FERMENTING GUIDE & RECIPE BOOK

Masontops®

By Sarah Miller of
KillerPickles.com

Thank You

Thank you for purchasing a Masontops fermentation product, and letting us join you on a journey through the wonderful world of fermentation. In this guide, you will learn why fermented foods are so healthy and how simple they are to prepare. Plus, we will share some mouth-watering recipes that you can try at home!

All instructions were written for use with the Pickle Pebble fermentation weights, Pickle Packer vegetable tamper, and Pickle Pipe waterless fermentation airlock, so they couldn't be easier.

Enjoy!

Contents

What Is Fermentation?

For this booklet, we are discussing the fermentation of vegetables, or lactic acid fermentation. Fermentation is a process whereby the natural bacteria present in fresh vegetables utilize the carbohydrates to reproduce and excrete lactic acid, which preserves the vegetables and creates the characteristic tangy flavor.

Fermentation is carried out by Lactobacilli bacteria, a large family of acid producing bacteria that live in the soil, on all plants, and on the skin and in the digestive tracts of most animals.

Tough Band Screw Band and Pickle Pipe with Brussels Sprouts Pictured Here

Benefits Of Fermentation

Fermentation is first and foremost a means of preservation; it is the original form of pickling! Fermentation allows you to preserve a season's harvest to enjoy later in the year. It creates healthy lactic acid that gives foods a bright, tangy flavor. Lactic acid functions as a digestive aid - tangy pickles served at a meal help to whet the appetite and stimulate the production of digestive juices. It helps to keep our stomach and bowels at the proper pH. Lactic acid is also deadly to pathogens, making fermentation the safest form of food preservation.

Fermented foods retain all their original vitamins, and the fermentation process also increases some vitamins, notably vitamin C. They contain active enzymes that can assist with digestion. Fermented foods have had the complex carbohydrates broken down and converted to organic acids, making them highly digestible. In a way, the foods are "predigested" by the bacteria, allowing us to absorb all the good nutrition with little digestive effort.

Raw fermented foods also contain live lactic acid bacteria. Some of these bacteria are considered to be probiotics, meaning they can take up residence in our gut and help bolster our microbiome.

How It All Works

Just Add Salt!

Fermentation was a happy accident! Thousands of years ago, workers building the Great Wall in China packed some cabbages with salt in a pot, hoping to preserve them. When they opened the pot later they found it bubbling and teeming with fermenting goodness, and a delicious sour flavor. That basic method of preserving vegetables in a salty brine spread around the world, so that nearly every culture with access to salt makes some kind of fermented food.

The two ingredients needed to make fermented foods are fresh vegetables and salt. So simple! The fresh vegetables provide the necessary bacteria and carbohydrates, while the salt has multiple functions in a ferment. First, salt exerts osmotic pressure on the vegetables, pulling the water out of them and then moving into the cells to take its place. This helps to create a brine, and also makes the vegetables firmer. Salt also inhibits spoilage organisms that would turn our vegetables into rotten mush instead of fermented goodness.

Vegetables submerged in a salty brine soon begin bubbling with the fermenting activity of a variety of lactic acid bacteria. These bacteria consume the sugars in the vegetables, excrete lactic acid, and also produce carbon dioxide. They acidify the brine quickly, to inhibit any competition from spoilage organisms.

QUICK TIP!

Signs of healthy fermentation are: active bubbling, cloudy brine, strong pickly odor from the fermenting gases.

Two Fermenting Techniques

To Brine, or Not to Brine?

Dry Salting:

Dry salting refers to mixing finely sliced, chopped, or shredded vegetables with salt and letting them macerate to release their juices. Sauerkraut is the classic dry salted ferment. When dry salting vegetables, shred them very finely with a sharp knife, grater, or mandoline slicer. The shredded vegetables are mixed with salt, and then pounded and packed firmly in a jar. They release their juices, which submerges them and starts the healthy fermentation process. Dry salted vegetables work well with 1 tablespoon fine grind salt per 2lbs. of vegetables, which will fit in a 1 quart Mason jar.

Brining:

Brining is used when you want to leave the vegetables whole, or in sticks or chunks. Dill pickles are the classic brined ferment. For brining, large pieces of vegetables are packed tightly in a jar, and then a salt-water brine is added to cover them. For brined ferments, plan on using about 1lb. vegetables per 1 quart jar, and about 2 cups of brine. Standard brine strength is 1 teaspoon salt per cup of water, which works well for most vegetables. Veggies that have a high water content, such as cucumbers or peppers, need a stronger brine - for these use 1.5 to 2 teaspoons salt per cup of water.

Ferment For Success

Whichever technique you choose, there are a few things you can do to make sure every batch of fermented vegetables is carefree and delicious. Follow these steps to get a perfect ferment every time:

1. **Don't overfill!** Fermenting veggies are very active and bubbly - they can ooze out of the jar and make a mess if you're not careful. Fill only to the shoulder of the jar for a dry salted ferment, such as sauerkraut. For pickled veggies in brine, fill to the neck.

2. **Don't underfill!** Leaving too much headspace in a jar will allow extra space for oxygen to hang out, which can lead to oxidation of the veggies or brine, or a scummy growth on the surface. Remember that a 1 quart jar will hold about 2lbs. of veggies when dry salting, or 1lb. of veggies when brining.

3. **Add a weight!** Fermenting veggies become swollen with carbon dioxide, floating to the surface and sometimes poking up out of the brine where they may spoil. Always place a weight on top to keep them submerged. Pickle Pebbles Plus work well for this purpose and feature a new gripped handle for easy removal.

