

Beginner's Guide to Pickling & Fermentation

# A Beginner's Guide to **PICKLING & FERMENTING**



A Complete Cookbook for Pickling and Fermentation, including  
Delicious Homemade Recipes, from Kimchi and Sauerkraut,  
to Brined Pickles, Kombucha, Vegetables, and More!

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**Collin Bradford**

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# Introduction



Pickling was a family tradition that found its way back to me when I decided to set up my own kitchen and find better ways to preserve fresh produce. Back in my childhood, special homemade pickles were shared as a holiday norm, and my mother was famous for her amazing pickling skills. That experience had left me with great many pickling secrets that I have shared in this cookbook as well.

Today, even when there are tons of commercially-produced pickles and fermented goods available in the market, I still recommend home preservation techniques to anyone who wants to eat healthily. It may seem like extra work, but the taste of the homemade pickles has no parallel. You get to use the ingredients that you find fit for your health. Anyone can customize a recipe to match his or her needs. Plus, there are lots of options that you can try. And if you happen to have an all-in-one pickling and fermentation book like this one, you will find it much easier to pickle and ferment food at home.

The Beginner's Guide to Pickling and Fermentation brings you just the kind of easy- to-follow pickle recipes that you want. The book has two

sections; the first one is about pickling, and the second shares everything that you need to know about fermentation. Each section starts with the basics about the processes, and then there is a comprehensive collection of recipes that you can try. So, let's start pickling!

# Section 1: Pickling



# Chapter 1:

## All you need to know before starting pickling



There is nothing more satisfying than pickling your home-grown plant produce and enjoying it for months in or with different meals and entrées. It is a great way to preserve all those extra veggies in your refrigerator which may end up in the waste. With this pickling guide, you can now pickle almost any vegetable. It is super simple and easy. Some people believe that pickling is only for cucumbers; however, you can pickle almost anything. Pickling is a method of preserving food that involves either anaerobic fermentation or through keeping the food in vinegar. You can call a food pickled if its pH gets to 4.6 or lower. That is why during pickling, the harmful microbes cease to exist in the food and the pickled food enjoys a longer shelf life.

## What is Pickling Spice, and How Does it Work?

Any beginner's guide to pickling should contain information on the spices to pair with your pickled vegetables. You can either buy pickling spice or manufacture your own at home. During the pickling process, it will add flavor and seasoning to your pickled food. The types of herbs and spices used in each pickle recipe differ; however, they commonly include:

- Bay leaves
- Mustard seeds
- Peppercorns
- Dried chili peppers

While pre-made pickling spices are available, it's far easier to make your own. Doing that, you can adjust its seasonings as per your preferences.

## What Exactly Can I Pickle?

Pickling works well with a wide range of meals, but vegetables are the most popular. Vegetables with thick skin are the best. This helps the pickle keep its shape and remain crisp as a finished product. Some of my favorite pickled foods include:

- Cucumbers
- Zucchini
- Peppers
- Carrots
- Radishes
- Onions
- Fruits
- Eggs
- Herring
- Sausage

Because they have thicker skin and are shorter in length, certain cucumber varieties, such as the Kirby, are excellent for pickling. If you didn't

cultivate your own vegetables, look for them at a farmers' market. Vegetables grown commercially may have a waxy layer that interferes with the pickling process. If you must use supermarket vegetables, make every effort to thoroughly clean them. Although it's best to pickle produce that has just been gathered fresh, you may also use purchased vegetables that are about to ripen. Pickling is an excellent preservation and flavor alternative to traditional canning for homesteaders who have an overabundant harvest this fall.

Pickled foods give a lot of flavors to meals and snacks. Spices, sugar, and vinegar are expertly blended with fruits and vegetables to produce a crisp, firm texture and a pungent, sweet-sour flavor. Although food shops today provide a broad selection of pickles and relishes, many homemakers choose to produce their own pickled items when fresh fruits and vegetables are plentiful.

## Types of Pickles



Depending on the ingredients used and the techniques of preparation, several varieties of pickled items can be manufactured. There are four different types of classes:

### **Brined or fermented pickles**

These are the pickles that have been cured for one or more weeks in a brine (salt and water) solution. Curing alters the product's color, flavor, and texture. If the product is fermented, the lactic acid created during the fermentation process aids in its preservation. The acid in the form of vinegar is mixed in to preserve brined items that are cured but not fermented.

### **Vinegar Pickles**

Pickles, either fresh-packed or quick-process, are covered in boiling hot vinegar, spices, and seasonings. It's not uncommon for the product to be brined for many hours and then drained before being covered in the pickling liquid. These pickles are simple to make and have a tangy taste. Allowing fresh-packed or fast-pickles to sit for many weeks after sealing in jars improves their flavor.

### **Fruit pickles**

They are made by simmering whole or sliced fruits in a spicy, sweet-sour sauce made with vinegar or lemon juice.

### **Relishes**

They are produced by cooking chopped fruits and vegetables in a spicy vinegar solution until they reach the required consistency.

A pickled product's acidity level is just as crucial for safety as it is for taste and texture. In a recipe, never change the amounts of vinegar, food, or water. Only use tried and true recipes. You can help prevent *Clostridium botulinum*, a bacterium that generates a highly lethal poison in low acid meals, from growing by doing so.

### **Common Ingredients Used for Pickling**



Select tender veggies and firm fruit for your produce. Pickled pears and peaches may be somewhat underripe. Cucumbers of the pickling variety should always be used. If you use "table" or "slicing" cucumbers, don't expect high-quality pickles. Seed catalogues are a great place to look for cucumber varieties that are appropriate for pickling. If you're going to pickle cucumbers whole, look for ones that aren't waxed because brine solutions can't penetrate wax. For gherkins, use 1 1/2-inch cucumber; for dills, use 4-inch cucumbers. Relishes and bread-and-butter style pickles should be made with odd-shaped and ripe cucumbers.

Plan to pickle the vegetables and fruit produce within 24 hours of harvesting them for the best results. If the product can't be used right away, keep it refrigerated or spread out somewhere cold and well-ventilated. Cucumbers decay quickly, especially at room temperature, so this is very crucial.

Sort the fruits and vegetables just before pickling and choose the size that best suits the recipe. Wash well, particularly around the stems. Soil trapped

could be a source of bacteria that causes pickles to soften. Make sure the blossom end of the vegetables has a 1/16-inch slice removed. Enzymes found in the blooms might induce softening as well.

Do not eat any pickled fruit or vegetable that have even a smidgeon of mold on them. Proper processing kills possible spoiling organisms but does not eliminate the off-flavor that mold development on the fruit or vegetables may have already caused.

### **Salt**

For pickling, it should be pure granulated salt, such as "pickling" or "canning" salt. These are available at supermarkets, hardware, and farm supply stores. Anti-caking agents in other salts might cause the brine to become murky. Salt concentrations in fermented pickles and sauerkraut should not be changed. Correct salt and other component balances are essential for proper fermentation.

### **Vinegar**

Use 5-per cent acidity (50 grain) cider or white vinegar, which is the acidity of most commercially bottled vinegar. The flavor and perfume of cider vinegar are pleasant, but they can discolor white or light-colored fruits and vegetables. When a clear hue is desired, white distilled vinegar is frequently used for onions, cauliflower, and pears. In pickling, do not use homemade vinegar or vinegar with unknown acidity. If the recipe calls for it, dilute the vinegar. If you want a less sour product, instead of diluting the vinegar, add sugar.

### **Sugar**

Unless the recipe specifies brown sugar, use white sugar. Although white sugar provides a product with a brighter hue, brown sugar has a stronger flavor. If you're going to use a sugar replacement, stick to the instructions that came with the product. Heat and/or storage can affect the flavor of sugar substitutes; thus, they're normally avoided. Sugar also aids in the

plumping and firming of the pickles.

### **Spices**

Fresh whole spices are best for the best quality and flavor in pickles. Spice powders have the potential to discolor and cloud the product. The pickles will brown less if you tie full spices loosely in a clean white fabric or cheesecloth bag. Remove this spice bag from the pickle before packing the jars. Spices quickly deteriorate and lose their pungency when exposed to heat and humidity. That is why store any remaining spices in an airtight container in the refrigerator.

### **Water**

Hard water can interfere with the development of acid in brined pickles, preventing them from curing properly. To soften hard water, boil it for 15 minutes and then leave it covered for 24 hours. Any filth that appears should be removed. Pour water slowly from the containers to avoid disturbing the sediment. Remove the sediment and throw it away. The water is now safe to drink. Pickles can also be made with distilled water, but it is more expensive.

### **Lime and alum**

Lime and alum are not required for crisp pickles when high-quality ingredients are utilized, and modern processes are followed. A safer approach for preparing crisp pickles is to soak cucumbers in ice water for four to five hours before pickling. Pickle Crisp®, a calcium chloride-based product, is another safe choice for firming pickles; follow the manufacturer's directions. The use of alum in pickling is no longer recommended, and improper lime removal may raise the risk of botulism.

The calcium in lime improves pickle stiffness. Look for food-grade pickling lime on the shelves of your grocery store if you wish to use lime. It is not recommended to use agricultural or burnt lime. Fresh cucumbers can be steeped for 12 to 24 hours in a lime-water solution before being

pickled with food-grade lime. To prepare safe pickles, however, excess lime absorbed by the cucumbers must be eliminated. To remove excess lime, drain the solution, rinse, and re-soak the cucumbers in water for 1 hour. Then rinse and repeat two more times.

### **How is Pickling Done?**

All pickles and relishes must be processed in order to kill yeasts, mold, and bacteria that could cause the product to decay, as well as inactivate enzymes that could impact the color, flavor, and texture of pickled foods. A seal is required to keep other bacteria out of the jars. Pickles and relishes contain a lot of acid. This acid could be due to the huge amount of vinegar applied. Lactic acid bacteria create acid naturally during the fermentation process in brined or fermented pickles. They're canned in a boiling water bath canner, just like other high-acid items.

All canning jars should be thoroughly washed with soapy water, and then rinsed and kept warm. Jars that will be treated in a boiling water bath canner for less than 10 minutes must be sterilized by boiling for 10 minutes before filling. During the processing of jars in a boiling water bath canner for 10 minutes or longer, they will be sterilized. Use new two-piece lids and treat them according to the manufacturer's recommendations.

Fill the glass jar halfway with hot water and carefully place them in the canner on a rack. To cover the jars, the water should be at least 1 inch deep. In the canning pot, heat the water to a boil, covered. Begin counting down the processing time as soon as the water begins to boil. While processing, keep the water boiling for the time specified in the recipe. If no time is specified, process the pickled product for at least 10 minutes.

Always keep an eye out for indicators of spoiled food. Examine a container well before opening it. A bulging lid or leakage could indicate that the contents have gone bad. Look for other indicators of deterioration while opening a jar, such as spurting liquid, an unpleasant stench, a change

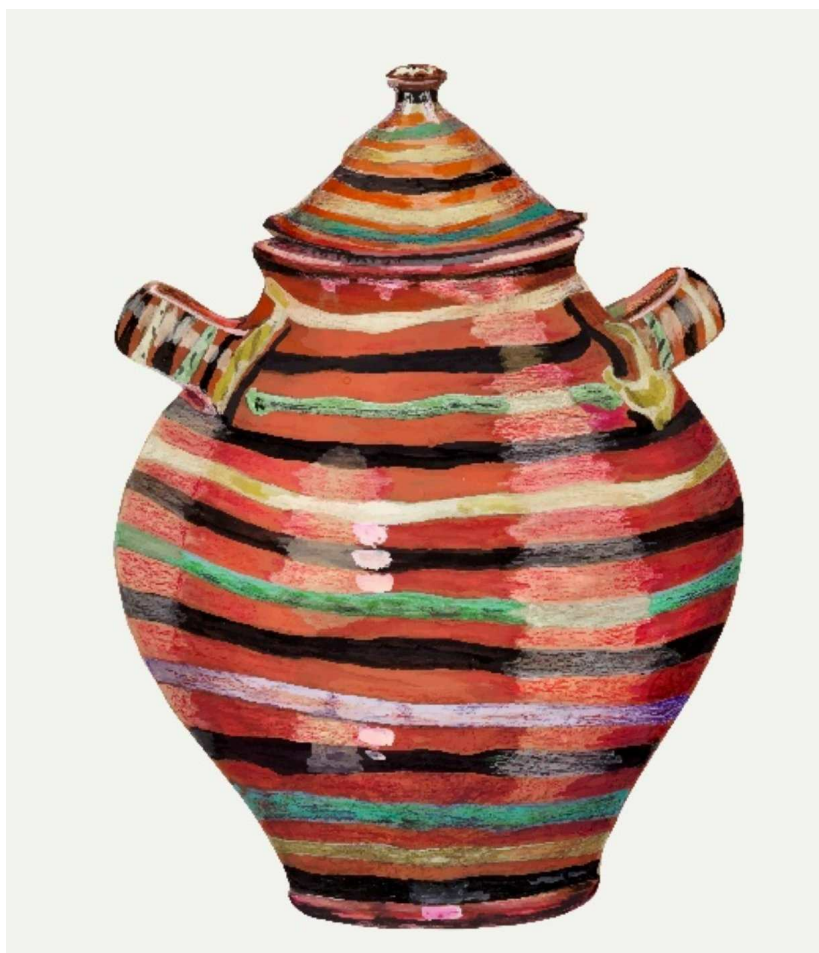
in color or odd softness, and mushiness or slipperiness of the product. Do not sample the contents if there is even the slightest sign of deterioration. Dispose of the food in a way that neither humans nor animals can eat it.

# Chapter 2:

## The Pickler's Kitchen

To pickle food like a pro, you must have all the essentials to process all the ingredients. The more pickle-friendly tools and setup you have in your kitchen, the easier this job becomes for you. I recommend the following few basic items in your kitchen before you start pickling.

### Fermentation Containers and Weights



Large-sized stoneware crocks, glass jars, or food-grade plastic containers can be used to ferment pickles and sauerkraut. When fermenting pickles or sauerkraut, avoid using aluminum, copper, brass, galvanized, or iron vessels. The container should be large enough to leave several inches of room between the food and the container's top. For every 5 pounds of fresh

veggies, a 1-gallon container is usually required.

### **Glass Lid**

After being placed in the container and coated with brine, the vegetables must be completely submerged in the brine. A thick plate or a glass lid that fits inside the container can be used. If more weight is needed, a glass jar(s) filled with water and sealed can be placed on top of the plate or lid. The vegetables should be covered in 1 to 2 inches of brine. Turkey packaging freezer bags are the correct size for 5-gallon containers. Securely close the end. Then place this full bag on top of the vegetables as a weight. If the bags are accidentally ruptured, filling them with brine is a precaution.

### **Non-Reactive Cooking Utensils**

Pickling liquids should be cooked in stainless steel, aluminum, glass, or unchipped enamelware saucepan for fresh pack pickles. Copper, brass, galvanized, or iron utensils should not be used. These metals can react with salts or acid in the pickles, causing undesired color changes. Use stoneware, glass, stainless steel, aluminum, or unchipped enamelware crocks, saucepans, or bowls for short-term brining or soaking. The identical containers can be used for soaking veggies in lime, except for the metal. Lime corrodes aluminum containers and can raise the amount of aluminum in pickles. Household scales will be required if the recipes call for ingredients to be measured by weight. They're required while preparing sauerkraut to ensure that the salt and shredded cabbage quantities are correct.

### **A canning kettle.**

A large-sized, deep pot with a minimum capacity of 12 quarts is ideal for canning. It's made of stainless steel, so it's non-reactive and may be used outside of the water bath.

### **Rack for canning**

A rack at the bottom of every canning kettle is required. Jars with a jingling bottom are more likely to crack (and cracked jars are unbelievably sad). Use a footed cake rack if the kettle you're using doesn't have its own rack. If you're in a hurry, fold a kitchen towel and set it in the bottom of the pot: it'll rise like a phantom, but it'll still cushion the jars while they're boiling.

### **Various shapes and sizes of canning jars**

Make a match between the food and the jar: Fill tall Ball jars with pickle spears and dilly beans, and lovely tulip-shaped Wick jars with jams and relishes. Because jars may be reused over and over, the investment pays for itself quickly. By offering a refill, you can get your friends and family to return your jars.

### **Lifter and funnel for jars**

At the very least, getting the hot preserves into jars is a mess. A jar funnel will help you avoid spills and keep your work area clean. Jar lifters are necessary not only for standing your full jars upright in the canning kettle but also for retrieving them from the boiling water after processing. If you're new to canning, a kit that contains jars, a jar lifter, and a funnel is a good place to start.

### **Labels**

Always label pickle jars as you can easily mix them up and some of them might look the same. Sticker jar labels are easily available in the market, buy them and use them whenever necessary.

# Chapter 3: Vegetable Pickle Recipes



# Cucumber Pickle



***Preparation time: 15 minutes***

***Pickling time: 24 hours***

***Total time: 24 hours 15 minutes***

***Servings: 16***

***How to Prepare***

1. For brine: in a large-sized container, add vinegar, sugar, coriander seeds, and salt. Seal it tightly.
2. Shake the container vigorously until the sugar and salt are dissolved completely.
3. Add water and mix well.
4. In 1 (1-quart) sterilized jar, place the cucumber, garlic, and dill sprigs.
5. Place the vinegar mixture over cucumber mixture, leaving about ½-inch space from the top.
6. Cover the jar and tap on the counter to release any air bubbles.
7. Refrigerate for 24 hours before serving.
8. This pickle can be preserved in refrigerator for up to 1 month.

# Asparagus Pickle



***Preparation time: 15 minutes***

***Cooking time: 5 minutes***

***Pickling time: 24 hours***

***Total time: 48 hours 20 minutes***

***Servings: 48***

## *How to Prepare*

1. In a large-sized, non-reactive saucepan, add vinegar, sugar, salt, and turmeric over medium-high heat and cook until boiling, stirring frequently.
2. Meanwhile, in the bottom of 6 (1-pint) sterilized jars, divide the asparagus, onion, garlic, celery seeds, and mustard seeds evenly.
3. Place the hot vinegar mixture over the asparagus mixture, leaving about ½-inch space from the top.
4. Set aside to cool to room temperature.
5. Cover the jars and tap on the counter to release any air bubbles.
6. Refrigerate for 24-48 hours before serving.
7. This pickle can be preserved in refrigerator for up to 1 month.

# Pickled Red Cabbage



*Preparation time: 15 minutes*

*Pickling time: 24 hours*

*Total time: 24 hours 15 minutes*

*Servings: 6*

## *How to Prepare*

1. In a large-sized ceramic bowl, add the shredded cabbage with remaining ingredients and mix well.
2. Cover the bowl and place onto a counter for at least 2-6 hours, stirring occasionally.
3. Transfer the cabbage into 1 (1-pint) sterilized jar.
4. Cover the jar and tap on the counter to release any air bubbles.
5. Refrigerate 24 hours before serving.
6. This pickle can be preserved in refrigerator for up to 1 month.

# Carrot Pickle



*Preparation time: 15 minutes*

*Cooking time: 5 minutes*

*Pickling time: 24 hours*

*Total time: 48 hours 20 minutes*

*Servings: 8*

## *How to Prepare*

1. In a small-sized, non-reactive saucepan, add water, vinegar, garlic, sugar, bay leaves, salt, and peppercorns over medium-high heat and cook until boiling, stirring frequently.
2. Meanwhile, in the bottom of 1 (1-pint) sterilized jar, place the carrot sticks.
3. Place the hot vinegar mixture over the carrot sticks, leaving about ½-inch space from the top.
4. Set aside to cool to room temperature.
5. Cover the jar and tap on the counter to release any air bubbles.
6. Refrigerate for 24 hours before serving.
7. This pickle can be preserved in refrigerator for up to 1 month.

