito.*

All About Altitude

Water at a higher elevation boils at a lower temperature. To compensate for this difference in temperature, processing times for water bath canning and the psi for pressure canning must increase as elevation increases. Check out the chart to find your altitude, or height above sea level; if your location isn't listed, you can likely find your elevation with a quick online search. Then, use this chart to make the necessary adjustments.

You can write the details here:

My altitude at _____ (location) is _____(elevation in feet).
My altitude adjustment is _____ minutes.

Once you know this, add this time to the processing time specified in your **water bath canning** recipe whenever you are at this location.

ALTITUDE IN FEET	INCREASE PROCESSING TIME
0 to 1,000	No adjustment needed
1,001 to 3,000	5 minutes
3,001 to 6,000	10 minutes
6,001 to 8,000	15 minutes
8,001 to 10,000	20 minutes

For **pressure canning** , follow the guidelines in this chart for added adjustments in psi (pressure per square inch) based on your altitude.

ALTITUDE IN FEET	DIAL-GAUGE CANNER	WEIGHTED-GAUGE CANNER
0 to 1,000	10	10
1,001 to 2,000	11	15
2,001 to 4,000	12	15
4,001 to 6,000	13	15
6,001 to 8,000	14	15
8,001 to 10,000	15	15

ALTITUDES OF CITIES IN THE UNITED STATES AND CANADA

UNITED STATES

STATE	CITY	FEET	METERS
Arizona	Mesa	1,243	379
	Phoenix	1,150	351

STATE	CITY	FEET	METERS
	Scottsdale	1,257	383
	Tucson	2,389	728
California	Fontana	1,237	377
	Moreno Valley	1,631	497
Colorado	Aurora	5,471	1,668
	Colorado Springs	6,010	1,832
	Denver	5,183	1,580
Georgia	Atlanta	1,026	313
Idaho	Boise	2,730	832
	Idaho Falls	4,705	1,434
Iowa	Sioux City	1,201	366
Kansas	Wichita	1,299	396
Montana	Billings	3,123	952
	Missoula	3,209	978
Nebraska	Henderson	1,867	569
	Lincoln	1,176	358
	Omaha	1,090	332
Nevada	Las Vegas	2,001	610
	Reno	4,505	1,373
New Mexico	Albuquerque	5,312	1,619
	Santa Fe	7,260	2,213
North Carolina	Asheville	2,134	650
North Dakota	Bismarck	1,686	514
Ohio	Akron	1,004	306
Oklahoma	Oklahoma City	1,201	366
Pennsylvania	Pittsburgh	1,370	418
South Dakota	Rapid City	3,202	976

STATE	CITY	FEET	METERS
Texas	Amarillo	3,605	1,099
	El Paso	3,740	1,140
	Lubbock	3,256	992
Utah	Provo	4,551	1,387
	Salt Lake City	4,226	1,288
Washington	Spokane	1,843	562
Wyoming	Casper	5,150	1,570

CANADA

PROVINCE	CITY	FEET	METERS
Alberta	Calgary	3,600	1,100
	Edmonton	2,201	671
Ontario	Hamilton	1,063	324
Manitoba	Brandon	1,343	409
Saskatchewan	Regina	1,893	577
	Saskatoon	1,580	482

Measurements and Conversions

VOLUME EQUIVALENTS (LIQUID)

US STANDARD	US STANDARD (OUNCES)	METRIC (APPROXIMATE)
2 tablespoons	1 fl. oz.	30 mL
¼ cup	2 fl. oz.	60 mL
½ cup	4 fl. oz.	120 mL
1 cup	8 fl. oz.	240 mL
1½ cups	12 fl. oz.	355 mL
2 cups or 1 pint	16 fl. oz.	475 mL
4 cups or 1 quart	32 fl. oz.	1 L
1 gallon	128 fl. oz.	4 L

VOLUME EQUIVALENTS (DRY)

US STANDARD	METRIC (APPROXIMATE)
⅛ teaspoon	0.5 mL
¼ teaspoon	1 mL
½ teaspoon	2 mL
¾ teaspoon	4 mL
1 teaspoon	5 mL
1 tablespoon	15 mL
¼ cup	59 mL
⅓ cup	79 mL
½ cup	118 mL
⅔ cup	156 mL
¾ cup	177 mL
1 cup	235 mL
2 cups or 1 pint	475 mL
3 cups	700 mL
4 cups or 1 quart	1 L

OVEN TEMPERATURES

FAHRENHEIT (F)	CELSIUS (C) (APPROXIMATE)
250°	120°
300°	150°
325°	165°
350°	180°
375°	190°
400°	200°
425°	220°
450°	230°

WEIGHT EQUIVALENTS

US STANDARD	METRIC (APPROXIMATE)
½ ounce	15 g
1 ounce	30 g
2 ounces	60 g
4 ounces	115 g
8 ounces	225 g
12 ounces	340 g
16 ounces or 1 pound	455 g

Resources

Airlocks: *Fermentools.com*

Cultures for Health: Great resource for purchasing cultures and starters and growing your fermentation skills. *CulturesForHealth.com*

Etsy: Handmade online marketplace where you can find several makers of hand-thrown fermenting crocks. *Etsy.com*

Excalibur Dehydrators: Manufacturer of front-load dehydrators. The website has loads of recipes, support, parts, and even commercial-grade dehydrators for taking your projects to the next level. *ExcaliburDehydrator.com*

Fresh Preserving: The home of Ball and Kerr jars, canning tips, recipes, and supplies. *FreshPreserving.com*

Kombucha Kamp: Everything you need to know about kombucha—check out Hannah's book on Kombucha! *KombuchaKamp.com*

Mountain Rose Herbs: A great source for dried herbs, teas, spices, and ingredients, many of which are organic and fair trade. *MountainRoseHerbs.com*

Mount Hope Wholesale: Bulk grains, beans, spices, nuts, and seeds. *MountHopeWholesale.com*

National Center for Home Food Preservation: The most up-to-date information on all methods of food preservation with links of extension offices across the country. *NCHFP.UGA.edu*

Nesco: Manufacturer of top-load dehydrators, vacuum sealers, and other kitchen equipment; find replacement parts, recipes, and additional tools for further preservation projects. *NESCO.com*

Presto: Makes pressure canners (including electric), dehydrators, and other kitchen gadgets; find replacement parts, instructional videos, and manuals for everything Presto produces. *GoPresto.com*

Smoking-meat.com with Jeff Philips: Reviews, products, recipes, and a forum for all things grilling and smoking. *Smoking-Meat.com*

Sourdough Starter Resources: *WildFermentation.com*

USDA Food Safety and Inspection website: Official government website for food safety, safe food handling, and education. If you decide to take your food preservation adventures into a business, you will want to visit this site. *FSIS.USDA.gov*

Wisconsin Aluminum Foundry: Manufacturer of All American canners; find retailers, videos, and instructions on All American pressure canners. *AllAmerican1930.com*

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Smoking Food: A Beginners Guide by Chris Dubbs and Dave Herberle, Skyhorse Publishing, 2008

Stocking Up: How to Preserve the Foods You Grow, Naturally, edited by Carol Hupping Stoner, Rodale Press, Inc., 1977

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About the Author

Delilah Snell is the owner of Alta Baja Market, a café and market that celebrates the flavors and makers above and below the United States/Mexico border. She is a former Master Food Preserver (former in that she no longer volunteers her time) who has taught workshops on food preservation for more than a decade. Snell has also organized food events for up to 30,000 people. You can see her work at AltaBajaMarket.com , or on social media at @altabajamarket and @missdelilahsnell, and on YouTube at the Alta Baja Channel .