4. **Seal the jar!** Using a lid keeps excess oxygen out. Oxygen coming into the jar contributes to scummy surface growths, such as kahm yeast or mold.

5. **Vent it!** Sealing up a jar full of fermenting veggies can lead to a dangerous explosion if you don't allow some way for the gases to escape. The Pickle Pipe is the perfect one-way valve to release the gases while preventing oxygen from entering the jar.

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Ferment For Success

6. **Give it time!** Vegetable fermentation is carried out by a succession of healthy bacteria that each play a role in increasing the acidity and contributing unique flavor metabolites. We can't rush the process and trying to do so will generally yield less than stellar results. We all have different preferences for the "pickliness" of our ferments, but in general it will take some weeks.

7. **Mind the temperature!** Lactic acid bacteria prefer slightly cooler temps than we do. A slower ferment at 60-70°F will yield better results than one fermented at higher temps. When the weather is warm, fermentation proceeds more quickly and things will get soft faster. Try to find a cooler spot in your home when fermenting in summer, and plan on checking your ferments for doneness earlier.

8. **Transfer to the fridge!** When a ferment is ready, it should be stored in a cool place to slow fermentation. Remember, these are living foods! If left out at room temperature they will continue fermenting, becoming very sour and eventually softening. Storage in the refrigerator is recommended. In the fridge they will stay crisp and fresh for many months.

Gathering Supplies

Time to gather up your supplies and ferment something! Here's what you'll need:

Wide mouth Mason jars: The 1 quart size is the most versatile, but it's good to have some pints and half gallons in your pantry as well.

Fresh produce: Any raw vegetable can be fermented, but best results come from fresh, good quality produce that is crisp and juicy.

Salt: Make sure the salt you choose is pure and free of any additives such as anti-caking agents or iodine, which can cause unappealing flavors and colors.

Water: Filter tap water to remove chlorine.

Pickle Pipe: Waterless airlock forms a barrier to oxygen and contaminants while venting fermentation gases.

Pickle Pebbles Plus: Weights hold the veggies down under the protective brine during weeks of fermentation.

Pickle Packer: Dry salted veggies like sauerkraut must be firmly packed in the jar to release their juices.

FABULOUS FERMENTS!

Now that you're ready to go, here are some fun recipes to introduce you to the tasty world of fermented foods.

Traditional Sauerkraut

Makes 1 quart

Sauerkraut is the original fermented vegetable, and the most widely known. It's also a great first ferment for a beginner because cabbage is cheap and plentiful, and it tends to ferment very well even if mistakes are made. Sauerkraut also lends itself well to countless variations; once you've made a basic kraut, try mixing it up with different vegetable and spice additions. The possibilities are endless!

Green Cabbage Pictured Here

Traditional Sauerkraut

Ingredients:

1 small red or green cabbage (about 2lbs.)
1 tablespoon fine grind salt
1 teaspoon whole spices, such as caraway, dill, or celery seed (optional)

Methods:

Begin by rinsing your cabbage, then remove and discard any blemished leaves, especially ones with black spots. Next, peel off one whole leaf and set it aside. Cut the cabbage from top to bottom, down through the core into two halves, and then cut each half again into quarters. Cut out and discard the cores from the cabbage quarters.

Next, place one wedge of cabbage on your cutting board cut-side down, and slice across the grain as thinly as you can to shred it. As each quarter is shredded, transfer the cabbage to a large bowl and sprinkle with some of the salt. Keep adding cabbage and salt in layers until you're out of both. (If you're using spices, sprinkle them on now.)

With your hands or a large spoon, toss the cabbage well to incorporate the salt evenly. Then squeeze and massage the cabbage a bit to work it in. Next, use the Pickle Packer to pound the cabbage and begin breaking down the cell walls to release the juice. Pound it down flat, then toss it all together and pound it again.

Continue pounding and mixing until the cabbage is wilted and juicy. This can take several minutes. (If you get tired of pounding you can place a plate on top of the cabbage and something heavy on top of the plate. Then cover it all with a towel and let it sit for a couple hours to macerate.)

When the cabbage is thoroughly pounded and juicy, it's time to pack the jar. Add a couple handfuls of the cabbage to a 1 quart Mason jar and use the Pickle Packer to pack it down firmly.

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Traditional Sauerkraut

As you push the cabbage down, the brine will rise up in the jar. Keep adding and packing down the cabbage until the jar is filled to the shoulder. Do not overfill the jar! Two pounds of cabbage fits pretty perfectly into a 1 quart Mason jar. If you find that the jar is full but there are still a few spoonfuls of cabbage left, toss them with a bit of olive oil for a tasty fresh salad.

Now take the clean cabbage leaf you reserved and lay it flat on your cutting board. Set the jar on the leaf, near the top where it is more pliable. Use a sharp knife to cut a circle out of the leaf, exactly the diameter of the jar. Place this leaf directly on the surface of the sauerkraut to help prevent little bits from floating up. Place a Pickle Pebble on top of the leaf to keep the cabbage submerged under the brine. Wipe the rim of the jar, then add a Pickle Pipe and secure the ring. Write the date on the side of the jar with a felt-tip pen and set it in a dark place to ferment.

At first your kraut may be a little dry if the cabbage was not very fresh. Wait a day or two to see if it releases enough juice to submerge all the cabbage and the Pickle Pebble. If it does not, make a brine of 1/2 teaspoon salt dissolved in 1/2 cup water. Add enough of this so that the Pickle Pebble is completely submerged.

Fermentation should begin within a day or two.
As it proceeds you will notice these changes:
» The cabbage swells up so that the brine is almost touching the lid.
» Pockets of gas appear in the cabbage.
» The color changes from bright to drab green.
» Bubbles or foam appear on the surface of the brine.
» A sulfurous aroma emits from the jar.
» White sediment in the bottom of the jar.