# Pickled Beets



***Preparation time: 15 minutes***

***Cooking time: 30 minutes***

***Pickling time: 24 hours***

***Total time: 48 hours 45 minutes***

***Servings: 16***

## ***How to Prepare***

1. In a large-sized saucepan of boiling water, cook the beets for about 20-25 minutes.

2. Drain the beets and set aside to cool.
3. In a small-sized, non-reactive saucepan, add water, vinegar, sugar, mustard seeds, salt, and peppercorns over medium-high heat and cook until boiling, stirring frequently.
4. Meanwhile, in the bottom of 1 (1-quart) sterilized jar, place the beet slices.
5. Place the hot vinegar mixture over the beet slices, leaving about ½-inch space from the top.
6. Set aside to cool to room temperature.
7. Cover the jar and tap on the counter to release any air bubbles.
8. Refrigerate for 24 hours before serving.
9. This pickle can be preserved in refrigerator for up to 1 month.

# Pickled Radishes



***Preparation time: 15 minutes***

***Cooking time: 5 minutes***

***Pickling time: 24 hours***

***Total time: 48 hours 20 minutes***

***Servings: 12***

## ***How to Prepare***

1. In a small-sized, non-reactive saucepan, add water, vinegar, sugar, mustard seeds, salt, and peppercorns over medium-high heat and

cook until boiling, stirring frequently.

2. Meanwhile, into the bottom of 4 (12-ounce) sterilized jars, divide the radish slices.
3. Place the hot vinegar mixture over the radish slices, leaving about ½-inch space from the top.
4. Set aside to cool to room temperature.
5. Cover the jars and tap on the counter to release any air bubbles.
6. Refrigerate for 24 hours before serving.
7. This pickle can be preserved in refrigerator for up to 1 month.

# Zucchini Pickle



*Preparation time: 20 minutes*

*Refrigeration time: 2 hours*

*Cooking time: 5 minutes*

*Pickling time: 24 hours*

*Total time: 26 hours 20 minutes*

*Servings: 16*

*How to Prepare*

1. Arrange a large-sized colander over a bowl.

2. In the colander, place the zucchini, shallots, onion, and salt. Toss to coat well.
3. Cover the bowl of zucchini mixture and refrigerate for at least 2 hours, tossing twice.
4. Remove the bowl of zucchini mixture from refrigerator.
5. With paper towels, pat dry the zucchini mixture.
6. In a small-sized, non-reactive saucepan, add vinegars and sugar over medium-high heat and cook until boiling, stirring frequently.
7. Meanwhile, in the bottom of 1 (1-quart) sterilized jar, place the zucchini mixture, dill sprigs, chili pepper and mustard seeds.
8. Place the hot vinegar mixture over the zucchini mixture, leaving about ½-inch space from the top.
9. Set aside to cool to room temperature.
10. Cover the jar and tap on the counter to release any air bubbles.
11. Refrigerate for 24 hours before serving.
12. This pickle can be preserved in refrigerator for up to 1 month.

# Okra Pickle



***Preparation time: 15 minutes***

***Pickling time: 2 weeks***

***Cooking time: 5 minutes***

***Total time: 2 weeks 20 minutes***

***Servings: 32***

## ***How to Prepare***

1. In a small-sized, non-reactive saucepan, add water, vinegar and salt over medium-high heat and cook until boiling, stirring frequently.

2. Meanwhile, in the bottom of 4 (1-pint) sterilized jars, evenly divide the okra pods, dill sprigs, chiles, garlic, mustard seeds, and peppercorns.
3. Place the hot vinegar mixture over the okra mixture, leaving about ½-inch space from the top.
4. Set aside to cool to room temperature.
5. Cover the jars and tap on the counter to release any air bubbles.
6. Place the jars in a cool, dry place for 2 weeks.
7. This pickle can be preserved in refrigerator for up to 1 month.

# Vidalia Onion Pickle



***Preparation time: 15 minutes***

***Cooking time: 5 minutes***

***Pickling time: 24 hours***

***Total time: 24 hours 20 minutes***

***Servings: 12***

## ***How to Prepare***

1. In a small-sized non-reactive saucepan, add, vinegar, water, sugar, and salt over medium-high heat. Cook until boiling, stirring

frequently.

2. Meanwhile, in the bottom of 1 (1-quart) sterilized jar, place the onion slices.
3. Place the hot vinegar mixture over the onion slices, leaving about ½-inch space from the top.
4. Set aside to cool to room temperature.
5. Cover the jar and tap on the counter to release any air bubbles.
6. Refrigerate for 24 hours before serving.
7. This pickle can be preserved in refrigerator for up to 1 month.

# Red Onion Pickle



***Preparation time: 15 minutes***

***Cooking time: 5 minutes***

***Pickling time: 24 hours***

***Total time: 24 hours 20 minutes***

***Servings: 8***

## ***How to Prepare***

1. In a small-sized non-reactive saucepan, add vinegar, water, maple syrup, and salt\_over medium-high heat and cook until boiling,

stirring frequently.

2. Meanwhile, in the bottom of 1 (1-pint) sterilized jar, place the onion slices.
3. Place the hot vinegar mixture over the onion slices, leaving about ½-inch space from the top.
4. Set aside to cool to room temperature.
5. Cover the jar and tap on the counter to release any air bubbles.
6. Refrigerate for 24 hours before serving.
7. This pickle can be preserved in refrigerator for up to 1 month.

# Pickled Garlic



***Preparation time: 15 minutes***

***Cooking time: 5 minutes***

***Pickling time: 24 hours***

***Total time: 24 hours 20 minutes***

***Servings: 8***

## ***How to Prepare***

1. In a small-sized, non-reactive saucepan, add water, vinegar, honey, and salt over medium-high heat and cook until boiling, stirring

frequently.

2. Meanwhile, in the bottom of 1 (1-pint) sterilized jar, place the garlic cloves.
3. Place the hot vinegar mixture over the garlic cloves, leaving about ½-inch space from the top.
4. Set aside to cool to room temperature.
5. Cover the jar and tap on the counter to release any air bubbles.
6. Refrigerate for 24 hours before serving.
7. This pickle can be preserved in refrigerator for up to 1 month.

# Pickled Jalapeños



*Preparation time: 15 minutes*

*Pickling time: 24 hours*

*Cooking time: 5 minutes*

*Total time: 24 hours 20 minutes*

*Servings: 8*

## *How to Prepare*

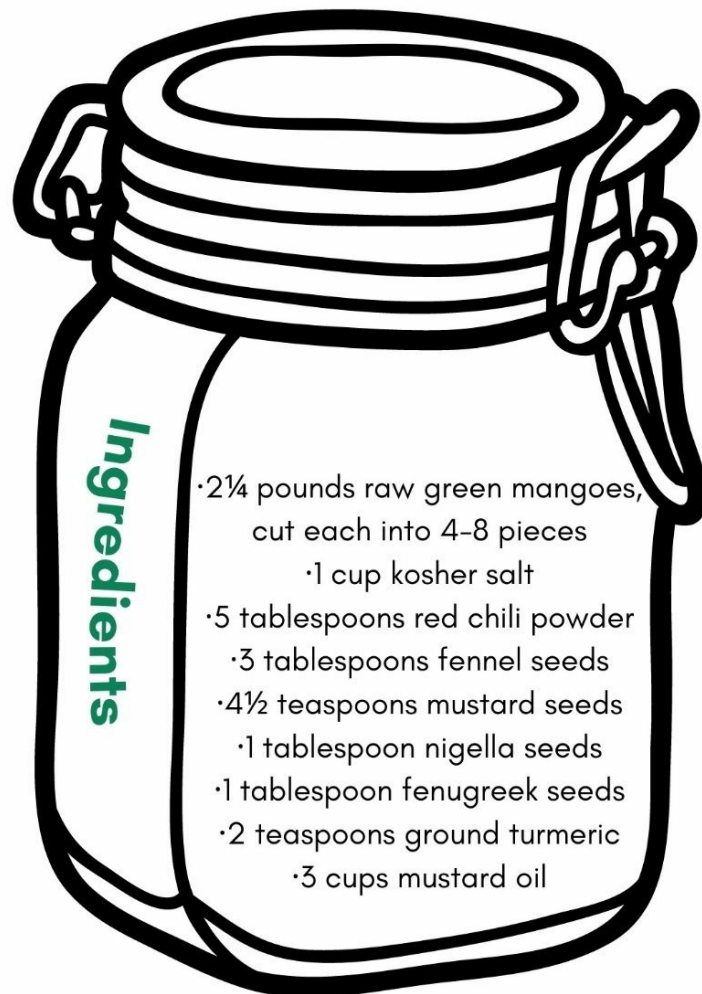
1. In a small-sized, non-reactive saucepan, add vinegar, water, garlic, sugar, oregano, and salt over medium-high heat and cook until boiling, stirring frequently.

2. Meanwhile, in the bottom of 2 (½-pint) sterilized jars, divide the jalapeño rings.
3. Place the hot vinegar mixture over the jalapeño rings, leaving about ½-inch space from the top.
4. Set aside to cool to room temperature.
5. Cover the jars and tap on the counter to release any air bubbles.
6. Refrigerate for 24 hours before serving.
7. This pickle can be preserved in refrigerator for up to 1 month.

# Chapter 4: Fermented Pickle Recipes



# Fermented Mango Pickle



***Preparation time: 15 minutes***

***Cooking time: 2 minutes***

***Fermentation time: 2 weeks***

***Total time: 2 weeks 17 minutes***

***Servings: 10***

## ***How to Prepare***

1. In the bottom of 1 (1-quart) sterilized jar, place the mango pieces and salt. Mix well.

2. Cover the jar tightly and leave out in the sun for 1 week.
3. In a small-sized bowl, blend together the spices.
4. After 1 week, drain off any water from mangoes.
5. Into the jar, add the spice mixture and mix well.
6. In a small-sized wok, heat mustard oil and heat until it smokes.
7. Remove the wok of oil from heat and set aside to cool completely.
8. Place the cooled oil over mangoes to cover completely.
9. Cover the jar tightly and leave out in the sun for 2 weeks, stirring well after every 1 day.
10. This fermented pickle can be preserved in refrigerator up to 1 year.

# Fermented Lime Pickle



***Preparation time: 20 minutes***

***Cooking time: 2 minutes***

***Fermentation time: 4 weeks***

***Total time: 4 weeks 22 minutes***

***Servings: 16***

## ***How to Prepare***

1. In a large-sized bowl, add limes pieces, garlic, ginger, lime juice, sugar, paprika, red chili powder, turmeric, asafetida and salt and mix

well.

2. For temper: heat the oil in a small-sized saucepan over medium heat and toast the mustard seeds for about 30-60 seconds, stirring continuously.
3. Add in the nigella, fennel, fenugreek, and cumin seeds. Toast for about 30-60 seconds, stirring continuously.
4. Remove the saucepan of seed mixture from heat and stir in curry leaves.
5. Transfer the seed mixture into the bowl of lime mixture and mix well.
6. In the bottom of 1 (1-quart) sterilized jar, place the lime mixture, leaving about 1-inch space from the top.
7. With the lid, cover the jar tightly.
8. Set the jar aside at a cool room temperature for 2-4 weeks, turning the jar upside down after every 2 days.
9. This fermented pickle can be preserved in the refrigerator for up to 1 month.

# Fermented Lemon Pickle



***Preparation time: 15 minutes***

***Cooking time: 13 minutes***

***Fermentation time: 1 week***

***Total time: 1 week 28 minutes***

***Servings: 16***

## ***How to Prepare***

1. In a small-sized saucepan, add lemons, salt, and enough water to cover over medium-high heat and cook until boiling.

2. Boil for about 8 minutes.
3. Drain the lemons and set aside to cool.
4. After cooling, cut each lemon into slices and then remove the seeds.
5. Sprinkle the lemons evenly with salt.
6. In the bottom of 1 (1-quart) sterilized jar, place the lemons and oil, leaving about 1-inch space from the top.
7. With the lid, cover the jar loosely.
8. Set the jar aside at a cool room temperature for 1 week, turning the jar upside down after every day.
9. This fermented pickle can be preserved in refrigerator for up to 1 month.

# Fermented Cucumber Pickle



*Preparation time: 15 minutes*

*Fermentation time: 4 weeks*

*Total time: 4 weeks 15 minutes*

*Servings: 30*

## *How to Prepare*

1. **For the brine:** in a bowl, add the water and salt. Stir until the salt dissolves completely.
2. In the bottom of 2 (1-quart) sterilized jars, place half of each bay leaves, garlic, dill, mustard seeds, peppercorns, and red pepper

flakes.

3. Place half of the cucumbers on top.
4. Repeat the layers.
5. Place the brine over cucumbers, leaving about 1-inch space from the top.
6. With a fermenting weight, weigh down the cucumbers.
7. With a clean cloth, cover the mouth of each jar loosely and then secure it with a rubber band.
8. Set the jar aside at a cool room temperature for 3-4 weeks.
9. Burp the jar of pickle daily to release excess pressure.
10. This fermented pickle can be preserved in refrigerator for up to 1 year.

# Fermented Zucchini Pickle



*Preparation time: 15 minutes*

*Fermentation time: 7 days*

*Total time: 7 days 15 minutes*

*Servings: 8*

## *How to Prepare*

1. **For the brine:** in a bowl, add the water and salt. Stir until the salt dissolves completely.
1. In the bottom of 2 (1-quart) sterilized jars, divide the zucchini, dill, chilies, garlic and coriander seeds evenly.

2. Place the brine over the zucchini mixture, leaving about 1-inch space from the top.
3. With the lid, cover each jar loosely.
4. Set the jar aside at a cool room temperature for 5-7 days.
5. Burp the jar of pickles daily to release excess pressure.
6. This fermented pickle can be preserved in refrigerator for up to 7 months.

# Fermented Green Beans Pickle



***Preparation time: 15 minutes***

***Cooking time: 5 minutes***

***Canning time: 10 minutes***

***Fermentation time: 3 weeks***

***Total time: 3 weeks 30 minutes***

***Servings: 24***

***How to Prepare***

1. In a small-sized non-reactive saucepan, add vinegar, water, garlic

and salt over medium-high heat and cook until boiling, stirring frequently.

2. Meanwhile, in the bottom of 6 (½-pint) sterilized jars, divide the green beans, dill sprigs, and red pepper flakes.
3. Place the hot vinegar mixture over the green beans, leaving about ½-inch space from the top.
4. Slide a small-sized knife around the insides of each jar to remove air bubbles.
5. Wipe any trace of food off the rims of jars with a clean, moist kitchen towel.
6. Close each jar with a lid and screw on the ring.
7. Arrange the jars in a boiling water canner and process for about 10 minutes.
8. Remove the jars from water canner and place onto a wood surface several inches apart to cool completely.
9. After cooling with your finger, press the top of each jar's lid to ensure that the seal is tight.
10. Set the jar aside at a cool room temperature for 3 weeks.
11. This fermented pickle can be preserved in refrigerator for up to 2 weeks.

# Fermented Cherry Tomato Pickl



***Preparation time: 15 minutes***

***Cooking time: 5 minutes***

***Fermentation time: 7 days***

***Total time: 7 days 20 minutes***

***Servings: 16***

## ***How to Prepare***

1. In a small-sized saucepan, add water and salt over medium-high heat and cook until boiling, stirring frequently.

2. Remove the saucepan of salted water from heat and set aside to cool slightly.
3. Meanwhile, in the bottom of 1 (1-quart) sterilized jar, place the tomatoes, basil, and garlic.
4. Place the salted water over the tomatoes, leaving about 1-inch space from the top.
5. With a fermenting weight, weigh down the tomatoes.
6. With a clean cloth, cover the mouth of each jar loosely and then secure it with a rubber band.
7. Set the jar aside at a cool room temperature for 5-7 days.
8. Burp the jar of pickles daily to release excess pressure.
9. This fermented pickle can be preserved in refrigerator for up to 6 months.

# Fermented Green Tomato Pickle



***Preparation time: 15 minutes***

***Cooking time: 5 minutes***

***Fermentation time: 6 weeks***

***Total time: 6 weeks 20 minutes***

***Servings: 16***

## ***How to Prepare***

1. In a small-sized saucepan, add water and salt over medium-high heat. Cook until boiling, stirring frequently.

2. Remove the saucepan of salted water from heat and set aside to cool slightly.
3. Meanwhile, in the bottom of 1 (1-quart) sterilized jar, place the tomatoes, basil, and garlic.
4. Place the salted water over the tomatoes, leaving about 1-inch space from the top.
5. With a fermenting weight, weigh down the tomatoes.
6. With a clean cloth, cover the mouth of each jar loosely, and then secure it with a rubber band.
7. Set the jar aside at a cool room temperature for 2-6 weeks.
8. Burp the jar of pickle daily to release excess pressure.
9. This fermented pickle can be preserved in refrigerator for up to 6 months.

# Fermented Red Onion Pickle



***Preparation time: 15 minutes***

***Fermentation time: 7 days***

***Total time: 7 days 15 minutes***

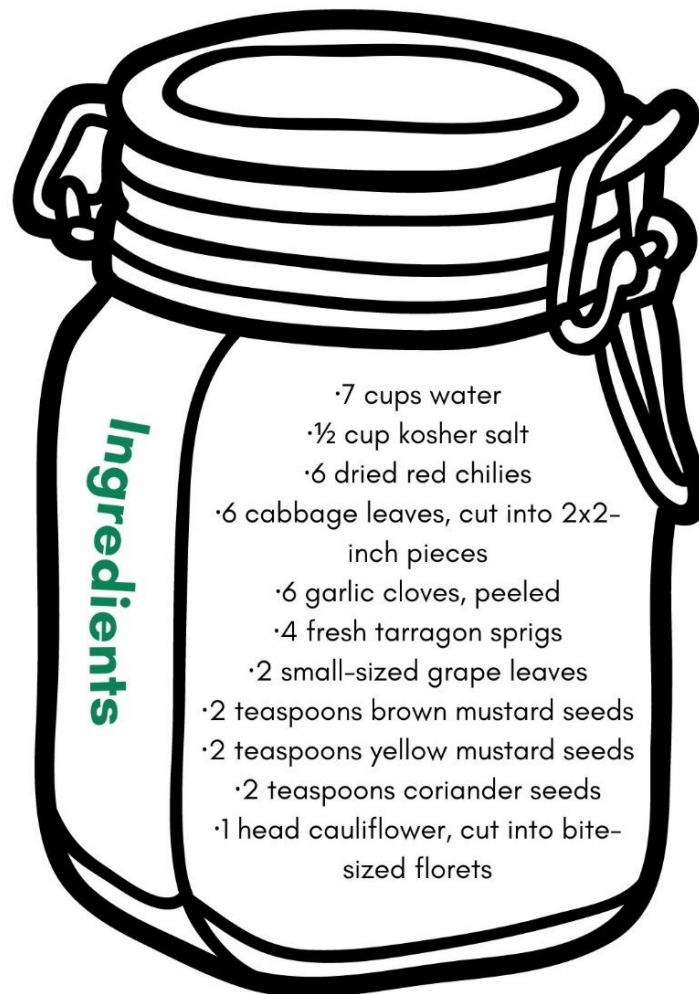
***Servings: 16***

## ***How to Prepare***

1. In a large-sized mixing bowl, add onion slices and salt and, with your hands, massage until onions begin to soften.
2. In the bottom of 1 (1-quart) sterilized jar, place the onion slices with any accumulated liquid.