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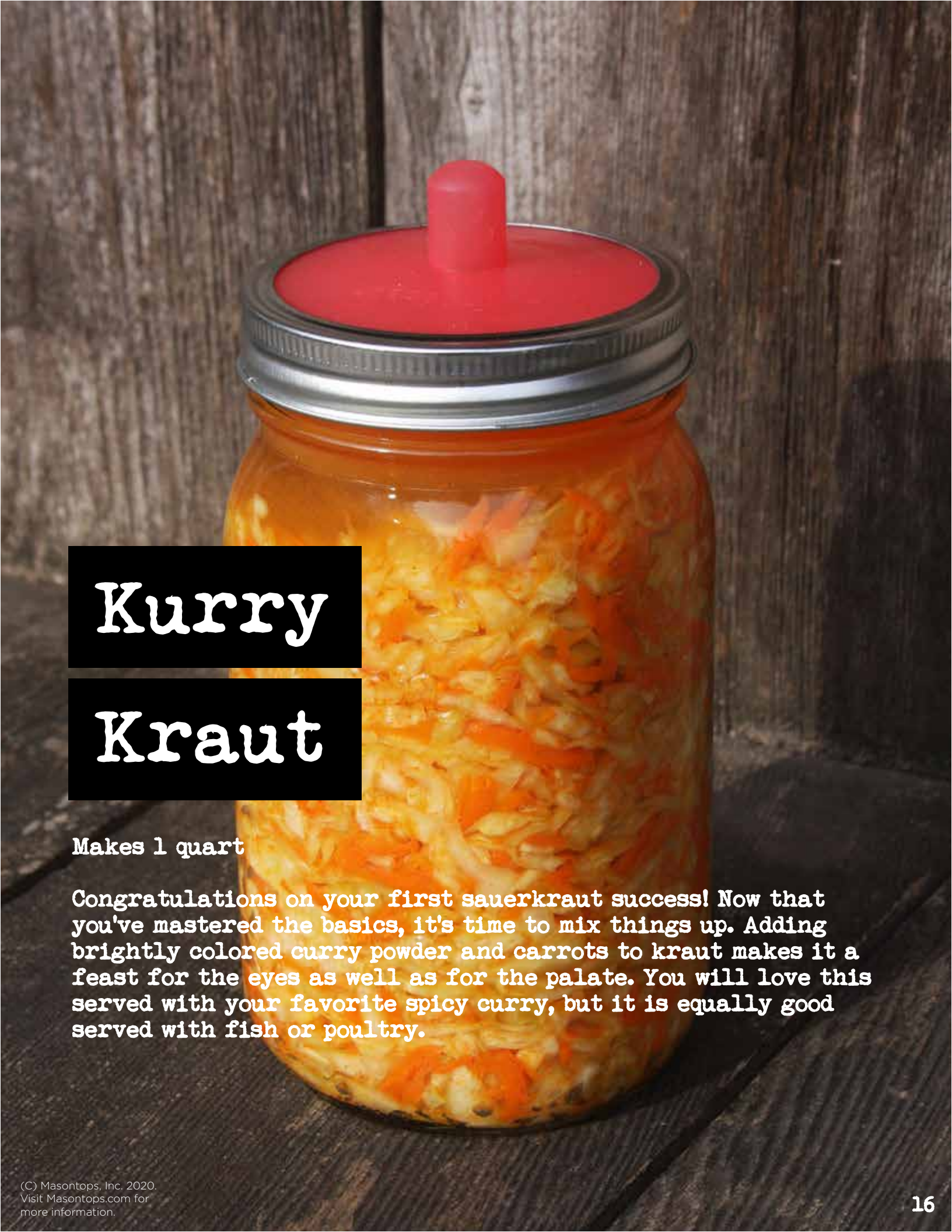
Traditional Sauerkraut

All of these things are normal signs of healthy fermentation! Sauerkraut takes a long time to ferment and the flavor improves with age. If your house is warm you may check it as early as 2-3 weeks; for cooler temps plan to allow 1 month or more.

When you think your kraut is ready, open the jar to have a taste. The cabbage should have changed from white to nearly translucent. The salty flavor should have diminished; it has been replaced with the bright, tangy flavor of the lactic acid.

Once your sauerkraut has fully fermented, remove the Pickle Pipe and Pickle Pebble. Seal the jar with the original lid and ring, and transfer to the fridge for storage.

Red Cabbage Pictured Here



Kurry Kraut

Makes 1 quart

Congratulations on your first sauerkraut success! Now that you've mastered the basics, it's time to mix things up. Adding brightly colored curry powder and carrots to kraut makes it a feast for the eyes as well as for the palate. You will love this served with your favorite spicy curry, but it is equally good served with fish or poultry.

Kurry Kraut

Ingredients:

1 small cabbage (2lbs. or a little less)
1 large carrot
1 tablespoon fine grind salt
2 teaspoons curry powder

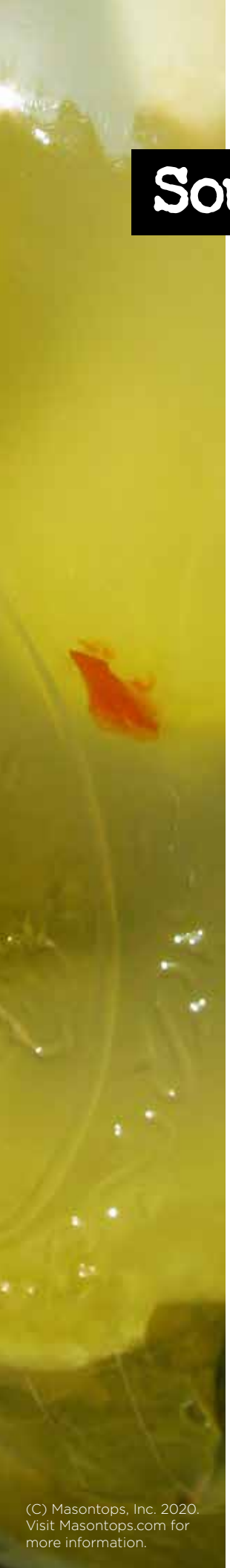
Methods:

Follow the instructions for Traditional Sauerkraut. The carrot should be peeled and grated on the large holes of a box grater. Add it, along with the curry powder, to the salted cabbage before pounding.

Sour Dill Pickles

Makes 1 quart

This is the classic pickle flavor, beloved by generations of children who never missed an opportunity to snatch one from the barrel in grandma's cellar. The flavor is fresh and tangy, without the harsh pucker a vinegared pickle imparts. For this recipe, it is essential to use the right kind of cucumbers. Slicing and English cucumbers from the store are not appropriate for fermenting - they are too watery and seedy, and will turn to mush. You will need to buy kirby cucumbers (sometimes called pickling cucumbers) and they must be very fresh. Plan on making these pickles in the summer when kirby cukes show up at your local farmer's market or produce stand.



Sour Dill Pickles

Ingredients:

1lb. kirby cucumbers (try to get the smallest ones you can, and all the same size)
1 grape leaf
1 bay leaf
1 teaspoon black peppercorns
4 cloves garlic, peeled
1 dill flower or 2 teaspoons dill seeds
Brine: 1 tablespoon + 1 teaspoon salt dissolved in 2 cups water

Methods:

Wash the cucumbers and scrub the blossom ends well. (The blossom end harbors pectic enzyme, which can soften the cucumbers during fermentation.) Soak them in an ice water bath for at least 1 hour while preparing the other ingredients.

In a clean 1 quart Mason jar, place the grape leaf, bay leaf, garlic cloves, and dill flower or seeds. The grape leaf contains tannins that help to keep the cucumbers crisp by neutralizing the pectic enzymes. If grape leaves are not available you may substitute: oak, sour cherry, or horseradish leaves; a second bay leaf; a pinch of green or black tea.

Carefully and strategically layer the cucumbers in the jar so you can fit as many as possible, without packing them down (which will cause bruising that can soften them). When the jar is full to the bottom of the neck, place a Pickle Pebble on top.

Stir the salt into the water until it is fully dissolved to make a brine, and then pour it into the jar until the cucumbers are fully submerged. Clean the rim of the jar and place a Pickle Pipe on top, then secure the ring. Write the date on the side of the jar with a felt-tip pen, then set the jar in a cool, dark place to ferment.

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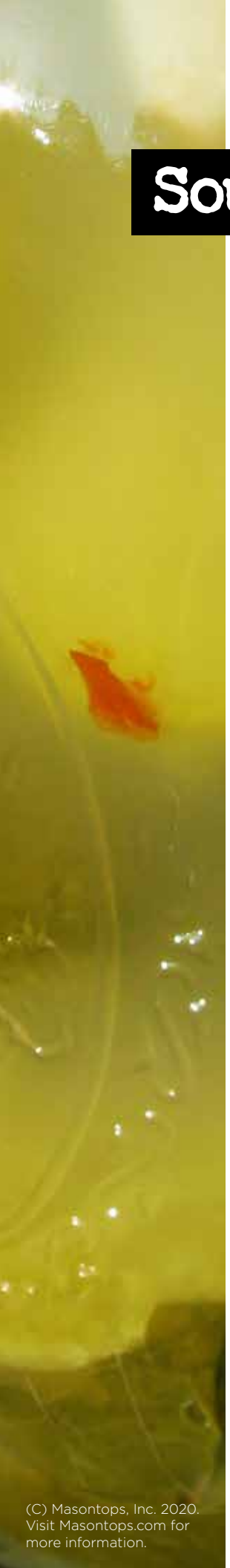