3. Place the water over the onion slices, leaving about 1-inch space from the top.
4. With a fermenting weight, weigh down the tomatoes.
5. With a clean cloth, cover the mouth of each jar loosely and then secure it with a rubber band.
6. Set the jar aside at a cool room temperature for 5-7 days.
7. Burp the jar of pickles daily to release excess pressure.
8. This fermented pickle can be preserved in refrigerator for up to 2 months.

# Fermented Cauliflower Pickle



***Preparation time: 15 minutes***

***Cooking time: 5 minutes***

***Fermentation time: 7 weeks***

***Total time: 7 weeks 20 minutes***

***Servings: 32***

## ***How to Prepare***

1. In a large-sized saucepan, add water and salt over medium-high heat and cook until boiling, stirring frequently.

2. Remove the saucepan of salted water from heat and set aside to cool slightly.
3. Meanwhile, into the bottom of 2 (1-quart) sterilized jars, evenly divide the red chilies, cabbage pieces, garlic cloves, tarragon sprigs, grape leaves, mustard seeds, and coriander seeds.
4. Then divide the cauliflower florets into each jar.
5. Place the salted water over the cauliflower mixture, leaving about 1-inch space from the top.
6. With a fermenting weight, weigh down the tomatoes.
7. With a clean cloth, cover the mouth of each jar loosely and then secure it with a rubber band.
8. Set the jar aside at a cool room temperature for 6-7 weeks.
9. Burp the jar of pickles daily to release excess pressure.
10. This fermented pickle can be preserved in refrigerator for up to 6 months.

# Chapter 5: Fruit Pickles Recipes



# Raisin Pickle



***Preparation time: 10 minutes***

***Cooking time: 5 minutes***

***Pickling time: 24 hours***

***Total time: 24 hours 10 minutes***

***Servings: 8***

## ***How to Prepare***

1. In a small-sized non-reactive saucepan, add vinegar, onion, sugar, bay leaf, cumin seeds, coriander seeds, and salt over medium-high heat and cook until boiling, stirring frequently.

2. Meanwhile, in the bottom of 1 (1-pint) sterilized jar, place the raisins.
3. Place the hot vinegar mixture over the raisins, leaving about ½-inch space from the top.
4. Set aside to cool to room temperature.
5. Cover the jar and tap on the counter to release any air bubbles.
6. Refrigerate for 24 hours before serving.
7. This pickle can be preserved in refrigerator for up to 1 month.

# Blueberry Pickle



***Preparation time: 15 minutes***

***Cooking time: 15 minutes***

***Pickling time: 24 hours***

***Total time: 24 hours 30 minutes***

***Servings: 24***

## ***How to Prepare***

1. In the center of cheesecloth, place the cinnamon sticks, allspice berries, and cloves.

2. With kitchen twine, tie the cheesecloth in a sachet. Set aside.
3. In a large-sized, non-reactive saucepan, add vinegar and spice sachet over medium-high heat. Cook until boiling, stirring frequently.
4. Add in blueberries and cook for about 5 minutes, shaking the pan occasionally.
5. Remove the saucepan of blueberries from heat and set aside, covered, for 8-12 hours.
6. Discard the spice sachet from pan.
7. Through a colander, strain the blueberries.
8. Return the liquid into the same pan with sugars over medium-high heat and cook until boiling, stirring frequently.
9. Cook for about 3-5 minutes, stirring frequently.
10. In the bottom of 6 (½-pint) sterilized jars, divide the strained blueberries.
11. Place the vinegar mixture over the blueberries, leaving about ½-inch space from the top.
12. Set aside to cool to room temperature.
13. Cover the jars and tap on the counter to release any air bubbles.
14. Refrigerate for 24 hours before serving.
15. This pickle can be preserved in refrigerator for up to 1 month.

# Blackberry Pickle



***Preparation time: 10 minutes***

***Cooking time: 5 minutes***

***Pickling time: 24 hours***

***Total time: 24 hours 15 minutes***

***Servings: 16***

## ***How to Prepare***

1. In a small-sized, non-reactive saucepan, add water, vinegar, sugar, and salt over medium-high heat and cook until boiling, stirring

frequently.

2. Meanwhile, in the bottom of 2 (1-pint) sterilized jars, divide the blackberries, lemon zest strips and cloves.
3. Place the vinegar mixture over the blackberries, leaving about ½-inch space from the top.
4. Set aside to cool to room temperature.
5. Cover the jars and tap on the counter to release any air bubbles.
6. Refrigerate for 24 hours before serving.
7. This pickle can be preserved in refrigerator for up to 1 month.

# Cranberry Pickle



***Preparation time: 10 minutes***

***Cooking time: 18 minutes***

***Pickling time: 24 hours***

***Total time: 24 hours 28 minutes***

***Servings: 16***

## ***How to Prepare***

1. In the center of cheesecloth, place the ginger, cloves, and peppercorns.

2. With kitchen twine, tie the cheesecloth in a sachet. Set aside.
3. In a large-sized, non-reactive saucepan, add vinegar, water, and sugar over medium-high heat and cook until boiling, stirring frequently.
4. Add in spice sachet and cinnamon stick and cook for about 1 minute.
5. Add in cranberries and again cook until boiling.
6. Cook for about 5-7 minutes or until cranberries begin to pop.
7. Remove the saucepan of cranberries from heat and set aside for about 5 minutes.
8. Discard the spice sachet and cinnamon stick.
9. In the bottom of 2 (1-pint) sterilized jars, evenly spoon the cranberries.
10. Place the vinegar mixture over the cranberries, leaving about ½-inch space from the top.
11. Set aside to cool to room temperature.
12. Cover the jars and tap on the counter to release any air bubbles.
13. Refrigerate for 24 hours before serving.
14. This pickle can be preserved in refrigerator for up to 1 month.

# Cherry Pickle



***Preparation time: 15 minutes***

***Cooking time: 5 minutes***

***Pickling time: 24 hours***

***Total time: 24 hours 20 minutes***

***Servings: 16***

## ***How to Prepare***

1. In a small-sized non-reactive saucepan, add water, vinegar, brown sugar, and black peppercorns over medium-high heat and cook until

boiling, stirring frequently.

2. Meanwhile, in the bottom of 1 (1-quart) sterilized jar, place the cherries and thyme sprigs.
3. Place the hot vinegar mixture over the cherries, leaving about ½-inch space from the top.
4. Set aside to cool to room temperature.
5. Cover the jar and tap on the counter to release any air bubbles.
6. Refrigerate for 24 hours before serving.
7. This pickle can be preserved in refrigerator for up to 1 month.

# Grapes Pickle



***Preparation time: 10 minutes***

***Cooking time: 5 minutes***

***Pickling time: 24 hours***

***Total time: 24 hours 15 minutes***

***Servings: 16***

## ***How to Prepare***

1. In a small-sized non-reactive saucepan, add vinegar, water, and sugar over medium-high heat. Cook until boiling, stirring frequently.

2. Meanwhile, in the bottom of 1 (1-quart) sterilized jar, place the grapes, vanilla bean, cinnamon stick, cloves, peppercorns, and mustard seeds.
3. Place the hot vinegar mixture over the grapes, leaving about ½-inch space from the top.
4. Set aside to cool to room temperature.
5. Cover the jar and tap on the counter to release any air bubbles.
6. Refrigerate for 24 hours before serving.
7. This pickle can be preserved in refrigerator for up to 1 month.

# Apple Pickle



***Preparation time: 15 minutes***

***Cooking time: 15 minutes***

***Pickling time: 24 hours***

***Total time: 24 hours 30 minutes***

***Servings: 8***

## ***How to Prepare***

1. In a small-sized, non-reactive saucepan, add vinegar, water, maple syrup, pickling spice, and salt over medium-high heat. Cook until

boiling, stirring frequently.

2. Adjust the heat to low and simmer for about 8-10 minutes.
3. Remove the saucepan of vinegar mixture from heat and set aside to cool slightly.
4. Meanwhile, in the bottom of 1 (1-pint) sterilized jar, place the apple slices and anise pods.
5. Place the vinegar mixture over the apple slices, leaving about ½-inch space from the top.
6. Set aside to cool to room temperature.
7. Cover the jar and tap on the counter to release any air bubbles.
8. Refrigerate for 24 hours before serving.
9. This pickle can be preserved in refrigerator for up to 1 month.

# Peach Pickle



***Preparation time: 15 minutes***

***Cooking time: 25 minutes***

***Pickling time: 24 hours***

***Total time: 24 hours 40 minutes***

***Servings: 24***

## ***How to Prepare***

1. Insert 6 cloves into each peach.
2. In a large-sized, non-reactive saucepan, add vinegar, water, and

sugar over medium-high heat and cook until boiling, stirring frequently.

3. Add in the peaches and cook for about 20 minutes, turning occasionally.
4. Remove the saucepan of peaches from heat and set aside to cool for about 5 minutes.
5. In the bottom of 3 (1-pint) sterilized jars, divide the peaches, ginger and cinnamon sticks.
6. Place the vinegar mixture over the peaches, leaving about ½-inch space from the top.
7. Set aside to cool to room temperature.
8. Cover the jars and tap on the counter to release any air bubbles.
9. Refrigerate for 24 hours before serving.
10. This pickle can be preserved in refrigerator for up to 1 month.

# Pear Pickle



***Preparation time: 15 minutes***

***Cooking time: 5 minutes***

***Pickling time: 48 hours***

***Total time: 48 hours 20 minutes***

***Servings: 16***

## ***How to Prepare***

1. In a small-sized, non-reactive saucepan, add water, vinegar, sugar, and salt over medium-high heat and cook until boiling, stirring

frequently.

2. Meanwhile, in the bottom of 2 (1-pint) sterilized jars, divide the pear halves, cinnamon stick pieces, and cloves.
3. Place the vinegar mixture over the pears, leaving about ½-inch space from the top.
4. Set aside to cool to room temperature.
5. Cover the jars and tap on the counter to release any air bubbles.
6. Refrigerate for 48 hours before serving.
7. This pickle can be preserved in refrigerator for up to 1 month.

# Avocado Pickle



***Preparation time: 15 minutes***

***Cooking time: 5 minutes***

***Pickling time: 4 hours***

***Total time: 4 hours 20 minutes***

***Servings: 8***

## ***How to Prepare***

1. In a small-sized, non-reactive saucepan, add water, vinegar, sugar, and salt over medium-high heat and cook until boiling, stirring

frequently.

2. Remove the saucepan of vinegar mixture from heat and set aside to cool.
3. Meanwhile, in the bottom of 1 (1-pint) sterilized jar, evenly place the avocado slices, cilantro sprigs, garlic, and red pepper flakes.
4. Place the vinegar mixture over the avocado slices, leaving about ½-inch space from the top.
5. Set aside to cool to room temperature.
6. Cover the jar and tap on the counter to release any air bubbles.
7. Refrigerate for 3-4 hours before serving.
8. This pickle can be preserved in refrigerator for up to 1 month.

# Chapter 6: Kimchi, Tsukemono & Cabbage Pickles Recipes



# Miso Cabbage Kimchi



***Preparation time: 20 minutes***

***Cooking time: 5 minutes***

***Fermentation time: 1 week***

***Total time: 1 week 25 minutes***

***Servings: 24***

## ***How to Prepare***

1. In a large-sized bowl, add cabbage and salt. Toss to coat.
2. Set the bowl of cabbage aside for 30 minutes, stirring once halfway

through.

3. In a small-sized saucepan, add water and rice flour. Whisk until well blended.
4. Place the saucepan of rice flour mixture over medium-low heat and cook until boiling, stirring continuously.
5. Remove the saucepan of rice flour paste from heat and set aside to cool slightly.
6. Into a clean food processor, add the scallions and remaining ingredients and pulse until chopped.
7. Add the cooled rice flour paste and pulse until smooth.
8. With your hands, squeeze the salted cabbage completely and transfer into a large-sized, clean bowl.
9. Add in the paste and, with your hands, mix well.
10. Into a large-sized airtight container, place the cabbage mixture.
11. Cover the container tightly and place in a cool, dark place for 1 week.
12. This kimchi can be refrigerated for up to 3 weeks.

# Cabbage Kimchi



***Preparation time: 20 minutes***

***Fermentation time: 1 day***

***Total time: 1 day 20 minutes***

***Servings: 8***

## ***How to Prepare***

1. In a large-sized bowl, add cabbage strips and salt. Mix well.
2. Set aside for about 1 hour.
3. Meanwhile, for kimchi paste: in another large-sized bowl, add the garlic, ginger, vinegar, chili sauce, fish sauce, and sugar. Mix until

well-combined.

4. Rinse the cabbage under cold water thoroughly and then drain well.
5. Dry the cabbage strips thoroughly.
6. Add the cabbage strips, radishes, carrot, and scallions into the bowl of paste and toss to coat well.
7. In a large-sized sterilized jar, place the cabbage mixture. Then press down with a wooden spoon.
8. Cover the jar tightly and then place in a cool, dark place for 1 day.
9. This kimchi can be refrigerated for up to 3 weeks.

# Chives Kimchi



***Preparation time: 20 minutes***

***Cooking time: 12 minutes***

***Fermentation time: 4 days***

***Total time: 4 days 32 minutes***

***Servings: 4***

## ***How to Prepare***

1. In a small-sized saucepan, add water and anchovies over medium heat and bring to a gentle boil.

2. Simmer for about 5-7 minutes.
3. Drain the anchovies, reserving  $\frac{1}{2}$  cup of cooking liquid.
4. In a clean blender, add reserved cooking liquid, onion, ginger, and garlic. Pulse until smooth.
5. In a large-sized bowl, add the pureed onion mixture, salted shrimps, anchovy sauce, chili flakes, and sugar. Mix until well-blended.
6. Add the chives and toss to coat well.
7. In a large-sized, airtight container, place the kimchi.
8. Cover the container tightly and place in a cool, dark place for 1-2 days.
9. Then place the container of kimchi in the refrigerator for 2 days before serving.
10. This kimchi can be refrigerated for up to 3 weeks.

# Bok Choy Kimchi



***Preparation time: 20 minutes***

***Fermentation time: 1 day***

***Total time: 1 day 20 minutes***

***Servings: 12***

## ***How to Prepare***

1. In a large-sized bowl, dissolve the salt in 6 cups of water.
2. Add in the bok choy and set aside for 30 minutes.
3. Drain the bok choy completely.
4. Into a clean blender, add the remaining water, apple, and garlic.

Pulse until smooth.

5. Add the chili peppers and pulse until the chilies are chopped into small-sized pieces.
6. In a large-sized bowl, add the pureed mixture, chili flakes, anchovy sauce, and ginger puree. Mix until well-blended.
7. Add in the bok choy and gently toss to coat well.
8. In a large-sized, airtight container, place the kimchi.
9. Cover the container tightly and place in a cool, dark place for 1 day.
10. This kimchi can be refrigerated for up to 3 weeks.

# Radish Kimchi



***Preparation time: 25 minutes***

***Cooking time: 15 minutes***

***Fermentation time: 7 days***

***Total time: 7 days 40 minutes***

***Servings: 20***

## ***How to Prepare***

1. In a large-sized shallow bowl, place the radishes and sprinkle evenly with salt.

2. Set aside for 2 hours, turning the radishes twice.
3. Rinse the radishes under cold running water and then place in a colander.
4. Set aside to drain completely.
5. Meanwhile, in a small-sized saucepan, add water and anchovies over medium heat and cook until boiling.
6. Simmer for about 5 minutes.
7. Drain the anchovies, reserving  $\frac{3}{4}$  cup plus 2 tablespoons of the cooking liquid.
8. Discard the anchovies.
9. In another small-sized saucepan, add  $\frac{3}{4}$  cup of the reserved cooking liquid and rice flour over medium-high heat and cook until boiling, whisking continuously.
10. Remove the saucepan of rice flour paste from heat and set aside to cool.
11. In a clean blender, add reserved 2 tablespoons of cooking liquid, apple, onion, ginger, garlic, and salted shrimps and pulse until smooth.
12. In a large-sized bowl, add pureed mixture,  $\frac{1}{2}$  cup of rice flour paste, anchovy sauce, sugar and chili flakes and mix until well-combined.
13. Set aside for 10 minutes.
14. Add the radishes and coat with the mixture generously.
15. In a large-sized container, place the kimchi.
16. Seal the container and set aside at room temperature for 2 days.
17. Then place the container in the refrigerator for 5 days before serving.
18. This kimchi can be refrigerated for up to 3 weeks.

# Cucumber Kimchi



***Preparation time: 25 minutes***

***Cooking time: 5 minutes***

***Fermentation time: 4 days***

***Total time: 4 days 30 minutes***

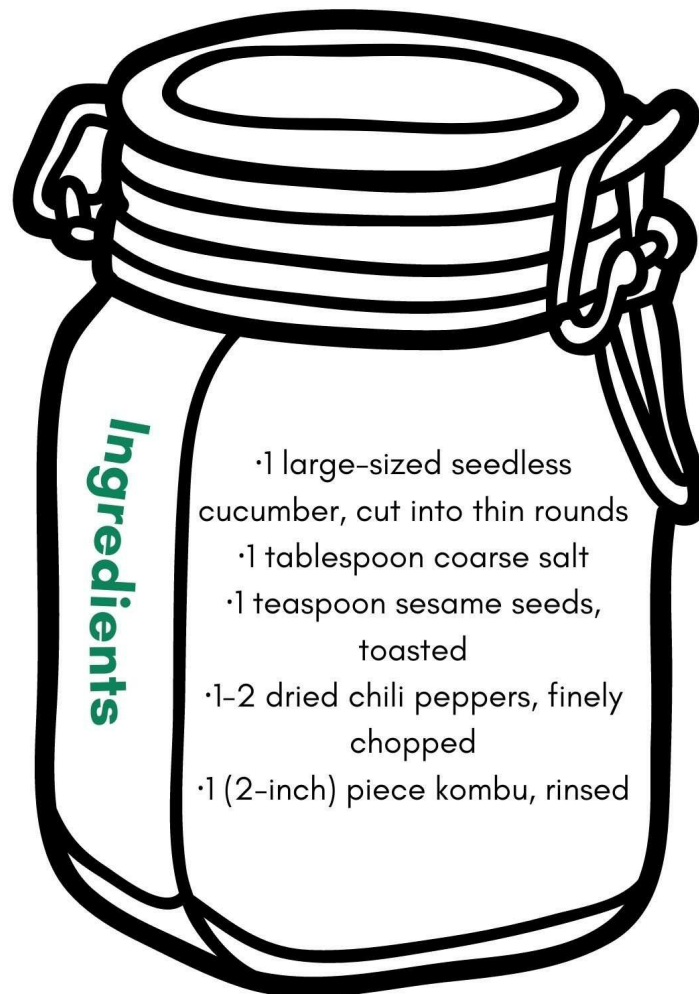
***Servings: 12***

## ***How to Prepare***

1. Cut through each cucumber in a cross pattern, leaving one end uncut.

2. In a large-sized mixing bowl, place the cucumbers.
3. In a medium-sized saucepan, add water and salt over medium-high heat and cook until boiling.
4. Place the boiling salted water over the cucumbers.
5. Arrange a heavy object over the cucumbers to weigh them down.
6. Set aside for 1 hour.
7. Drain the cucumbers well.
8. **For kimchi filling:** in a large-sized bowl, add chives and remaining ingredients and mix well.
9. Stuff each cucumber with the kimchi filling, then coat the outside with the filling.
10. In a large-sized container, place the cucumbers.
11. Seal the container and set aside at room temperature for 1 day.
12. Then place the container in the refrigerator for 2-3 days before serving.
13. This kimchi can be refrigerated for up to 3 weeks.