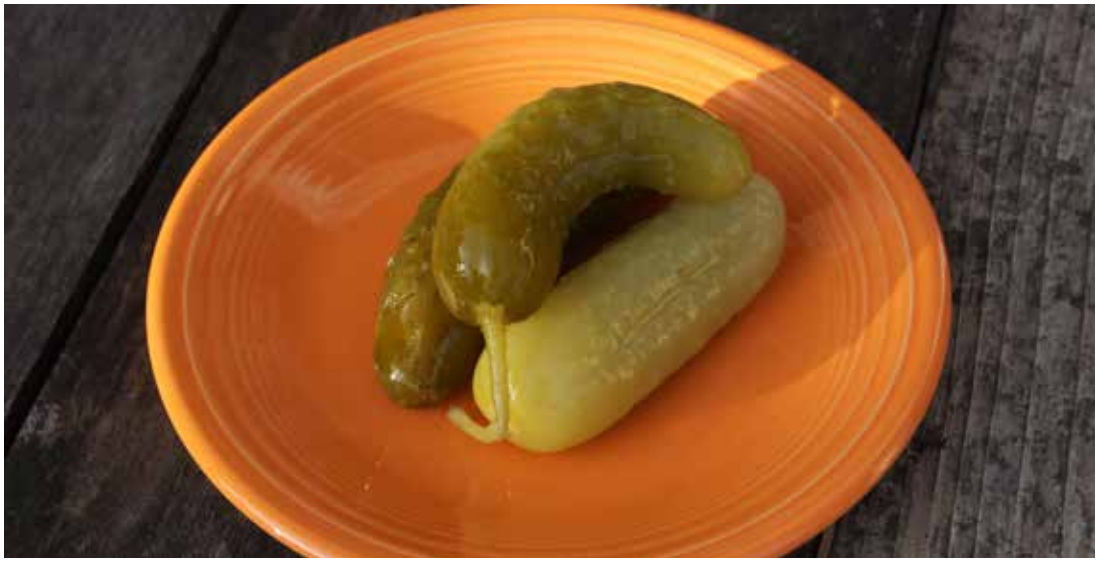
Sour Dill Pickles

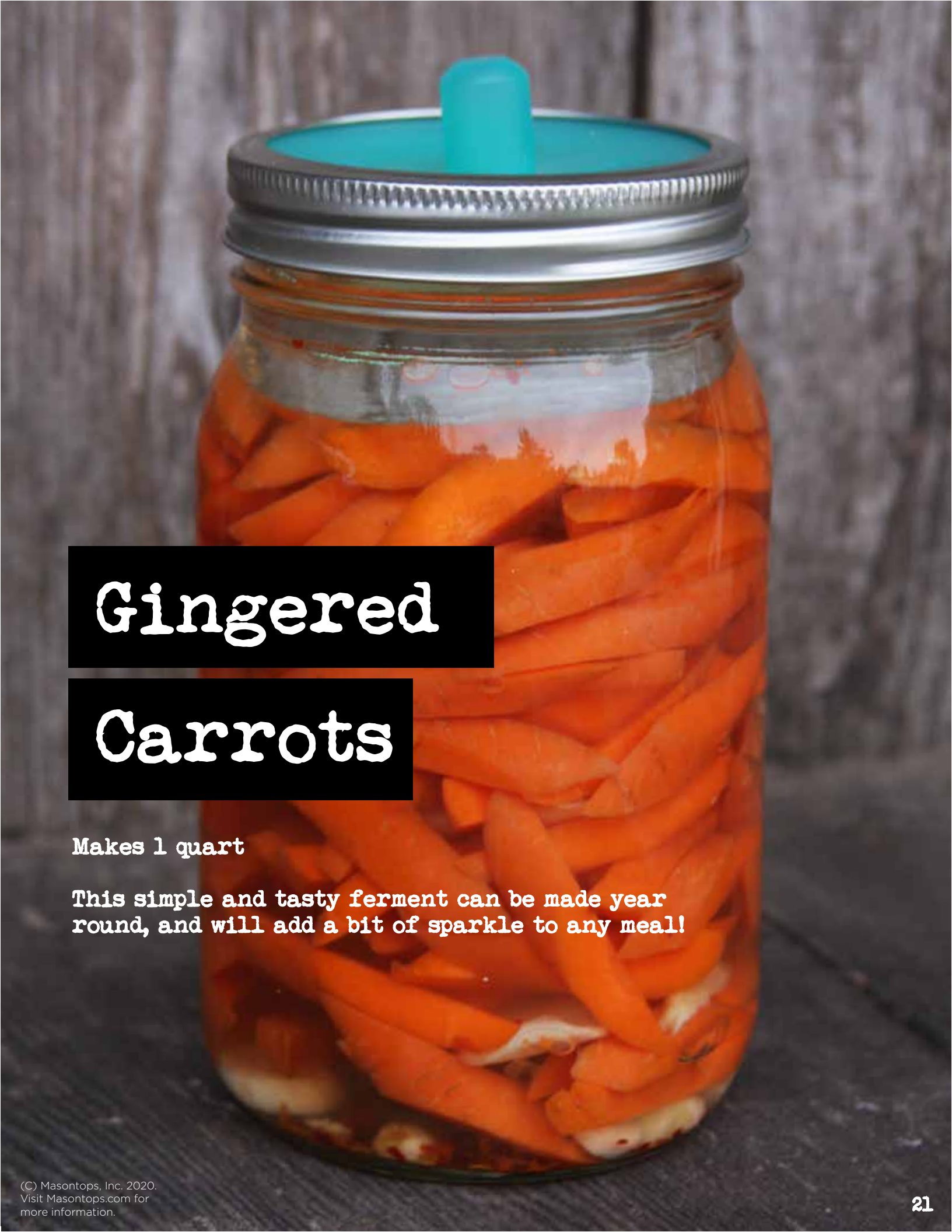
Fermentation should begin in a day or two. As it proceeds, you will notice these changes:

» Bubbles rise to the surface when jar is tapped or swirled.
» Brine turns cloudy.
» Color of cucumbers changes from bright to drab green.
» Cucumbers shrink and sink lower in the jar as the salt pulls moisture from them.
» Bubbles or foam appear on surface of brine.
» Cloudy sediment on bottom of jar, and sometimes on the pickles.

These are all normal signs of healthy fermentation! Brined pickles take 2-4 weeks to ferment, depending on how large the vegetables are and how sour you like them. After bubbling has ceased, wait another 5-7 days, then open the jar to sample a pickle. It should be pickled all the way through to the center and the brine should taste quite tangy and not very salty.

When the pickles have fermented to suit your taste, remove the Pickle Pipe and Pickle Pebble. Seal the jar with the Mason jar lid and ring, and store in the refrigerator.





Gingered Carrots

Makes 1 quart

This simple and tasty ferment can be made year round, and will add a bit of sparkle to any meal!