# Cucumber Tsukemono



***Preparation time: 15 minutes***

***Pickling time: 18 hours***

***Total time: 18 hours 15 minutes***

***Servings: 4***

## ***How to Prepare***

1. In a large-sized bowl, add cucumber slices and salt. Gently toss to coat.
2. Add in sesame seeds and gently toss to coat.
3. Now arrange the cucumbers in an even layer.

4. Place kombu and peppers on top of cucumbers.
5. Arrange a heavy object over the cucumbers to weigh it down.
6. Refrigerate the bowl for 16-18 hours before serving.

# Radish Tsukemono



***Preparation time: 15 minutes***

***Cooking time: 5 minutes***

***Pickling time: 1 day***

***Total time: 1 day 20 minutes***

***Servings: 8***

## ***How to Prepare***

1. In a small-sized, non-reactive saucepan, add vinegar and sugar over medium-high heat and cook until boiling, stirring frequently.

2. Remove the saucepan of vinegar mixture from heat and set aside to cool.
3. In a large-sized bowl, add vinegar mixture, sake, salt, and dashi powder. Mix until well-blended.
4. Set aside to cool completely.
5. In the bowl of vinegar mixture, add daikon slices and red chili pepper and mix well.
6. Transfer the mixture into a shallow resealable plastic container.
7. Seal the container and set aside at room temperature for 1 day.

# Cabbage Pickle



***Preparation time: 15 minutes***

***Cooking time: 5 minutes***

***Pickling time: 24 hours***

***Total time: 24 hours 20 minutes***

***Servings: 16***

## ***How to Prepare***

1. In a large-sized, non-reactive saucepan, add water, vinegar, sugar, and salt over medium-high heat and cook until boiling, stirring

frequently.

2. Add in the cabbage, shallots, and jalapeño pepper. Immediately remove from heat.
3. Set aside to cool for about 45 minutes.
4. Place the cabbage mixture into 1 (1-quart) sterilized jar, leaving about ½-inch space from the top.
5. Arrange the thyme sprigs into the side of the jar.
6. Cover the jar and tap on the counter to release any air bubbles.
7. Refrigerate 24 hours before serving.
8. This pickle can be preserved in refrigerator for up to 1 month.

# Cabbage & Carrot Pickle



***Preparation time: 15 minutes***

***Cooking time: 5 minutes***

***Pickling time: 24 hours***

***Total time: 24 hours 20 minutes***

***Servings: 8***

## ***How to Prepare***

1. In a large-sized bowl, add cabbage, carrots, and 2 tablespoons of salt. Mix well.

2. Set the bowl of cabbage mixture aside at room temperature for 30-60 minutes.
3. Meanwhile, in a small-sized, non-reactive saucepan, add vinegar, sugar, 1 teaspoon of salt, and chili peppers over medium heat and cook until boiling, stirring frequently.
4. Remove the saucepan of vinegar mixture from heat and set aside to cool.
5. Drain the veggies and then rinse under cold running water twice.
6. Drain the veggies completely and then squeeze out the excess water.
7. In the bottom of 1 (1-pint) sterilized jar, add the veggies, garlic, and peppercorns.
8. Place the vinegar mixture over the cabbage mixture, leaving about ½-inch space from the top.
9. Set aside to cool to room temperature.
10. Cover the jar and tap on the counter to release any air bubbles.
11. Refrigerate 24 hours before serving.
12. This pickle can be preserved in refrigerator for up to 1 month.

# Chapter 7: Sweet Pickle Recipes



# Sweet Pickled Red Onion



***Preparation time: 15 minutes***

***Cooking time: 5 minutes***

***Pickling time: 24 hours***

***Total time: 24 hours 20 minutes***

***Servings: 16***

## ***How to Prepare***

1. In a small-sized, non-reactive saucepan, add water, vinegar, sugar, and salt over medium-high heat. Cook until boiling, stirring

frequently.

2. Meanwhile, in the bottom of 2 (1-pint) sterilized jars, divide the onion slices, garlic, and peppercorns.
3. Place the vinegar mixture over the onion slices, leaving about ½-inch space from the top.
4. Set aside to cool to room temperature.
5. Cover the jars and tap on the counter to release any air bubbles.
6. Refrigerate for 48 hours before serving.
7. This pickle can be preserved in refrigerator for up to 1 month.

# Sweet Pickled Garlic



***Preparation time: 15 minutes***

***Cooking time: 5 minutes***

***Pickling time: 24 hours***

***Total time: 24 hours 20 minutes***

***Servings: 24***

## ***How to Prepare***

1. In a small-sized, non-reactive saucepan, add vinegar, sugar, and salt over medium-high heat and cook until boiling, stirring frequently.

2. Meanwhile, in the bottom of 3 (1-pint) sterilized jars, divide the garlic cloves and pickling spices.
3. Place the vinegar mixture over the Onion slices, leaving about ½-inch space from the top.
4. Set aside to cool to room temperature.
5. Cover the jars and tap on the counter to release any air bubbles.
6. Refrigerate for 48 hours before serving.
7. This pickle can be preserved in refrigerator for up to 1 month.

# Sweet Pickled Jalapeño Peppers



***Preparation time: 15 minutes***

***Cooking time: 30 minutes***

***Pickling time: 48 hours***

***Total time: 24 hours 45 minutes***

***Servings: 20***

## ***How to Prepare***

1. In a large-sized, non-reactive saucepan, add vinegars, sugar, granulated garlic, cayenne pepper, turmeric, and celery seeds over high heat and cook until boiling, stirring frequently.

2. Next adjust the heat to low and simmer for about 5 minutes.
3. Add in the pepper slices and stir to combine.
4. Next adjust the heat to high and again cook until boiling, stirring occasionally.
5. Next adjust the heat to low and simmer for about 4 minutes.
6. With a slotted spoon, place the pepper slices into 5 (½-pint) sterilized jars.
7. Again, place the saucepan of sugar syrup over medium-high heat and bring to a full rolling boil.
8. Boil for about 6 minutes.
9. Place the hot sugar syrup into each jar, leaving about ½-inch space from the top.
10. Set aside to cool to room temperature.
11. Cover the jars and tap on the counter to release any air bubbles.
12. Refrigerate for 48 hours before serving.
13. This pickle can be preserved in refrigerator for up to 1 month.

# Sweet Pickled Cucumber



***Preparation time: 15 minutes***

***Cooking time: 15 minutes***

***Pickling time: 24 hours***

***Total time: 24 hours 30 minutes***

***Servings: 32***

## ***How to Prepare***

1. In a large-sized non-reactive bowl, add cucumbers, onion, and salt. Mix well.

2. Add enough crushed ice to cover the cucumber mixture and mix well.
3. Set aside for about 3 hours.
4. Drain the cucumber mixture and rinse under cold running water.
5. Again, drain the cucumber mixture completely.
6. In a large-sized, non-reactive saucepan, add water, vinegars, sugar, mustard, celery seeds, and peppercorns over medium-high heat and cook until boiling, stirring frequently.
7. Add in the drained cucumber mixture and again cook until boiling, stirring occasionally.
8. Next adjust the heat to low and simmer for about 4-5 minutes.
9. In 4 (1-pint) sterilized jars, evenly divide the hot cucumber mixture, leaving about ½-inch space from the top.
10. Set aside to cool to room temperature.
11. Cover the jars and tap on the counter to release any air bubbles.
12. Refrigerate for 24 hours before serving.
13. This pickle can be preserved in refrigerator for up to 1 month.

# Sweet Pickled Cabbage



***Preparation time: 15 minutes***

***Cooking time: 5 minutes***

***Pickling time: 24 hours***

***Total time: 24 hours 20 minutes***

***Servings: 16***

## ***How to Prepare***

1. In a large-sized non-reactive saucepan, add water, vinegar, sugar and salt over medium-high heat and cook until boiling, stirring

frequently.

2. Add in cabbage, shallots and jalapeño pepper and immediately remove from heat.
3. Set the pan of vegetables aside to cool for about 45 minutes.
4. In 1 (1-quart) sterilized jar, place the vegetable mixture and thyme sprigs.
5. Set aside to cool to room temperature.
6. Cover the jar and tap on the counter to release any air bubbles.
7. Refrigerate for 24 hours before serving.
8. This pickle can be preserved in refrigerator for up to 1 month.

# Sweet Pickled Zucchini



***Preparation time: 15 minutes***

***Cooking time: 13 minutes***

***Pickling time: 24 hours***

***Total time: 24 hours 28 minutes***

***Servings: 48***

## ***How to Prepare***

1. In a large-sized bowl of water, add zucchini, onions, and salt. Mix well.

2. Set aside for at least 2 hours.
3. Drain the zucchini mixture and transfer into a large-sized, heatproof bowl.
4. In a large-sized, non-reactive saucepan, add vinegar, sugar, mustard seeds, celery seeds, mustard, and turmeric over medium-high heat and cook until boiling, stirring frequently.
5. Immediately place the hot vinegar mixture over the zucchini mixture and stir to combine.
6. Set aside for at least 2 hours.
7. In a large-sized, non-reactive saucepan, add zucchini mixture over medium-high heat and cook until boiling, stirring frequently.
8. Boil for about 3 minutes.
9. In 3 (1-quart) sterilized jars, evenly divide the hot zucchini mixture, leaving about ½-inch space from the top.
10. Set aside to cool to room temperature.
11. Cover the jars and tap on the counter to release any air bubbles.
12. Refrigerate for 24 hours before serving.
13. This pickle can be preserved in refrigerator for up to 1 month.

# Sweet Pickled Cauliflower



***Preparation time: 15 minutes***

***Cooking time: 10 minutes***

***Pickling time: 24 hours***

***Total time: 24 hours 25 minutes***

***Servings: 24***

## ***How to Prepare***

1. In a large-sized saucepan of boiling water, cook the cauliflower for about 3 minutes.

2. Drain the cauliflower and set aside to cool.
3. In a large-sized, non-reactive saucepan, add vinegar, sugar, onion, bell pepper, mustard seeds, celery seeds, turmeric, and red pepper flakes over medium-high heat and cook until boiling, stirring frequently.
4. Next adjust the heat to low and simmer for about 5 minutes.
5. Stir in the drained cauliflower and immediately remove from heat.
6. In 3 (1-pint) sterilized jars, evenly divide the hot cauliflower mixture, leaving about ½-inch space from the top.
7. Set aside to cool to room temperature.
8. Cover the jars and tap on the counter to release any air bubbles.
9. Refrigerate for 24 hours before serving.
10. This pickle can be preserved in refrigerator for up to 1 month.

# Sweet Pickled Beets



***Preparation time: 15 minutes***

***Cooking time: 55 minutes***

***Pickling time: 24 hours***

***Total time: 25 hours 5 minutes***

***Servings: 8***

## ***How to Prepare***

1. In a large-sized saucepan of water, add the beets over high heat and cook until boiling.

2. Next adjust the heat to low and simmer, covered for about 45 minutes.
3. Drain the beets and rinse under cold running water.
4. Again, drain the beets and set aside to cool slightly.
5. Remove the skin of the beets and then cut each into thin slices.
6. In a small-sized, non-reactive saucepan, add vinegar, sugar, and salt over medium-high heat and cook until boiling, stirring frequently.
7. Meanwhile, in the bottom of 1 (1-pint) sterilized jar, place the beet slices, bay leaves, and peppercorns.
8. Place the vinegar mixture over the beet slices, leaving about ½-inch space from the top.
9. Set aside to cool to room temperature.
10. Cover the jar and tap on the counter to release any air bubbles.
11. Refrigerate for 48 hours before serving.
12. This pickle can be preserved in refrigerator for up to 1 month.

# Sweet Pickled Carrots



***Preparation time: 15 minutes***

***Cooking time: 7 minutes***

***Pickling time: 24 hours***

***Total time: 24 hours 22 minutes***

***Servings: 16***

## ***How to Prepare***

1. Heat a small-sized, non-stick frying pan over medium-low heat and toast peppercorns, allspice berries, and red pepper flakes for about 1-

2 minutes, stirring continuously.

2. In a small-sized, non-reactive saucepan, add water, vinegar, sugar, and salt over medium-high heat and cook until boiling, stirring frequently.
3. Meanwhile, in the bottom of 1 (1-quart) sterilized jar, place the carrot sticks, garlic, and peppercorns.
4. Place the vinegar mixture over the carrot sticks, leaving about ½-inch space from the top.
5. Set aside to cool to room temperature.
6. Cover the jar and tap on the counter to release any air bubbles.
7. Refrigerate for 48 hours before serving.
8. This pickle can be preserved in refrigerator for up to 1 month.

# Sweet Pickled Okra



***Preparation time: 15 minutes***

***Cooking time: 5 minutes***

***Pickling time: 24 hours***

***Total time: 24 hours 20 minutes***

***Servings: 24***

## ***How to Prepare***

1. In a small-sized, non-reactive saucepan, add vinegar, water, piquanté pepper brine, sugar, mustard seeds, salt, and peppercorns over

medium-high heat and cook until boiling, stirring frequently.

2. Meanwhile, into the bottom of 3 (1-pint) sterilized jars, divide the okra, piquanté pepper pieces, red chili peppers, and garlic
3. Place the vinegar mixture over the okra mixture, leaving about ½-inch space from the top.
4. Set aside to cool to room temperature.
5. Cover the jars and tap on the counter to release any air bubbles.
6. Refrigerate for 48 hours before serving.
7. This pickle can be preserved in refrigerator for up to 1 month.

# Chapter 8:

## Chutney, Salsa & Relish Recipes



# Apple Chutney



***Preparation time: 15 minutes***

***Cooking time: 1½ hours***

***Refrigeration time: 24 hours***

***Total time: 25 hours 45 minutes***

***Servings: 56***

## ***How to Prepare***

1. In a large-sized, heavy-bottomed saucepan, heat the oil over medium-high heat and cook the onions and salt for about 10-12

minutes, stirring frequently.

2. Add in apples pieces and cook for about 10-12 minutes, stirring frequently.
3. Stir in the raisins, ginger and spices and cook for about 2 minutes, stirring frequently.
4. Add in vinegar and brown sugar. Cook until boiling.
5. Next set the heat to low and cook, covered for about 45-60 minutes, stirring occasionally.
6. In 7 (½-pint) sterilized jars, divide the chutney, leaving about ½-inch space from the top.
7. Set aside to cool to room temperature.
8. Cover the jars and tap on the counter to release any air bubbles.
9. Refrigerate 24 hours before serving.
10. This jarred chutney can be stored in the refrigerator for up to 1 month.

# Peach Chutney



***Preparation time: 20 minutes***

***Cooking time: 50 minutes***

***Refrigeration time: 24 hours***

***Total time: 25 hours 10 minutes***

***Servings: 64***

## ***How to Prepare***

1. In a large-sized, heat-proof bowl, place the peach quarters and cover with boiling water.

2. Cover the pan and set aside for about 2-3 minutes.
3. Drain the peach quarters completely and remove the skin.
4. Next chop the peach quarters into small-sized pieces.
5. In a large-sized, non-reactive saucepan, add the peaches and remaining ingredients over high heat.
6. Next adjust the heat to medium-low and simmer for about 45 minutes, stirring occasionally.
7. In 8 (½-pint) sterilized jars, divide the chutney, leaving about ½-inch space from the top.
8. Set aside to cool to room temperature.
9. Cover the jars and tap on the counter to release any air bubbles.
10. Refrigerate 24 hours before serving.
11. This jarred chutney can be stored in the refrigerator for up to 1 month.

# Onion Chutney



***Preparation time: 15 minutes***

***Cooking time: 2 hours***

***Refrigeration time: 24 hours***

***Total time: 26 hours 15 minutes***

***Servings: 24***

## ***How to Prepare***

1. In a large-sized sauté pan, heat olive oil over medium heat and stir in the onions, shallot, jalapeño pepper, salt, and black pepper.

2. Immediately adjust the heat to low and cook, covered for about 30 minutes, stirring occasionally.
3. Add in the vinegars, brown sugar, bay leaf, and cinnamon. Cook, uncovered, for about 1-1½ hours, stirring occasionally.
4. Remove the saucepan of onion chutney from heat and set aside to cool slightly.
5. Into 3 (½-pint) sterilized jars, divide the chutney, leaving about ½-inch space from the top.
6. Set aside to cool to room temperature.
7. Cover the jars and tap on the counter to release any air bubbles.
8. Refrigerate 24 hours before serving.
9. This jarred chutney can be stored in the refrigerator for up to 1 month.

# Tomato Chutney



***Preparation time: 15 minutes***

***Cooking time: 2 hours 5 minutes***

***Refrigeration time: 24 hours***

***Total time: 26 hours 20 minutes***

***Servings: 48***

## ***How to Prepare***

1. In a large-sized, heavy-bottomed, non-reactive saucepan, add tomatoes and remaining ingredients over high heat and cook until

boiling.

2. Next adjust the heat to low and simmer for about 1½-2 hours, stirring occasionally.
3. Into 6 (½-pint) sterilized jars, divide the chutney, leaving about ½-inch space from the top.
4. Set aside to cool to room temperature.
5. Cover the jars and tap on the counter to release any air bubbles.
6. Refrigerate 24 hours before serving.
7. This jarred chutney can be stored in the refrigerator for up to 1 month.

# Green Tomato Salsa



***Preparation time: 15 minutes***

***Cooking time: 45 minutes***

***Refrigeration time: 24 hours***

***Total time: 25 hours***

***Servings: 64***

## ***How to Prepare***

1. In a large-sized, non-reactive saucepan, add all of the ingredients over medium-high heat and bring the mixture to a boil, stirring

occasionally.

2. Next adjust the heat to medium-low and simmer, uncovered, for about 30-40 minutes, stirring occasionally.
3. Into 8 (1-pint) sterilized jars, divide the salsa, leaving about ½-inch space from the top.
4. Set aside to cool to room temperature.
5. Cover the jars and tap on the counter to release any air bubbles.
6. Refrigerate 24 hours before serving.
7. This jarred salsa can be stored in the refrigerator for up to 1 month.

# Apple & Tomatillo Salsa



***Preparation time: 15 minutes***

***Cooking time: 20 minutes***

***Refrigeration time: 24 hours***

***Total time: 24 hours 35 minutes***

***Servings: 40***

## ***How to Prepare***

1. In a non-reactive saucepan, add all ingredients over medium-high heat and cook until boiling, stirring continuously.

2. Next set the heat to low and cook for about 15 minutes, stirring occasionally.
3. Into 5 (½-pint) sterilized jars, evenly divide the salsa, leaving about ½-inch space from the top.
4. Set aside to cool to room temperature.
5. Cover the jars and tap on the counter to release any air bubbles.
6. Refrigerate 24 hours before serving.
7. This jarred salsa can be stored in the refrigerator for up to 1 month.

# Beans & Corn Salsa



***Preparation time: 15 minutes***

***Cooking time: 15 minutes***

***Refrigeration time: 24 hours***

***Total time: 24 hours 30 minutes***

***Servings: 56***

## ***How to Prepare***

1. Rinse the can of black beans well and then drain it completely.
2. In a non-reactive saucepan, add all ingredients over medium-high

heat and cook until boiling, stirring continuously.

3. Next set the heat to low and cook for about 10 minutes, stirring occasionally.
4. Into 7 (1-pint) sterilized jars, divide the salsa, leaving about ½-inch space from the top.
5. Set aside to cool to room temperature.
6. Cover the jars and tap on the counter to release any air bubbles.
7. Refrigerate 24 hours before serving.
8. This jarred salsa can be stored in the refrigerator for up to 1 month.

# Sweet Pickle Relish



***Preparation time: 15 minutes***

***Cooking time: 15 minutes***

***Refrigeration time: 24 hours***

***Total time: 24 hours 30 minutes***

***Servings: 64***

## ***How to Prepare***

1. In a large-sized, non-reactive bowl, add chopped cucumbers, sweet peppers, onions, and salt. Stir to combine well.

2. Cover the cucumber mixture with ice water and set aside for about 2 hours.
3. In a colander, drain the cucumber mixture and rinse well.
4. Again, drain the cucumber mixture completely and then, with your hands, squeeze out excess liquid.
5. In a non-reactive saucepan, add vinegar, sugar, vinegar, mustard seed, and celery seed. Cook until boiling.
6. Stir in the drained cucumber mixture and simmer for about 10 minutes.
7. Into 4 (1-pint) sterilized jars, evenly divide the relish, leaving about ½-inch space from the top.
8. Set aside to cool to room temperature.
9. Cover the jars and tap on the counter to release any air bubbles.
10. Refrigerate 24 hours before serving.
11. This jarred relish can be stored in the refrigerator for up to 1 month.

# Tomato Relish



***Preparation time: 20 minutes***

***Cooking time: 1 hour 21 minutes***

***Refrigeration time: 24 hours***

***Total time: 25 hours 41 minutes***

***Servings: 160***

## ***How to Prepare***

1. In a large-sized saucepan of boiling water, cook the tomatoes for about 30-50 seconds.

2. Drain the tomatoes and immediately place into a bowl of ice water.
3. Again, drain the tomatoes and then pat dry with paper towels.
4. Peel the tomatoes and then chop them finely.
5. In the center of a cheesecloth, place the mustard seeds and celery seeds.
6. With a kitchen twine, tie the cheesecloth in a sachet. Set aside.
7. In a large-sized saucepan, add the tomatoes, spice pouch, and remaining ingredients over high heat and cook until boiling.
8. Next adjust the heat to low and simmer, uncovered for about 60-75 minutes, stirring occasionally.
9. Remove the saucepan of relish from heat and discard spice pouch.
10. In 10 (1-pint) sterilized jars, divide the relish, leaving about ½-inch space from the top.
11. Set aside to cool to room temperature.
12. Cover the jars and tap on the counter to release any air bubbles.
13. Refrigerate 24 hours before serving.
14. This jarred relish can be stored in the refrigerator for up to 1 month.

# Zucchini Relish



***Preparation time: 15 minutes***

***Cooking time: 35 minutes***

***Refrigeration time: 24 hours***

***Total time: 24 hours 50 minutes***

***Servings: 56***

## ***How to Prepare***

1. In a large-sized, non-reactive bowl, add chopped zucchini, onion, and salt. Stir to combine well.

2. Cover the bowl and refrigerate overnight.
3. In a colander, drain the zucchini mixture and rinse well.
4. Again, drain the zucchini mixture completely and then, with your hands, squeeze out excess liquid.
5. In a non-reactive saucepan, add the chopped bell peppers, sugar, vinegar, cornstarch, and spices. Stir to combine.
6. Add the drained zucchini mixture and stir to combine.
7. Place the saucepan over medium-high heat and cook until boiling.
8. Next adjust the heat to medium-low and simmer, uncovered, for about 30 minutes.
9. Into 7 (½-pint) sterilized jars, evenly divide the relish, leaving about ½-inch space from the top.
10. Set aside to cool to room temperature.
11. Cover the jars and tap on the counter to release any air bubbles.
12. Refrigerate 24 hours before serving.
13. This jarred relish can be stored in the refrigerator for up to 1 month.

## Section 2: Fermenting



# Chapter 9:

## What is Fermentation and Why we Ferment



Fermentation is the natural conversion of carbohydrates (such as starch and sugar) to alcohol or acids by bacteria and yeast. The alcohol or acids produced in the food during fermentation act as a natural preservative and give such a food a distinct sour flavor and acidity. Fermentation also promotes the growth of beneficial microorganisms known as probiotics. Probiotics have been known to help with immunological function, digestion, and cardiovascular health. That is why having fermented foods in your diet may improve your general health.

### **Why We Ferment?**

Initially, fermentation was used as a harmless food preservation technique

which allowed people to consume a number of fresh produces long after they were fermented. With the advancement of science, we have learned that fermented food is really good for human health and some of the proven benefits include:

### **Improves Digestive Health**

Probiotics are bacteria that are formed during fermentation and can assist in restoring the balance of friendly bacteria in your stomach as well as relieve some digestive problems. Probiotics help with irritable bowel syndrome (IBS), a common digestive illness. According to a one week study conducted in 2007 and publish in Alimentary pharmacology and therapeutics in the article named “*Effect of a fermented milk containing Bifidobacterium animalis*” the 274 participants with IBS, consuming 4.4 ounces (125 grammes) of yogurt-like fermented milk daily for six weeks showed reduced IBS symptoms, like bloating and stool frequency. Fermented foods may also aid in the relief of diarrhea, bloating, gas, and constipation. If you have gastrointestinal issues on a regular basis, adding fermented foods to your diet could help.

### **Boosts Your Immune System**

Your immune system is influenced by the bacteria that live in your gut. Fermented foods can boost our immune system, and they also lower your risk of ailments like the common cold due to their rich probiotic content. When you're unwell, eating probiotic-rich foods can also help you heal faster. Furthermore, many fermented foods are high in vitamin C, iron, and zinc, all of which support a healthy immune system.

### **Easier to Digest**

Fermentation breakdown of nutrients present in the foods, which makes them easier to digest than foods that have not been fermented. Take the example of Lactose, the natural sugar in milk, which is broken down into simpler sugars like glucose and galactose during fermentation. That is why

Lactose-intolerant people can consume dairy products like kefir and yogurt. Antinutrients, such as phytates and lectins, which are substances found in seeds, nuts, grains, and legumes that interfere with nutrient absorption, are also broken down by fermentation. Consumption of fermented beans or legumes, such as tempeh, improves the absorption of essential nutrients, making them more nutritious than non-fermented alternatives.

### **Reduces Depression**

Probiotic strains *L. helveticus* and *B. longum* have been associated with a reduction in anxiety and depression symptoms in a few studies. Fermented foods include both probiotics.

### **Weight loss**

While further research is needed, several studies have discovered associations between particular probiotic strains, such as *Lactobacillus rhamnosus* and *Lactobacillus gasseri*, and weight loss and belly fat reduction.

### **Lower risk of cardiovascular disease**

Probiotics may also help in the reduction of total and "bad" LDL cholesterol, as well as the reduction of blood pressure. Fermented foods have been linked to a number of positive health outcomes, including enhanced digestive health, increased immunity, and greater nutrient availability.

Despite all the benefits, if the fermentation is not carried out properly, it may prove to be harmful to health. If you're fermenting food at home, make sure you follow the instructions carefully to ensure your safety. Food can rot due to improper temperatures, long fermentation durations, or unsterile equipment. Negative effects of fermented meals include flatulence and bloating. To minimize spoilage while fermenting at home, always follow the recipes and check the nutrition labels on store-bought

items.

### **Foods that are commonly fermented**

Fermented foods are consumed in many different ways around the world, including:

- Beer
- Bread made with sourdough starter
- Cheese
- Kefir
- Kimchi
- Kombucha
- Miso
- Olives
- Salami
- Sauerkraut
- Tempeh
- Wine
- Yogurt

# Chapter 10:

## Basic Concepts and Equipment for Fermenting



Fermentation is a fascinating process that occurs naturally all over the world. The microbial change of raw or cooked foods into a better-preserved state with a rich, unique flavor profile is known as food fermentation. Sugars are converted by these microbes, usually bacteria and yeast, into acids, gases, and occasionally alcohol. Microbes are part of a complex bacterial ecosystem that has a significant impact on the flavors of the foods we eat. Fermentation infuses food with beneficial microbes while also introducing new and unanticipated flavors to our palates.

Fermentation is a natural, biological process that takes place in an anaerobic environment (a condition when there is a lack of oxygen). The initial step in fermentation is the same as it is in respiration that takes place in our cells. First the glucose turns into pyruvic acid by glycolysis, which produces 2 ATP molecules (ATP is the unit of energy that is produced in a living cell). Pyruvate is then converted to lactic acid, ethanol, or other compounds in the next phase of fermentation. There are different ways to ferment food, and by explaining each type of culture used for the fermentation, I will further explain how it works.

### **Different Types of Fermentation**

Fermentation is the working of living organisms which mingles with the molecules present in our food. While doing so, they end up turning that food even healthier. Here is how different living organisms carry out the same process in their own unique way:

#### **Fermentation Through Yeast**

Sugars present in food are broken down into carbon dioxide and alcohol by yeast. CO<sub>2</sub> is what causes beer to bubble and bread to rise. While yeast is found in a variety of symbiotic cultures, it is solely used to make alcohol ferments and yeast-risen bread. Wild yeasts were used to make beer, wine, cider, and other alcohol ferments in the past. Homebrewers nowadays employ yeast strains that are tailored for vigor and flavor. To prepare quick and easy yeasted bread, you can use either instant yeast or fresh yeast.

#### **Fermentation Through Bacteria**

When most people think of fermented products, they think of bacteria. Sugars are converted to acids by bacterial cultures. Bacterial fermentation is also responsible for the sour flavor of sauerkraut and yoghurt. Although there are many different types of bacterial cultures, the two most common ones are lactic bacteria and acetic acid bacteria. Lactic cultures are used in

the majority of fermented dairy products. Yogurt, sour cream, buttermilk, and cheese are all examples of this. Most vegetables have lactic bacterial cultures on their skin when they come in from the garden. It's why sauerkraut, kimchi, and other fermented veggies are so simple to create.

### **Fermentation Through Symbiotic Cultures**

Many types of fermentation begin with a yeast and bacteria symbiotic culture. Sugar is converted to acids, alcohol, and CO<sub>2</sub> in these cultures. This imparts a distinct flavor to the fermented products. Sourdough bread is created from a wild yeast and bacterium culture. It's easy to catch simply by leaving a flour and water mixture out on your counter for a few days.

Kombucha SCOBYs thrive on sugar and steeped black tea. Your grocery store's sealed bottled beverages are nothing like truly fermented kombucha tea. Kombucha is a fermented tea that is sweet, tart, effervescent, and probiotic. Jun is similar to Kombucha; however, it is made from green tea and honey.

Sucrose and molasses are consumed by water kefir grains. The result is a fizzy beverage that tastes more like soda than Kombucha. Kefir grains are used to make milk kefir. It transforms milk into a thick, acidic, and slightly sparkling drink. Again, homemade kefir differs from store-bought kefir, which often consists solely of bacterial cultures. The mother of real apple cider vinegar is a symbiotic culture of acetic acid bacteria and yeast.

### **Fermentation Through Mold**

Koji kin is a rice or barley fermenting mold. Many Japanese ferments, such as sake and miso, have their origins in this culture. Tempeh is a mushroom-flavored cake made from soybeans fermented by an Indonesian mold culture. Other beans and seeds can also be fermented with it.

### **Equipment:**

Many people feel that fermenting at home is harmful and difficult; my research and instructions aim to dispel this myth by making fermentation

knowledge more widely available. Fermentation does not require expensive equipment; therefore, the fermentation essentials in my little home kitchen are likely already in yours.

### **Cutting tools**

To chop veggies, all you need is one decent knife, but you can also shred them using a vegetable grater or if you have one, a food processor. Simply avoid placing onions in a food processor because the blades will make them bitter.

### **Surface for cutting**

Chopping on a small-sized cutting board is inconvenient for me. A large-sized cutting board provides you with plenty of room to work. However, if you only have a tiny cutting board, that will suffice.

### **Bowls for mixing**

Metal will react with the acid produced by fermentation. The fermentation process does not begin when you simply prepare a ferment, such as vegetables. So, while I advocate storing fermented foods in glass or ceramic containers, metal is totally appropriate for mixing fermented meals.

### **Crocks and jars**

I use glass jars with screw-top lids or bale-top jars with rubber gaskets for fermenting vegetables. The bale-lid type appeals to me since the gasket allows built-up carbon dioxide to escape while keeping air out, preventing jars from exploding. I use the ceramic crock of my slow cooker (removed from the base—you don't want to heat those tomatoes!) to ferment tomatoes. And cover it with a breathable cloth to keep bugs and dirt out. You can use this method to ferment sauerkraut, dill pickles, and other veggies, but I like to weigh everything down in a closed jar.

### **Bottles**

After the Kombucha has fermented, you can either drink it or bottle it. I nearly always put it in a bottle and flavor it. My ginger beer and natural sodas are always kept in bottles. Flip-top bottles, in my experience, produce the most carbonation. These are sometimes found at yard sales and thrift stores. Flip-top bottles are also available in beer and wine breweries. Friends of mine offer me empty ginger beer flip-top bottles.

You may even recycle old screw-top kombucha bottles that you may still have from the days when this stuff cost \$4 a bottle. In the summer, when I brew large-sized batches of Kombucha, I will occasionally bottle it in a half-gallon carboy (fancy terminology for "jug"). Even a non-flip-top bottle should produce acceptable carbonation if you flavor your Kombucha with fresh strawberry, which likes to fizz more than anything else.

### **Weights**

You must submerge vegetables and fruit in liquid in order for them to ferment effectively. This deprives the anaerobic lactic-acid bacteria that ferment your meal of oxygen. Your meal will go mushy or worse if you don't soak it. When it comes to fermenting food, the sole key is to weigh everything down. So, I can see why people would spend a lot of money on stoneware weights.

# Chapter 11:

## Three Essential Ingredients



If you love to have sauerkraut on the table, then you are not alone in this; millions of people around the world enjoy having such a fermented cabbage. Its taste has no parallel, and it is one of the easiest fermentation projects that any beginner can start with. The three essential ingredients that give great sauerkraut are as follows:

### **Bacteria**

Lactose fermentation is the method used to make sauerkraut. To put it (quite) simply, helpful bacteria may be found on the surface of cabbage, as well as all other fruits and vegetables. Lactobacillus is one of those bacteria found in yogurt and other fermented foods. When cabbage is soaked in brine, bacteria start converting carbohydrates in the cabbage to lactic acid, which is a natural preservative that stops harmful bacteria from growing.

Lactobacilli fermentation occurs spontaneously, as these airborne bacteria colonize fresh cabbage leaves, where they thrive. Yeasts are also present, and if the fermentation temperature is too high, squishy sauerkraut with a poor flavor can result. The fermentation process is divided into three stages, which are referred to as population dynamics. The first phase of fermentation is led by anaerobic bacteria such as *Klebsiella* and *Enterobacter*, which produce an acidic environment that favors subsequent bacteria. When the acid levels get too high for many bacteria, the second phase begins, and *Leuconostoc mesenteroides* and other *Leuconostoc* species take over. Various *Lactobacillus* species, notably *L. brevis* and *L. Plantarum*, ferment any leftover carbohydrates in the third phase, decreasing the pH even more.

## **Cabbage**

Microbes can be found on almost anything that grows on the planet. Lactic acid bacteria are the germs that cause fermentation, and when they're given the correct conditions to thrive, they multiply (and out-compete their bacterial competitors). Fermented cabbage (as well as turnips, radishes, and a variety of other vegetables) is extremely excellent. This is most likely due to the proper mix of carbohydrates and water content in the veggies themselves, which help to maintain a specific, desirable texture.

For thousands of years, people have consumed fermented cabbage. The fermentation process prolongs the shelf life of cabbage, allowing it to be consumed long after fresh cabbage would have gone bad. It's manufactured by promoting the growth of particular bacteria known as lactic acid bacteria, which feed Lactose and excrete lactic acid and are used to preserve a variety of foods. To produce fermented cabbage, all you need is salt or water, a container, and the cabbage itself.

## **Salt**

Salt is an important element that, when utilized in the appropriate amounts,

offers the ideal environment for microbe growth and a "happier" ferment. In fermentation, salt promotes the growth of beneficial bacteria while killing off harmful bacteria. When it comes to measuring salt and water, precision is essential, especially when fermenting veggies that will be buried in brine. If you use too much salt, all of the bacteria will die, blocking fermentation. Bad germs will be able to survive if there isn't enough salt. It's a delicate balancing act once more. Use 1-3 teaspoons salt per 4 cups of water as a general rule. This basic metric formula is the easiest approach to figure out how much salt you'll need: To make 3 per cent brine in 1000 milliliters (1 liter) of water, follow these steps: 1000 divided by .03 equals 30. As a result, 30 grams are required (equal to 2.5 tablespoons of salt).

An unprocessed salt that is full of natural vitamins and minerals is recommended for fermentation. Sea salt is one of the greatest types of salt for fermenting. Sea salt includes trace levels of magnesium, potassium, and calcium, among other minerals. Salts such as pickling salt and Kosher salt can also be used. Iodized salt is the type of salt you should avoid using in fermentation. Table salt that has been sprayed with potassium iodate, dextrose, and anti-caking chemicals is known as iodized salt. Iodine can discolor foods in an unnoticeable way over time and inhibits helpful bacteria in fermentation, which is why it's avoided when preserving or fermenting foods. The key to mastering your fermented vegetables is to get the salt and water ratio just right. As it is a precise balance, you will discover that obtaining your desired taste will take a lot of trial and error.

# **Chapter 12:**

## **Recipes Ideas for Different- Flavored Sauerkraut**



# Basic Sauerkraut



*Preparation time: 30 minutes*

*Fermentation time: 4 weeks*

*Total time: 4 weeks 30 minutes*

*Servings: 16*

## *How to Prepare*

1. Remove the outer leaves of cabbage head, reserving 1 large-sized leaf.
2. Discard the remaining removed leaves.
3. Cut out the core of cabbage head and rinse well.

4. Drain the cabbage head well.
5. Thinly shred the remaining cabbage.
6. In a large-sized glass bowl, place the cabbage and salt. Toss to coat well.
7. Set aside for about 15 minutes.
8. Then, with your hands, massage the cabbage for about 5 minutes.
9. In a large-sized sterilized mason jar, place the cabbage with any liquid, pressing with your fist occasionally.
10. Arrange the reserved cabbage leaf of over the surface of sliced cabbage.
11. With a fermenting weight, weigh down the cabbage.
12. With a clean cloth, cover the mouth of the mason jar loosely and then secure it with a rubber band.
13. Set the jar of sauerkraut aside at a cool room temperature for 1-4 weeks. (If brine does not cover the cabbage completely after 24 hours, then dissolve 1 teaspoon of salt in 1 cup of cold water and add into the jar to submerge the cabbage).
14. Burp the jar of sauerkraut daily to release excess pressure.
15. After fermentation, skim off the scum from top.
16. This sauerkraut can be preserved in refrigerator for 2-3 months.