Gingered Carrots

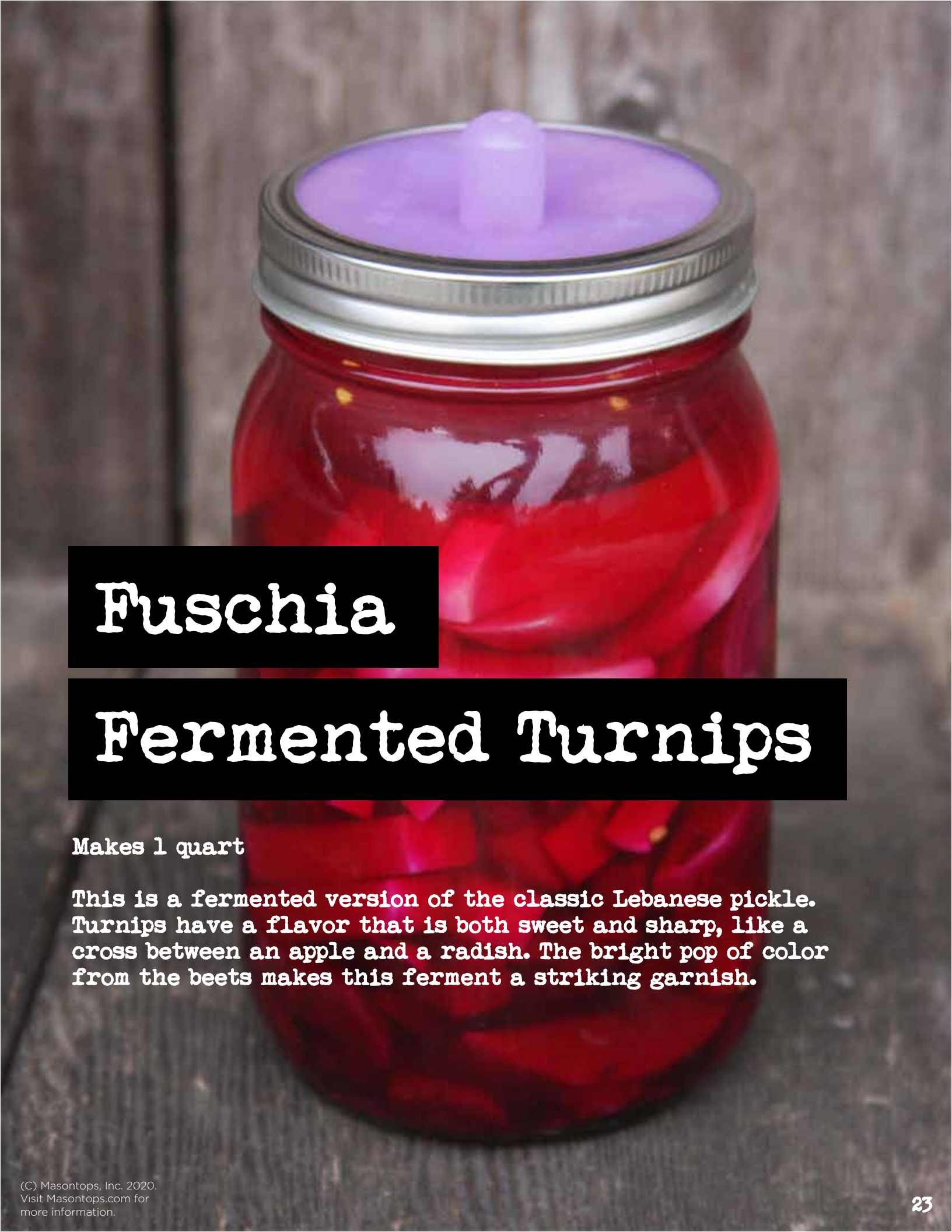
Ingredients:

4 large carrots (about 1lb.)
1 garlic clove
1/4 teaspoon red chili flakes
Fresh ginger root, about 2-3 inches
Brine: 2 teaspoons salt dissolved in 2 cups water

Methods:

Wash and peel the carrots. Cut them on the bias into wide, quarter-inch thick slices. Then cut each slice into quarter-inch thick sticks. Peel the ginger and slice it into paper-thin coins, until you have 1/4 cup. Peel and slice the garlic and place it in the bottom of a 1 quart Mason jar with the chili flakes. Layer the carrots and ginger in the jar, until you reach the bottom of the neck, then place a Pickle Pebble on top and add enough brine to submerge the carrots. Wipe the rim of the jar, add the Pickle Pipe, and secure the ring. Set in a dark place to ferment for 2-4 weeks.

When the carrots have fermented to your taste, remove the Pickle Pipe and Pickle Pebble. Seal the jar with the Mason jar lid and ring, and store in the refrigerator.



Fuschia Fermented Turnips

Makes 1 quart

This is a fermented version of the classic Lebanese pickle. Turnips have a flavor that is both sweet and sharp, like a cross between an apple and a radish. The bright pop of color from the beets makes this ferment a striking garnish.