# Caraway Seed Sauerkraut



***Preparation time: 30 minutes***

***Fermentation time: 10 days***

***Total time: 10 days 30 minutes***

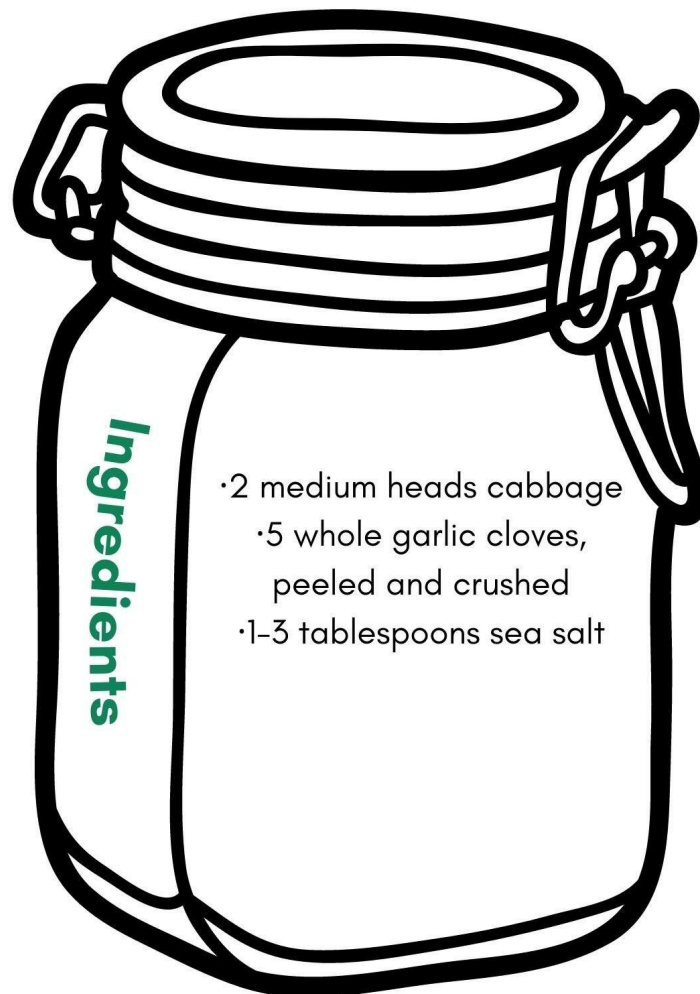
***Servings: 16***

## ***How to Prepare***

1. Remove the outer leaves of cabbage head, reserving 1 large-sized leaf.
2. Discard the remaining removed leaves.
3. Cut out the core of cabbage head and rinse well.

4. Drain the cabbage head well.
5. Thinly shred the remaining cabbage.
6. In a large-sized glass bowl, place the cabbage and salt and with your hands, massage the cabbage for about 5 minutes.
7. Add the caraway seeds, juniper berries, and bay leaves. Mix well.
8. In a large-sized sterilized mason jar, place the cabbage with any liquid, pressing with your fist occasionally.
9. Arrange the reserved cabbage leaf of over the surface of sliced cabbage.
10. With a fermenting weight, weigh down the cabbage.
11. With a clean cloth, cover the mouth of the mason jar loosely and then secure it with a rubber band.
12. Set the jar of sauerkraut aside at a cool room temperature for 1-4 weeks. (If brine does not cover the cabbage completely after 24 hours, then dissolve 1 teaspoon of salt in 1 cup of cold water and add into the jar to submerge the cabbage).
13. Burp the jar of sauerkraut daily to release excess pressure.
14. After fermentation, skim off the scum from top.
15. This sauerkraut can be preserved in refrigerator for 2-3 months.

# Garlicy Sauerkraut



***Preparation time: 30 minutes***

***Fermentation time: 3 weeks***

***Total time: 3 weeks 30 minutes***

***Servings: 32***

## ***How to Prepare***

1. Remove the outer leaves from cabbage heads, reserving 1 large-sized leaf.
2. Discard the remaining removed leaves.
3. Cut out the core of cabbage heads and rinse well.

4. Drain the cabbage heads well.
5. Next, cut the cabbage into very thin ribbons.
6. In a large-sized glass bowl, place the cabbage, garlic, and salt. Mix well.
7. With a pounding tool, pound the cabbage mixture for about 3-5 minutes.
8. With a clean kitchen towel, cover the bowl and set aside for 30 minutes, pounding occasionally.
9. In a large-sized sterilized mason jar, place the cabbage with all the liquid.
10. Arrange the reserved cabbage leaf of over the surface of sliced cabbage.
11. With a fermenting weight, weigh down the cabbage.
12. With a clean cloth, cover the mouth of the mason jar loosely and then secure it with a rubber band.
13. Set the jar aside at a cool room temperature for 1-3 weeks. (If the cabbage is not submerged in the brine after 24 hours, then dissolve 1 teaspoon of the salt in 1 cup of water and add into the jar to submerge the cabbage).
14. Burp the jar of sauerkraut daily to release excess pressure.
15. After fermentation, skim off the scum from top.
16. This sauerkraut can be preserved in refrigerator for 2-3 months.

# Carrot & Ginger Sauerkraut



***Preparation time: 30 minutes***

***Fermentation time: 4 weeks***

***Total time: 4 weeks 30 minutes***

***Servings: 24***

## ***How to Prepare***

1. Remove the outer leaves of cabbage head, reserving 1 large-sized leaf.
2. Discard the remaining removed leaves.
3. Cut out the core of cabbage head and rinse well.

4. Drain the cabbage head well.
5. Thinly shred the remaining cabbage.
6. In a bowl, add cabbage, carrot, garlic, ginger, and salt. Mix well.
7. Set the bowl of cabbage mixture aside for 30-60 minutes.
8. With your hands, massage the cabbage mixture for 2-5 minutes.
9. In a large-sized sterilized mason jar, place the cabbage mixture with all the liquid.
10. Arrange the reserved cabbage leaf of over the surface of sliced cabbage.
11. With a fermenting weight, weigh down the cabbage.
12. With a clean cloth, cover the mouth of the mason jar loosely and then secure it with a rubber band.
13. Set the jar aside at a cool room temperature for 1-4 weeks. (If the cabbage is not submerged in the brine after 24 hours, then dissolve 1 teaspoon of the salt in 1 cup of water and add into the jar to submerge the cabbage).
14. Burp the jar of sauerkraut daily to release excess pressure.
15. After fermentation, skim off the scum from top.
16. This sauerkraut can be preserved in refrigerator for 2-3 months.

# Carrot & Onion Sauerkraut



***Preparation time: 30 minutes***

***Fermentation time: 3 weeks***

***Total time: 3 weeks 30 minutes***

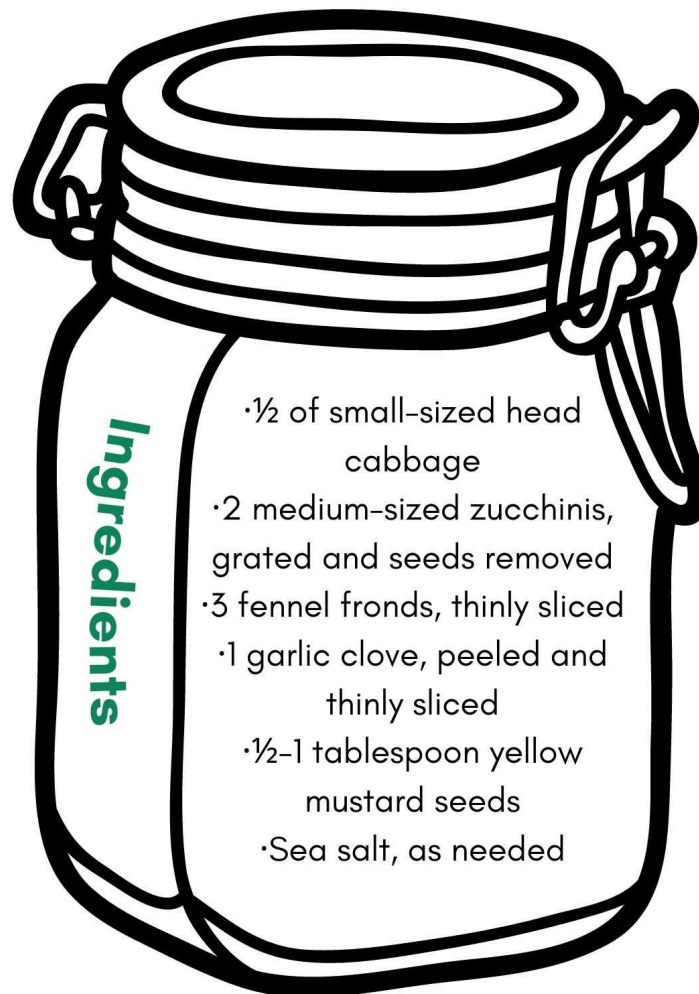
***Servings: 32***

## ***How to Prepare***

1. Remove the outer leaves of cabbage head, reserving 1 large-sized leaf.
2. Discard the remaining removed leaves.
3. Cut out the core of cabbage head and rinse well.

4. Drain the cabbage head well.
5. Thinly shred the remaining cabbage.
6. In a large-sized bowl, add the cabbage, carrot, onion, and salt. With your hands, massage for about 5 minutes.
7. In a large-sized sterilized mason jar, place the cabbage mixture with all the liquid.
8. Arrange the reserved cabbage leaf over the surface of sliced cabbage.
9. With a fermenting weight, weigh down the cabbage.
10. With a clean cloth, cover the mouth of the mason jar loosely and then secure it with a rubber band.
11. Set the jar aside at a cool room temperature for 2-3 weeks. (If the cabbage is not submerged in the brine after 24 hours, then dissolve 1 teaspoon of the salt in 1 cup of water and add into the jar to submerge the cabbage).
12. Burp the jar of sauerkraut daily to release excess pressure.
13. After fermentation, skim off the scum from top.
14. This sauerkraut can be preserved in refrigerator for 2-3 months.

# Zucchini Sauerkraut



***Preparation time: 30 minutes***

***Fermentation time: 3 weeks***

***Total time: 3 weeks 30 minutes***

***Servings: 32***

## ***How to Prepare***

1. Remove the outer leaves of cabbage head, reserving 1 large-sized leaf.
2. Discard the remaining removed leaves.
3. Cut out the core of cabbage head and rinse well.

4. Drain the cabbage head well.
5. Thinly shred the remaining cabbage.
6. In a large-sized bowl, add the cabbage, zucchini, fennel fronds, garlic, mustard seeds, and salt. With your hands, massage for about 5 minutes.
7. In a large-sized sterilized mason jar, place the cabbage mixture with all the liquid.
8. Arrange the reserved cabbage leaf of over the surface of sliced cabbage.
9. With a fermenting weight, weigh down the cabbage.
10. With a clean cloth, cover the mouth of the mason jar loosely and then secure it with a rubber band.
11. Set the jar aside at a cool room temperature for 2-3 weeks. (If the cabbage is not submerged in the brine after 24 hours, then dissolve 1 teaspoon of the salt in 1 cup of water and add into the jar to submerge the cabbage).
12. Burp the jar of sauerkraut daily to release excess pressure.
13. After fermentation, skim off the scum from top.
14. This sauerkraut can be preserved in refrigerator for 2-3 months.

# Cucumber Sauerkraut



***Preparation time: 30 minutes***

***Fermentation time: 3 weeks***

***Total time: 3 weeks 30 minutes***

***Servings: 16***

## ***How to Prepare***

1. Remove the outer leaves of cabbage head, reserving 1 large-sized leaf.
2. Discard the remaining removed leaves.
3. Cut out the core of cabbage head and rinse well.

4. Drain the cabbage head well.
5. Thinly shred the remaining cabbage.
6. In a large-sized bowl, add the cabbage and remaining ingredients. With your hands, massage for about 5 minutes.
7. In a large-sized sterilized mason jar, place the cabbage mixture with all the liquid.
8. Arrange the reserved cabbage leaf of over the surface of sliced cabbage.
9. With a fermenting weight, weigh down the cabbage.
10. With a clean cloth, cover the mouth of the mason jar loosely and then secure it with a rubber band.
11. Set the jar aside at a cool room temperature for 2-3 weeks. (If the cabbage is not submerged in the brine after 24 hours, then dissolve 1 teaspoon of the salt in 1 cup of water and add into the jar to submerge the cabbage).
12. Burp the jar of sauerkraut daily to release excess pressure.
13. After fermentation, skim off the scum from top.
14. This sauerkraut can be preserved in refrigerator for 2-3 months.

# Greens Sauerkraut



***Preparation time: 30 minutes***

***Fermentation time: 3 weeks***

***Total time: 3 weeks 30 minutes***

***Servings: 32***

## ***How to Prepare***

1. Remove the outer leaves of cabbage head, reserving 1 large-sized leaf.
2. Discard the remaining removed leaves.
3. Cut out the core of cabbage head and rinse well.

4. Drain the cabbage head well.
5. Thinly shred the remaining cabbage.
6. In a large-sized bowl, add the cabbage and remaining ingredients. With your hands, massage for about 5 minutes.
7. In a large-sized sterilized mason jar, place the cabbage mixture with all the liquid.
8. Arrange the reserved cabbage leaf of over the surface of sliced cabbage.
9. With a fermenting weight, weigh down the cabbage.
10. With a clean cloth, cover the mouth of the mason jar loosely and then secure it with a rubber band.
11. Set the jar aside at a cool room temperature for 2-3 weeks. (If the cabbage is not submerged in the brine after 24 hours, then dissolve 1 teaspoon of the salt in 1 cup of water and add into the jar to submerge the cabbage).
12. Burp the jar of sauerkraut daily to release excess pressure.
13. After fermentation, skim off the scum from top.
14. This sauerkraut can be preserved in refrigerator for 2-3 months.

# Scallion & Cilantro Sauerkraut



***Preparation time: 30 minutes***

***Fermentation time: 3 weeks***

***Total time: 3 weeks 30 minutes***

***Servings: 32***

## ***How to Prepare***

1. Remove the outer leaves of cabbage head, reserving 1 large-sized leaf.
2. Discard the remaining removed leaves.
3. Cut out the core of cabbage head and rinse well.

4. Drain the cabbage head well.
5. Thinly shred the remaining cabbage.
6. In a large-sized bowl, add the cabbage and remaining ingredients. With your hands, massage for about 5 minutes.
7. In a large-sized sterilized mason jar, place the cabbage mixture with all the liquid.
8. Arrange the reserved cabbage leaf over the surface of sliced cabbage.
9. With a fermenting weight, weigh down the cabbage.
10. With a clean cloth, cover the mouth of the mason jar loosely and then secure it with a rubber band.
11. Set the jar aside at a cool room temperature for 2-3 weeks. (If the cabbage is not submerged in the brine after 24 hours, then dissolve 1 teaspoon of the salt in 1 cup of water and add into the jar to submerge the cabbage).
12. Burp the jar of sauerkraut daily to release excess pressure.
13. After fermentation, skim off the scum from top.
14. This sauerkraut can be preserved in refrigerator for 2-3 months.

# Apple Sauerkraut



***Preparation time: 30 minutes***

***Fermentation time: 3 weeks***

***Total time: 3 weeks 30 minutes***

***Servings: 24***

## ***How to Prepare***

1. Remove the outer leaves of cabbage head, reserving 1 large-sized leaf.
2. Discard the remaining removed leaves.
3. Cut out the core of cabbage head and rinse well.

4. Drain the cabbage head well.
5. Thinly shred the remaining cabbage.
6. In a large-sized bowl, add the cabbage and remaining ingredients. With your hands, massage for about 5 minutes.
7. Next place a heavy plate over the cabbage to weigh it down and set aside at room temperature for about 4 hours, tossing and squeezing the cabbage 4-5 times.
8. In a large-sized sterilized mason jar, place the cabbage mixture with all the liquid.
9. Arrange the reserved cabbage leaf of over the surface of sliced cabbage.
10. With a fermenting weight, weigh down the cabbage.
11. With a clean cloth, cover the mouth of the mason jar loosely and then secure it with a rubber band.
12. Set the jar aside at a cool room temperature for 2-3 weeks. (If the cabbage is not submerged in the brine after 24 hours, then dissolve 1 teaspoon of the salt in 1 cup of water and add into the jar to submerge the cabbage).
13. Burp the jar of sauerkraut daily to release excess pressure.
14. After fermentation, skim off the scum from top.
15. This sauerkraut can be preserved in refrigerator for 2-3 months.

# Chapter 13: Ideas for Fermenting Vegetables and some Fruits



# Fermented Pearl Onions



*Preparation time: 15 minutes*

*Fermentation time: 4 weeks*

*Total time: 4 weeks 15 minutes*

*Servings: 12*

## *How to Prepare*

1. In a medium-sized bowl, dissolve the salt in water.
2. In a large-sized sterilized glass jar, arrange the onions.
3. Place the salted water over the onions, pressing with your fist occasionally.

4. With the lid, cover the jar loosely.
5. Set the jar aside at a cool room temperature for 3-4 weeks.
6. Burp the jar of onions daily to release excess pressure.
7. These fermented onions can be preserved in refrigerator up to 6 months.

# Fermented Carrots



*Preparation time: 15 minutes*

*Cooking time: 5 minutes*

*Fermentation time: 10 days*

*Total time: 10 days 20 minutes*

*Servings: 16*

## *How to Prepare*

1. In a small-sized saucepan, add the water and bring to a gentle boil.
2. Remove the saucepan of water from heat and stir in the salt until

dissolved.

3. In a large-sized sterilized glass jar, arrange the carrot sticks.
4. Place the salted water over the carrot sticks.
5. Add enough water to cover the carrot sticks, pressing with your fist occasionally.
6. With a fermenting weight, weigh down the carrot sticks.
7. With the lid, cover the jar loosely.
8. Set the jar aside at a cool room temperature for 4-10 days.
9. Burp the jar of onions daily to release excess pressure.
10. These fermented carrots can be preserved in refrigerator up to 6 months.

# Fermented Cauliflower



***Preparation time: 15 minutes***

***Fermentation time: 5 days***

***Total time: 5 days 15 minutes***

***Servings: 24***

## ***How to Prepare***

1. In a medium-sized bowl, dissolve the salt in water.
2. Divide the cauliflower in 6 (1-pint) sterilized glass jars.
3. Place the salted water over the cauliflower in each jar, pressing with your fist occasionally.

4. With a fermenting weight, weigh down the cauliflower.
5. With the lid, cover each jar loosely.
6. Set the jar aside at a cool room temperature for 3-5 days.
7. Burp the jar of cauliflower daily to release excess pressure.
8. This fermented cauliflower can be preserved in refrigerator up to 9 months.

# Fermented Green Beans



*Preparation time: 15 minutes*

*Fermentation time: 2 weeks 48 hours*

*Total time: 2 weeks 48¼ hours*

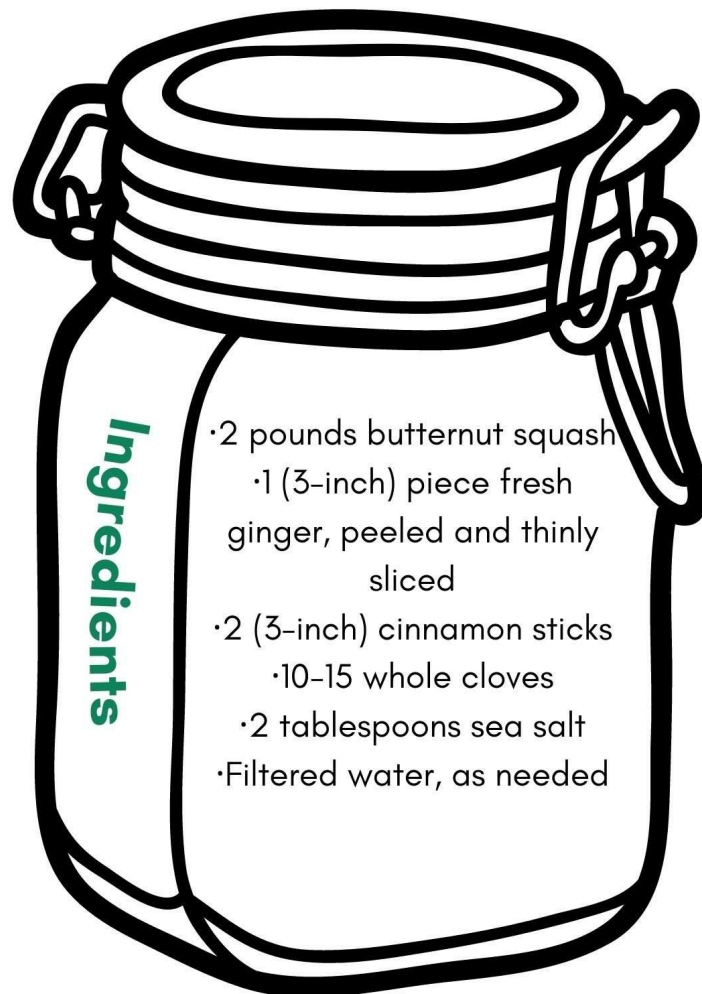
*Servings: 4*

## *How to Prepare*

1. In a medium-sized bowl, dissolve the salt in water.
2. Into 2 large-sized sterilized glass jars, evenly divide the dill, garlic, red pepper flakes, and black peppercorns.
3. Arrange the green beans on top, standing up.

4. Place the salted water over the green beans, pressing with your fist occasionally.
5. With the lid, cover the jar loosely.
6. Set the jar aside at a cool room temperature for 24-48 hours.
7. After 24 hours, burp the jar of green beans once to release excess pressure.
8. Next place the jar into the door of refrigerator for 1-2 weeks before serving.
9. These fermented green beans can be preserved in refrigerator up to 9 months.

# Fermented Butternut Squash



*Preparation time: 15 minutes*

*Fermentation time: 3 weeks*

*Total time: 3 weeks 15 minutes*

*Servings: 6*

## *How to Prepare*

1. Remove the stem and peel of butternut squash.
2. Reserve 1 piece of peel.
3. Cut the squash in half and then remove the seeds and fibers.
4. Cut the squash into 1-inch cubes.

5. In a large-sized sterilized glass jar, place the squash cubes, reserved squash peel piece, ginger, cinnamon sticks, cloves, and salt.
6. Add enough water to cover the squash cubes, pressing with your fist occasionally.
7. With a long wooden spoon, stir until salt dissolves completely.
8. With a fermenting weight, weigh down the squash.
9. With the lid, cover the jar loosely.
10. Set the jar aside at a cool room temperature for 1 week.
11. Burp the jar of squash daily to release excess pressure.
12. Next place the jar into the door of refrigerator for 1-2 weeks before serving.
13. This fermented squash can be preserved in refrigerator up to 9 months.

# Fermented Strawberries



***Preparation time: 10 minutes***

***Fermentation time: 4 days***

***Total time: 4 days 10 minutes***

***Servings: 8***

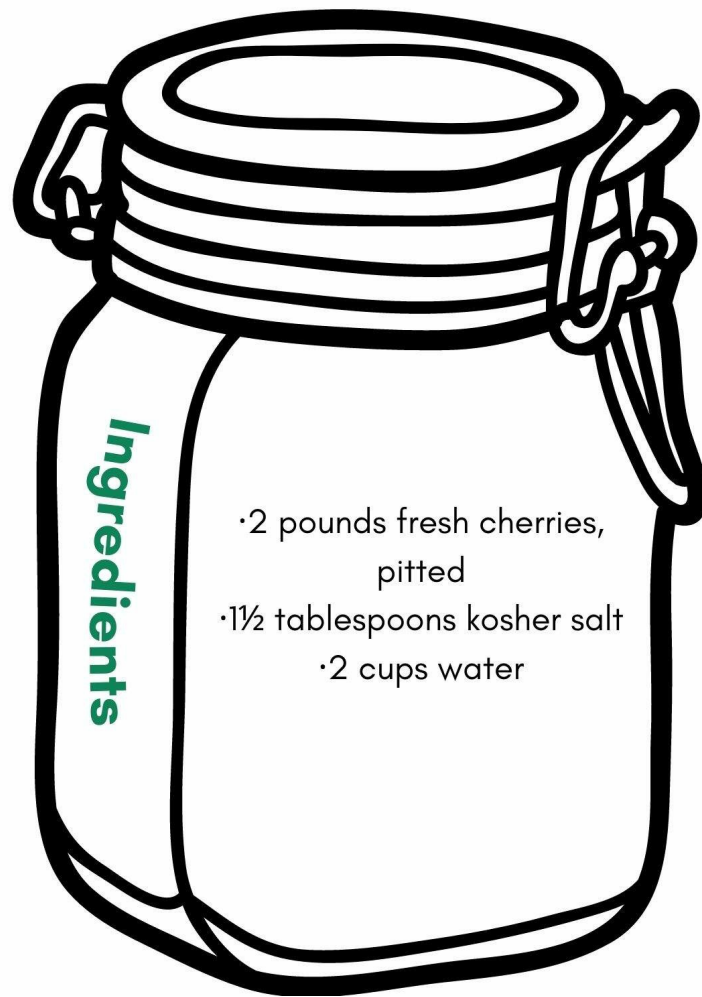
## ***How to Prepare***

1. In a large-sized sterilized glass jar, place the strawberries, vinegar and salt.
2. Add enough water to cover the strawberries.
3. With a fermenting weight, weigh down the strawberries, pressing

with your fist occasionally.

4. With the lid, cover the jar loosely.
5. Set the jar aside at a cool room temperature for 2-4 days.
6. Burp the jar of strawberries daily to release excess pressure.
7. These fermented strawberries can be preserved in refrigerator for 3 weeks.

# Fermented Cherries



*Preparation time: 15 minutes*

*Fermentation time: 1 week 2 days*

*Total time: 1 week 2 days 15 minutes*

*Servings: 16*

## *How to Prepare*

1. In a large-sized bowl, add cherries and salt. Toss to coat well.
2. In a large-sized sterilized glass jar, place the cherries.
3. Add enough water to cover the cherries.
4. With a fermenting weight, weigh down the cherries, pressing with

your fist occasionally.

5. With the lid, cover the jar loosely.
6. Set the jar aside at a cool room temperature for 1-2 days.
7. Next place the jar into the door of refrigerator for 1 week before serving.
8. These fermented cherries can be preserved in refrigerator for about 2 months.

# Fermented Apples



***Preparation time: 15 minutes***

***Cooking time: 5 minutes***

***Fermentation time: 2 weeks***

***Total time: 2 weeks 20 minutes***

***Servings: 16***

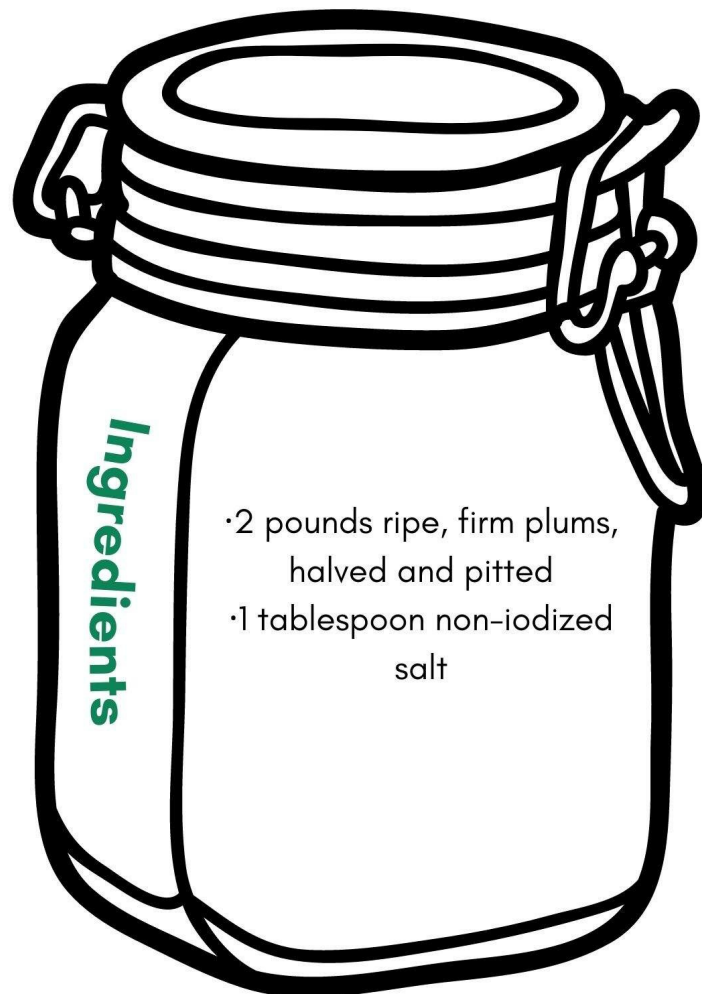
## ***How to Prepare***

1. In a medium-sized, non-reactive saucepan, add water, lemon juice, honey, lemon zest, cinnamon stick pieces, and salt over medium

heat and cook for 3-5 minutes, stirring continuously.

2. Remove the saucepan of water mixture from heat and set aside to cool.
3. Place the apple slices in a large-sized glass jar.
4. Place the water mixture over the apple slices, pressing with your fist occasionally.
5. With a fermenting weight, weigh down the apple slices.
6. With the lid, cover the jar loosely.
7. Set the jar aside at a cool room temperature for 5-7 days.
8. Burp the jar of apples daily to release excess pressure.
9. Next place the jar into the door of refrigerator for 1 week before serving.
10. These fermented apples can be preserved in refrigerator up to 1 month.

# Fermented Plums



*Preparation time: 15 minutes*

*Fermentation time: 2 weeks*

*Total time: 2 weeks 15 minutes*

*Servings: 16*

## *How to Prepare*

1. Into a large-sized bowl, add plums and salt. Toss to coat well.
2. Divide the plums into 2-3 vacuum-seal bags, keeping a little space between them.
3. Squeeze out the excess air from each bag and then seal them tightly.

4. Place the bags in a warm place for 5-7 days.
5. Burp the bags once daily to release excess pressure.
6. The transfer the plums with all the liquid into a large-sized glass jar.
7. Cover the jar tightly and place the jar into the door of refrigerator for 1 week before serving.
8. These fermented plums can be preserved in refrigerator for about 1 month.

# Fermented Peach



***Preparation time: 15 minutes***

***Fermentation time: 6 days***

***Total time: 6 days 15 minutes***

***Servings: 6***

## ***How to Prepare***

1. In a large-sized bowl, add peach pieces, basil leaves, honey, and salt. Mix well.
2. Place the peach chunks in a large-sized glass jar.
3. With the lid, cover the jar tightly.

4. Set the jar aside at a cool room temperature for 4-6 days.
5. Burp the jar of peaches daily to release excess pressure.
6. These fermented peaches can be preserved in refrigerator up to 2 weeks.

# Chapter 14: Fermented Sour Tonic Beverages Recipes



# Ryazhenka (Baked Milk)



*Preparation time: 10 minutes*

*Baking time: 5 hours*

*Fermentation time: 18 hours*

*Total time: 23 hours 10 minutes*

*Servings: 4*

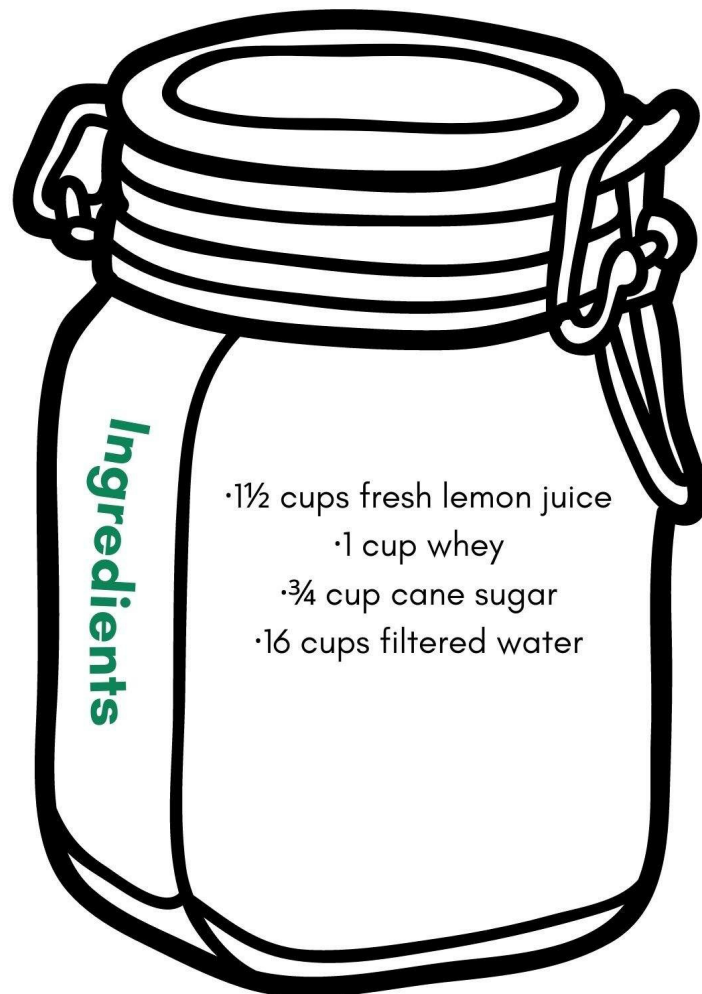
## *How to Prepare*

1. Preheat your oven to 350°F.
2. In a 9x13-inch casserole dish, place the milk and bake for

approximately 4-5 hours or until a golden-brown crust appears on top of the milk.

3. Remove the casserole dish from oven.
4. Carefully remove the golden crust from the top of milk.
5. Set aside to cool until the temperature of milk reaches to 70-77°F.
6. Transfer the baked milk into a large-sized sterilized glass jar and stir in cultured buttermilk.
7. Seal the jar of milk and set aside in a warm place for 12-18 hours.
8. Now transfer the fermented milk into sealed bottles and serve.
9. This fermented milk can be preserved in refrigerator for up to 2-3 weeks.

# Lemonade



***Preparation time: 10 minutes***

***Fermentation time: 4 days***

***Total time: 4 days 10 minutes***

***Servings: 16***

## ***How to Prepare***

1. In a large-sized sterilized glass jar, add the lemon juice, whey, and sugar. Mix well.
2. Add the water and stir until sugar dissolves completely.
3. Seal the jar and set aside at room temperature for 2 days.

4. Through a fine mesh strainer, strain the lemonade into fermentation-proof flip-top bottles.
5. Seal the bottles and refrigerate for 2 days.
6. Burp the bottles once daily to release excess pressure.
7. This lemonade can be preserved in refrigerator for up to 10 days.

# Blackberry Lemonade



*Preparation time: 10 minutes*

*Cooking time: 15 minutes*

*Fermentation time: 2½ days*

*Total time: 2½ days 25 minutes*

*Servings: 8*

## *How to Prepare*

1. In a medium-sized non-reactive saucepan, add blackberries, water and lemon juice over high heat.

2. Immediately cover the saucepan and bring to a gentle boil.
3. Next adjust the heat to low and simmer for about 5-8 minutes, mashing the berries with the back of a wooden spoon.
4. Add in the sugar and stir until dissolves.
5. Remove the saucepan of berries mixture from heat and set aside to cool completely.
6. With a fine-mesh strainer, strain the blackberry mixture, pressing the pulp with the back of a spoon.
7. Discard the pulp.
8. Add the fermented lemonade and stir to combine.
9. Place the blackberry lemonade into fermentation-proof flip-top bottles.
10. Seal the bottles and set aside at room temperature for 2 days.
11. Burp the bottles once daily to release excess pressure.
12. Then refrigerate the bottles for 8-12 hours before serving.
13. This blackberry lemonade can be preserved in refrigerator for up to 2 weeks.

# Sima (Soda Pop)



***Preparation time: 15 minutes***

***Fermentation time: 7 days***

***Total time: 7 days 15 minutes***

***Servings: 20***

## ***How to Prepare***

1. With a potato peeler, remove the outer yellow rind of each lemon in strips.
2. Next trim off the bitter inner white rind of each lemon and discard.
3. In a large-sized sterilized glass jar, place the peeled lemons, lemon

zest strips, ½ cup white sugar, and brown sugar. Stir to combine.

4. Place the hot water on top and set aside until lukewarm.
5. Add the yeast and stir to combine.
6. Seal the jar of soda and set aside at room temperature for 24-48 hours.
7. Through a fine mesh strainer, strain the soda into 2-3 fermentation-proof flip-top bottles.
8. Place 5-6 raisins and 1 teaspoon of white sugar into each bottle.
9. Seal the bottles and refrigerate for 2-5 days before serving.

# Pear Cider



***Preparation time: 15 minutes***

***Fermentation time: 9 weeks 3 days***

***Total time: 9 weeks 3 days 15 minutes***

***Servings: 10***

## ***How to Prepare***

1. In a small-sized bowl, dissolve brewing yeast in water.
2. Set aside for at least 5 minutes.
3. In another large-sized bowl, add the pear juice, acid powder, and yeast nutrient. Stir until sugar dissolves completely.

4. In a large-sized sterilized glass jar, place the pear juice mixture and yeast mixture. Stir to combine.
5. Seal the jar of cider and set aside at room temperature for 2-3 days.
6. With a clean, dry kitchen towel, cover the jar and secure with a rubber band.
7. Set the jar of cider aside at room temperature for 2-3 weeks.
8. Through a fine mesh strainer, strain the cider and transfer into another large-sized sterilized glass jar.
9. Again, cover the jar with kitchen towel and secure with a rubber band. Set the jar of cider aside at room temperature for 3-6 weeks.
10. Next transfer the cider into sealed bottles and serve.
11. This cider can be preserved for 4-6 months.

# Apple Cider



***Preparation time: 10 minutes***

***Cooking time: 5 minutes***

***Fermentation time: 4½ weeks***

***Total time: 4½ weeks 15 minutes***

***Servings: 10***

## ***How to Prepare***

1. In a saucepan, add half of apple juice over medium heat and cook until just hot.

2. Add in brown sugar and stir until dissolves completely.
3. Remove the saucepan of juice mixture from heat.
4. In a large-sized sterilized glass jar, place the raisins, cinnamon stick, and cloves.
5. Place the hot juice mixture on top and set aside for about 20 minutes.
6. Top with the remaining apple juice, leaving about 2-inch space from the top.
7. Cover the jar and shake to mix well.
8. Uncover the jar and stir in the yeast.
9. Cover the jar and shake for 1-2 minutes.
10. Set the jar of cider aside at room temperature for 12 hours.
11. Next seal the jar tightly and set aside at room temperature for 3-4 weeks.
12. Next transfer the cider into sealed bottles and serve.
13. This cider can be preserved for 4-6 months.

# Ginger Ale



***Preparation time: 10 minutes***

***Cooking time: 15 minutes***

***Fermentation time: 6 days***

***Total time: 6 days 25 minutes***

***Servings: 4***

## ***How to Prepare***

1. In a medium-sized saucepan, add water and ginger over medium-high heat and cook until boiling.

2. Next adjust the heat to low and simmer for about 10 minutes.
3. Remove the saucepan of ginger water from heat. Stir in sugar and molasses until it dissolves completely.
4. Through a strainer, strain the ginger water into a heatproof bowl.
5. Set the jar of ginger water aside to cool to room temperature.
6. Add the lemon juice and mix well.
7. Add in the ginger bug and stir to combine well.
8. Transfer the ginger ale into a large-sized sterilized glass jar.
9. Seal the jar of ginger ale and set aside at room temperature for 2-6 days.
10. Burp the jar of ginger ale once daily to release excess pressure.
11. Now transfer the ginger ale into sealed bottles and serve.
12. This ginger ale can be preserved in refrigerator for up to 2 weeks.