Fuschia Fermented Turnips

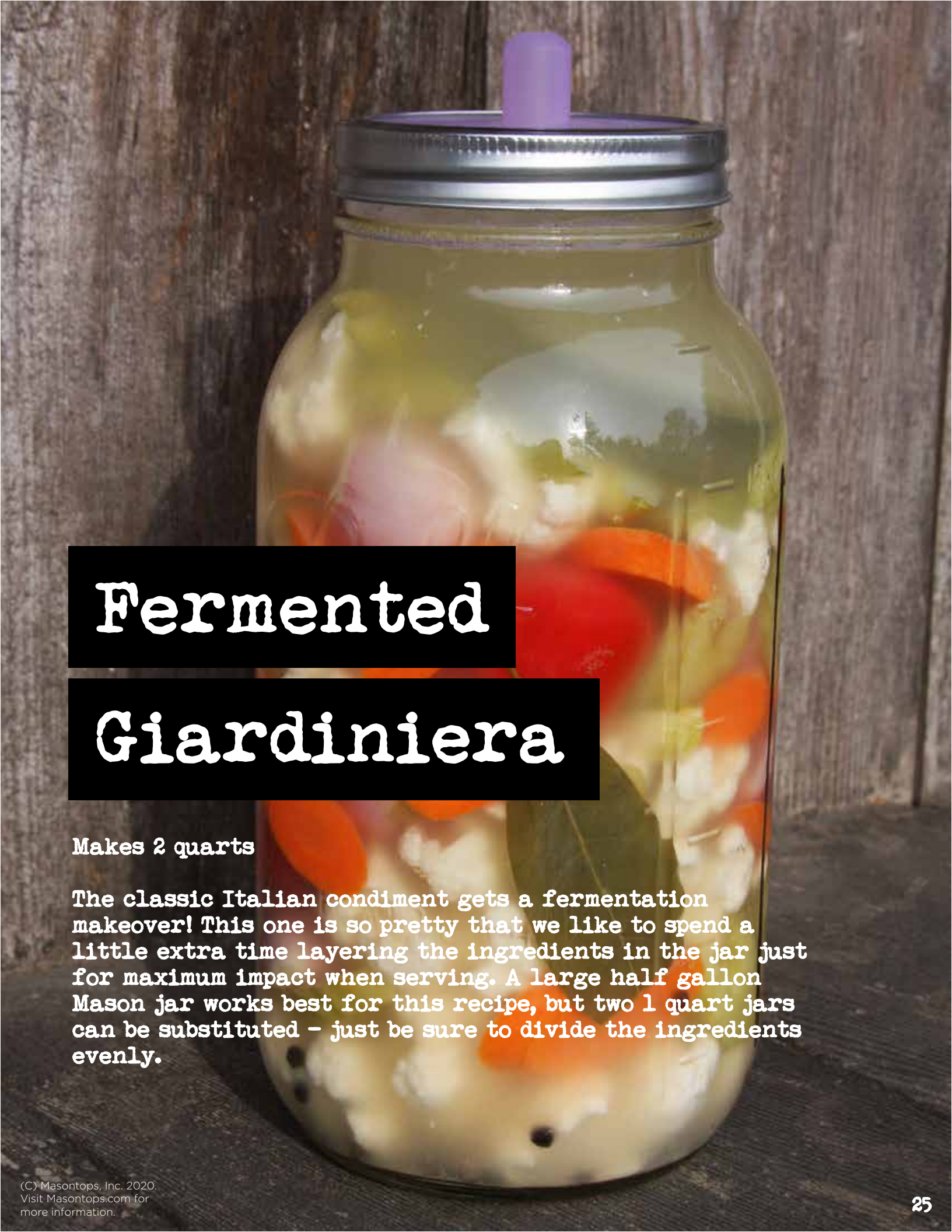
Ingredients:

3 medium turnips
1 small beet
2 cloves garlic
1/2 teaspoon red chili flakes
Brine: 2 teaspoons salt dissolved in 2 cups water

Methods:

Wash and peel the turnips and the beet, and remove both the stem and root ends. Slice across the vegetables to make half-inch thick disks. Cut each disc into sticks about a half inch wide. Peel the garlic cloves and slice them. Place them in the bottom of a 1 quart Mason jar with the chili flakes. Layer the sticks of turnips and beets, until the jar is full to the bottom of the neck. Place a Pickle Pebble on top and add brine until the veggies are submerged. Wipe the rim of the jar and add the Pickle Pipe. Secure the ring and set in a cool, dark place to ferment for 2-4 weeks.

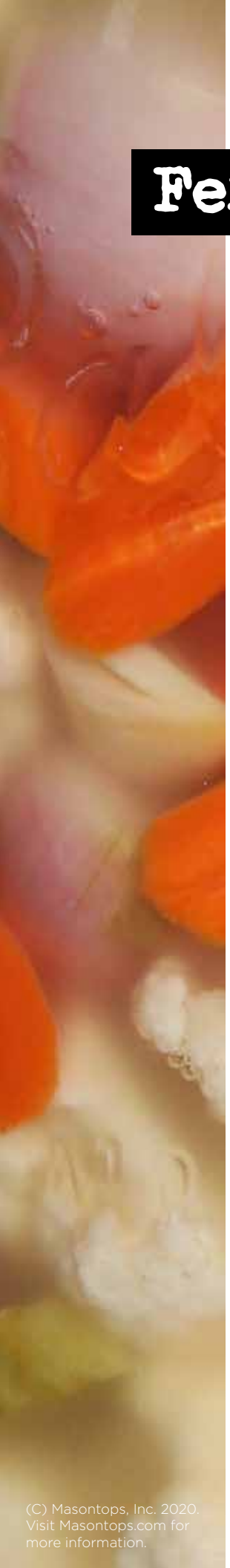
When the turnips have fermented to your taste, remove the Pickle Pipe and Pickle Pebble. Seal the jar with the Mason jar lid and ring, and transfer to the refrigerator for storage.



Fermented Giardiniera

Makes 2 quarts

The classic Italian condiment gets a fermentation makeover! This one is so pretty that we like to spend a little extra time layering the ingredients in the jar just for maximum impact when serving. A large half gallon Mason jar works best for this recipe, but two 1 quart jars can be substituted - just be sure to divide the ingredients evenly.



Fermented Gardiniera

Ingredients:

1 small head cauliflower
2 large carrots
2 large ribs celery
Handful very small shallots or pearl onions
4 cloves garlic
1-4 cherry bomb peppers or other chilis (optional, if you like it spicy)
2 bay leaves
1 teaspoon black peppercorns
Brine: 4 teaspoons salt dissolved in 4 cups water

Methods:

Wash the cauliflower well and remove all the leaves and the thick stem. Using your fingers and a knife, break the florets into small, bite-sized pieces. Peel the carrots and cut them into quarter-inch thick slices on the bias. Cut the celery ribs into half-inch thick chunks. Trim a thin slice off the root and neck end of the shallots or pearl onions and remove the papery skins. The chilis can be left whole, but take a thin slice off the top to remove the crown. Peel the garlic cloves and slice them in half.

Place the peppercorns and the bay leaves in the bottom of a half gallon Mason jar. Carefully layer all the vegetable ingredients, making sure everything is evenly distributed within the jar so that as the pickles are eaten, one can choose a little of everything. When the jar is full to the bottom of the neck, place a Pickle Pebble on top and add brine to cover the veggies. Wipe the rim of the jar and add a Pickle Pipe. Secure the ring and set the jar in a cool, dark place to ferment for 3-4 weeks.

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Fermented Gardiniera

When the vegetables are fermented to your taste, remove the Pickle Pipe and Pickle Pebble. Seal the jar with a Mason jar lid and ring and transfer to the refrigerator for storage.

White Kimchi

Makes 1 quart

In Korea, there are as many different styles of kimchi as there are families to make them! The spicy red kimchi may be the most well known, but non-spicy versions like this one are also much loved. Kimchi has its own unique method of preparation, adapted for napa cabbages that are more watery and less sweet than green cabbages. A pre-salting step is employed to wilt the cabbages and remove some of the excess water so that the final kimchi will not be too runny. There is also a preference for eating kimchi while it is still "young" and hasn't fermented very long, so one can enjoy the delicate flavor and crispness of the cabbage. Therefore, less salt and a shorter ferment time are called for.

White Kimchi

Ingredients:

1 medium napa cabbage (about 2lbs.)
2 tablespoons + 1 teaspoon salt, divided
1 large carrot
1 bunch scallions
1 teaspoon minced ginger
1 clove garlic, minced
1 teaspoon sugar

Methods:

With a sharp knife make a cut down the middle of the napa cabbage just through the root end, then use your hands to pull the two halves apart. Do this again through the root end of each half, separating them into quarters. Wash the napa quarters well under cool, running water. In a large bowl, sprinkle the napa quarters with the 2 tablespoons salt, making sure to get between all the leaves. Place a plate on top of the napa quarters and something heavy on top of the plate. Cover the bowl with a towel and let it rest for 2 hours, or until the napa quarters have softened and have released some of their juices.

Next, drain the napa and rinse it well under cool, running water. Squeeze the napa gently to remove excess liquid. Set each napa quarter on the cutting board and remove the core. Then slice the napa quarters into two-inch long pieces and return them to the large bowl.

Peel the carrot and grate it on the large holes of a box grater into a small bowl. Wash the scallions well and cut off the root ends. Cut them into thin slices on the bias, using both the white and green parts. Add them to the carrots along with the ginger, garlic, sugar, and 1 teaspoon salt. Toss all these ingredients in the small bowl to mix well.

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White Kimchi

Now add the aromatics to the large bowl of sliced napa cabbage and use your hands to toss all the ingredients together and rub the flavorings into the napa. Pack a 1 quart Mason jar as you would for sauerkraut, adding a couple handfuls at a time and gently pressing them down with the Pickle Packer. Stop when the jar is full to the shoulder. (If there is a little extra, drizzle it with toasted sesame oil for eating as a fresh salad - YUM!)

Place a Pickle Pebble on top of the kimchi. Wipe the rim and put the Pickle Pipe on top, then secure the ring. Set in a cool, dark place to ferment for a short time. Kimchi is best enjoyed fairly fresh, while the cabbage is still crisp and retains a bit of its sweetness. Napa can turn soft quickly, so don't let it go too long. 3-5 days of fermentation is usually sufficient.

About The Author

At Masontops, we are experts at creating high quality products at affordable prices. We wanted to make sure this guide was written with the same expertise and attention to detail that we put into our products. That's why we've enlisted the help of Sarah Miller of Killer Pickles.

Sarah Miller enjoys writing about fermentation and sharing made from scratch recipes on her blog KillerPickles.com. She also runs the Wild Fermentation Facebook group, with more than 50,000 worldwide members. When she is not busy fermenting all the things, Sarah can be found cataloguing the insects in her garden or joining her two boys and her husband in epic coloring sessions at their home in Portland, Oregon.

About Masontops

Masontops was started with a simple mission: to help people get the most out of their Mason jars by creating innovative, high quality products, sold at an affordable price.

Since you start with what you know, and since we loved fermenting our own foods, one of the first product categories we addressed was Mason jar fermentation. We had originally planned on making a couple fermentation products, and then moving on to another product category. What we discovered was an incredibly rich and vibrant community of fermenters, with a passion to learn, explore, and most importantly, share their experiences with others. We were hooked instantly, and nearly all of our product development to date has been focused on enhancing the Mason jar fermenting experience.

We believe strongly that fermenting should be accessible, affordable, and simple! Fermenting in Mason jars allows you to experiment in small batches with a fermenting vessel that you probably already have in your home – and we hope that our tools will help make this amazing food practice simple and fun, and appeal to more people who can enjoy it themselves, and share it with family and friends.

Thank you for letting us into your kitchen,

Masontops®

Phil Baron,
Founder of Masontops