# Quinoa Rejuvelac



*Preparation time: 20 minutes*

*Fermentation time: 8 days 10 hours*

*Total time: 8 days 10 hours 20 minutes*

*Servings: 2*

## *How to Prepare*

1. In a large-sized sterilized glass jar, place the quinoa and top with the water to cover.
2. With cheesecloth, cover the jar tightly and secure with a rubber band.

3. Place the jar of quinoa mixture in a cool dark place for 5-10 hours.
4. Through a fine-mesh strainer, drain the quinoa and rinse under cold running water.
5. Again, drain the quinoa completely and return into the jar with enough water to cover.
6. With cheesecloth, cover the jar tightly and secure with a rubber band.
7. Place the jar of quinoa mixture in a cool dark place for 2-3 days.
8. Repeat the process of the rinsing and draining after every 3-8 hours.
9. After 3 days, through a fine-mesh strainer, drain the quinoa and rinse under cold running water.
10. Again, drain the quinoa completely and return into the jar with 2 cups of fresh water.
11. With cheesecloth, cover the jar tightly and secure with a rubber band.
12. Place the jar of quinoa mixture in a cool dark place for 3-5 days, stirring once daily.
13. Through a fine-mesh strainer, drain the quinoa and transfer the liquid into a bottle.
14. This rejuvelac can be preserved in refrigerator for up to 2 weeks.

# Millet Boza



*Preparation time: 10 minutes*

*Cooking time: 30 minutes*

*Fermentation time: 5 days*

*Total time: 5 days 40 minutes*

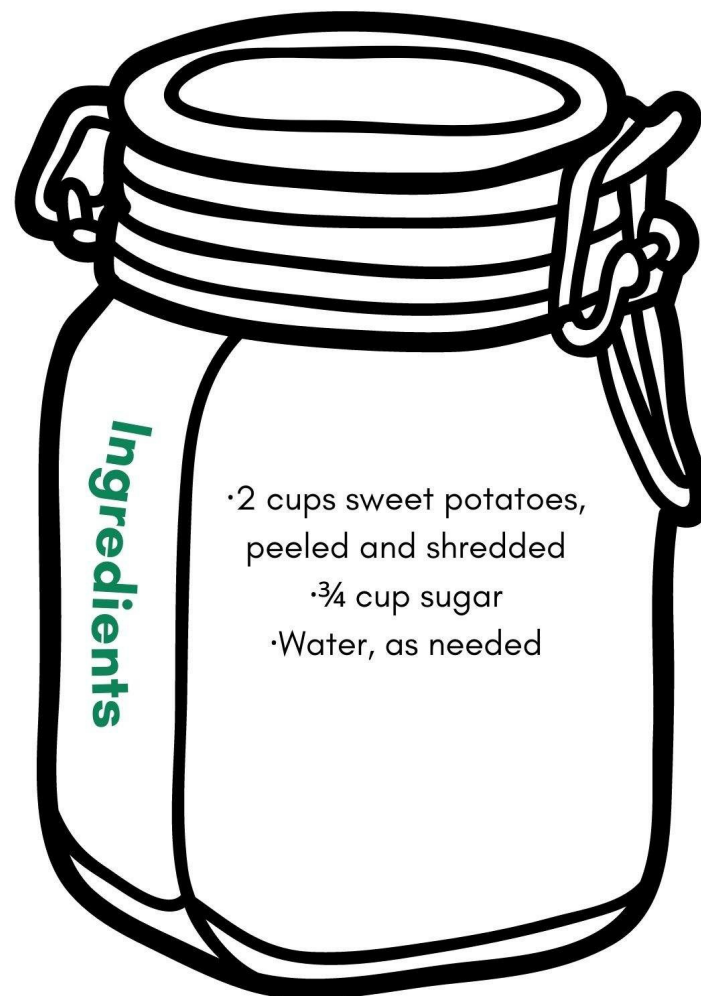
*Servings: 4*

## *How to Prepare*

1. In a large-sized saucepan, add water and millet over medium-high heat and cook until boiling.

2. Next adjust the heat to low and simmer for about 20-25 minutes or until soft.
3. Remove the saucepan of millet from heat and, with an immersion blender, blend until smooth.
4. Transfer the pureed millet into a large-sized sterilized glass jar.
5. Add in 1 cup of sugar and stir to combine well.
6. Set aside to cool completely.
7. With plastic wrap, cover the jar tightly and secure with a rubber band.
8. Place the jar of millet mixture in a cool dark place for 3 days, stirring once daily.
9. Through a fine-mesh strainer, strain the millet mixture and transfer the liquid into a bowl.
10. Add the desired amount of sugar and mix well.
11. Transfer the strained liquid into a bottle and refrigerate for 2 days before serving.
12. This millet boza can be preserved in refrigerator for up to 4 days.

# Sweet Potato Fly



*Preparation time: 10 minutes*

*Fermentation time: 9 days*

*Total time: 9 days 10 minutes*

*Servings: 6*

## *How to Prepare*

1. In a ( $\frac{1}{2}$ -gallon) sterilized glass jar, add the shredded sweet potato and sugar. Stir to combine.
2. Add enough water to cover the sweet potato, leaving about 1-inch space from the top.

3. With cheesecloth, cover the jar tightly and secure with a rubber band.
4. Place the jar of sweet potato mixture at room temperature for 3-5 days. (If yeast accumulates on the top surface of sweet potato mixture, then scoop it out).
5. Through a fine-mesh strainer, strain the sweet potato mixture and transfer the liquid into airtight bottles, leaving about 2-inch space from the top.
6. Seal the bottles and place at room temperature for 2-4 days.
7. Burp the bottles once daily to release excess pressure.
8. This millet sweet potato fly can be preserved in refrigerator for 2-4 weeks.

# **Chapter 15:**

## **Fermented Beers and other Alcoholic Beverage Recipes**



# Ginger Beer



***Preparation time: 10 minutes***

***Fermentation time: 10 days***

***Total time: 10 days 10 minutes***

***Servings: 4***

## ***How to Prepare***

1. In a large-sized glass sterilized jar, add ginger and remaining ingredients. Stir until sugar has dissolved completely.
2. With a clean, dry kitchen towel, cover the jar and secure with a rubber band.

3. Place the jar in the warm and dark place for 3-5 days, stirring once daily.
4. Through a cheesecloth-lined strainer, strain the liquid into fermentation-proof flip-top bottles.
5. Seal the bottles and set aside at room temperature about 2-5 days.
6. Burp the bottles once daily to release excess pressure.
7. This ginger beer can be preserved in refrigerator for 4 weeks.

# Root Beer



***Preparation time: 10 minutes***

***Cooking time: 25 minutes***

***Fermentation time: 7 days***

***Total time: 7 days 35 minutes***

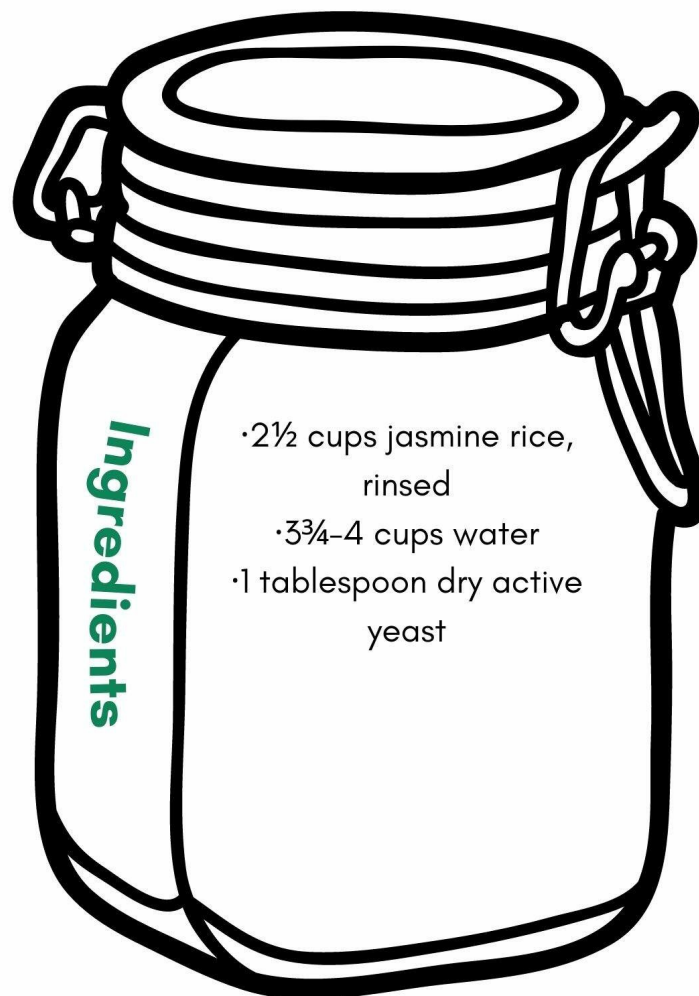
***Servings: 15***

## ***How to Prepare***

1. In a large-sized saucepan, add water, roots, and sugar over high heat and cook until boiling.

2. Next adjust the heat to low and simmer for about 20 minutes.
3. Remove the saucepan of root mixture from heat and set aside, covered, for about 30 minutes.
4. Through a fine mesh strainer, strain the root beer mixture and discard the roots.
5. Transfer the mixture into 3 fermentation-proof flip-top bottles.
6. Set aside the bottles to cool to room temperature.
7. Divide the whey into bottles.
8. Seal the bottles and gently shake to mix.
9. Set the bottles aside at room temperature for 2-4 days.
10. Burp the bottles once after 2 days to release excess pressure.
11. Then refrigerate the bottles for 3 days.
12. Burp the bottles once daily to release excess pressure.

# Rice Beer



***Preparation time: 10 minutes***

***Cooking time: 20 minutes***

***Fermentation time: 7 days 18 hours***

***Total time: 7 days 18½ hours***

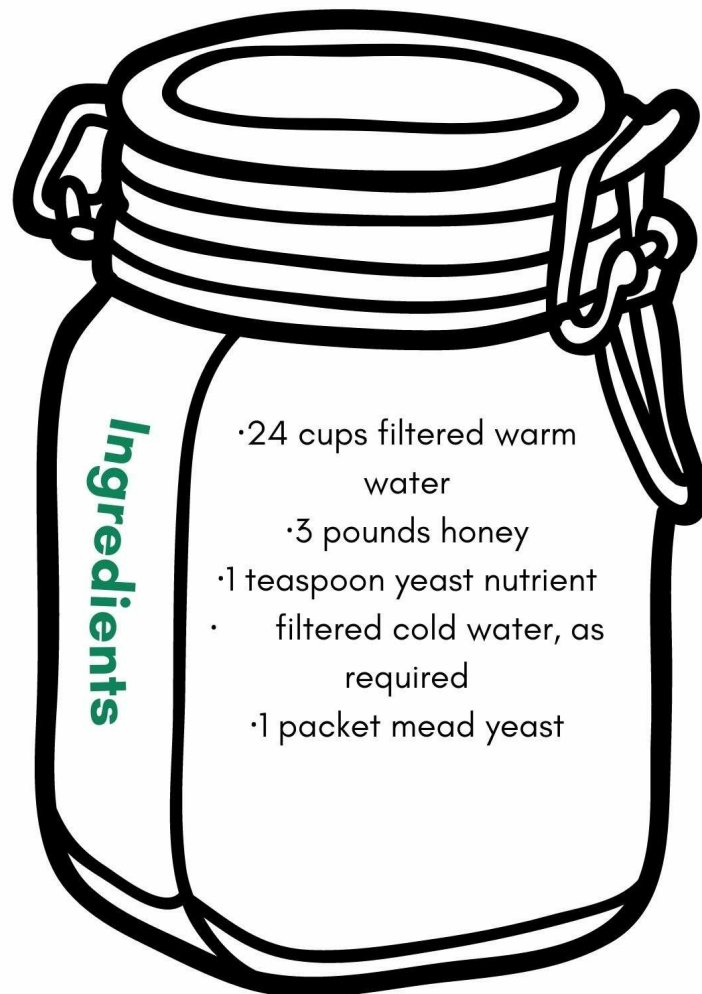
***Servings: 6***

## ***How to Prepare***

1. In a large-sized saucepan, add rice and water over high heat and cook until boiling.

2. Stir the rice once and immediately cover the saucepan.
3. Next adjust the heat to low and simmer for about 18-20 minutes.
4. Remove the saucepan of rice from heat and set aside, covered, for about 5 minutes
5. Uncover the saucepan and with a fork, fluff the rice.
6. Place the cooked rice over a parchment paper-lined, large-sized cutting board and spread in an even layer.
7. Let the rice cool slightly.
8. Sprinkle the yeast over the cooked rice and, with your cleaned hands, mix well.
9. Into a clean 64-ounce mason jar, place the rice.
10. Seal the jar and then wrap in a cozy blanket tightly.
11. Place the jar it in a warm place for 4-7 days.
12. Uncover the jar and add enough water to cover the rice by 1-inch.
13. Seal the jar and place in a warm place for 12-18 hours before serving.
14. Through a fine-mesh strainer, strain the beer and transfer into a sealed bottle and store.

# Mead (Honey Wine)



***Preparation time: 10 minutes***

***Fermentation time: 7 months 3 weeks***

***Total time: 7 months 3 weeks 10 minutes***

***Servings: 20***

## ***How to Prepare***

1. In a large-sized saucepan, place the warm water and stir in the honey and yeast nutrient until dissolves completely.
2. In a large-sized glass sterilized jar, place the honey mixture.
3. Add more water to fill the jar, leaving at least 2-inch space from the

top.

4. Set aside to cool.
5. In a small-sized bowl, dissolve the mead yeast in  $\frac{1}{4}$  cup of water.
6. Set aside for about 10 minutes.
7. Add the yeast mixture into the jar with honey mixture and stir to combine.
8. Seal the jar with water lock and set aside at room temperature for 2-3 weeks. (If the wine mixture bubbles up, then carefully remove it).
9. Through a fine mesh strainer, strain the wine mixture and transfer into another large-sized glass sterilized jar.
10. Seal the jar with water lock and set aside at room temperature for 6 months.
11. Transfer the wine into fermentation-proof flip-top bottles and set aside in warm place for about 1 month before serving.

# Mango Wine



***Preparation time: 10 minutes***

***Fermentation time: 6 months 2 weeks***

***Total time: 6 months 2 weeks 10 minutes***

***Servings: 20***

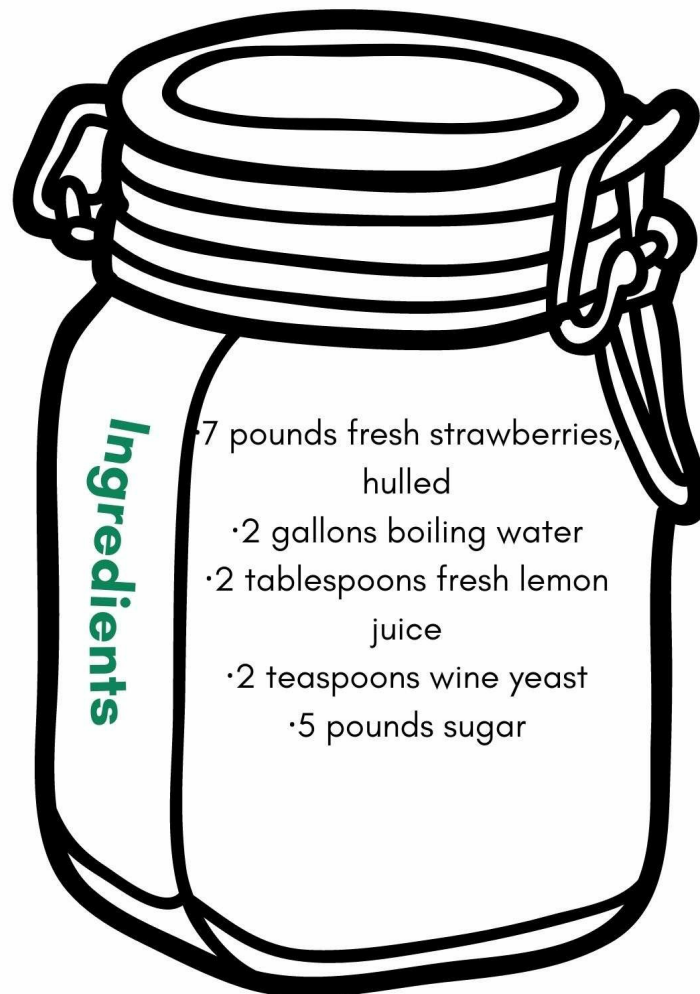
## ***How to Prepare***

1. In a large-sized glass sterilized jar, place the mango juice, lemon juice, black tea, sugar, and raisins. Stir until sugar dissolves completely.
2. In a small-sized bowl, dissolve the wine yeast in 2-3 tablespoons of

water.

3. Set aside for about 5 minutes.
4. Add the yeast mixture into the jar with mango juice mixture and stir to combine.
5. Seal the jar with water lock and set aside at room temperature for 4-6 weeks. (If the wine mixture bubbles up, then carefully remove it).
6. Through a fine mesh strainer, strain the wine mixture and transfer into another large-sized glass sterilized jar. (If the wine mixture bubbles up, then carefully remove it).
7. Through a fine mesh strainer, strain the wine mixture and transfer into another large-sized glass sterilized jar.
8. Seal the jar with water lock and set aside at room temperature for 2-4 months.
9. Transfer the wine into fermentation-proof flip-top bottles and set aside in warm place for about 1 month before serving.

# Strawberry Wine



***Preparation time: 15 minutes***

***Fermentation time: 1 year 3½ months***

***Total time: 1 year 3½ months 10 minutes***

***Servings: 20***

## ***How to Prepare***

1. In a large-sized stoneware crock, place the strawberries and, with a potato masher, mash well.
2. Add in boiling water to cover the mashed strawberries.
3. Add in the lemon juice and stir for about 2 minutes.

4. Add in the wine yeast and stir well.
5. Set aside to cool until its temperature reaches to 85°F.
6. With a clean linen cloth, cover the crock and place in a cool, dark place for 1 week, stirring once daily.
7. Through a double layer of cheesecloth, strain the strawberry mixture into a large-sized, clean bowl, discarding pulp.
8. In the bowl of strawberry liquid, stir in the sugar until dissolves completely.
9. Place the liquid into a large-sized clean stoneware crock and cover with a clean linen cloth.
10. Place the crock of wine in a cool, dark place for 1 week, stirring once daily.
11. Transfer the wine into 1-gallon glass wine bottles and cork loosely.
12. Place the bottles of wine in a cool, dark place for 3 months.
13. Now transfer the wine into bottles and cork loosely.
14. Place the bottles of wine in a cool, dark place for 1 year before using.

# Rice Wine



***Preparation time: 10 minutes***

***Fermentation time: 26 days***

***Total time: 26 days 10 minutes***

***Servings: 10***

## ***How to Prepare***

1. In a large-sized glass jar, add rice, raisins, sugar, and water. With a wooden spoon, stir well.
2. Add in the lemon juice and yeast. Mix well.
3. With the lid, cover the jar and place in a warm place for 18 days,

stirring twice daily.

4. Through a cheesecloth, squeeze the wine and transfer into another clean jar.
5. With the lid, cover the jar and place in a warm place for 8 days.
6. Place the wine into bottles and store in refrigerator.

# Bread Kvass



***Preparation time: 15 minutes***

***Cooking time: 1 hour***

***Fermentation time: 5 days 20 hours***

***Total time: 5 days 21¼ hours***

***Servings: 14***

## ***How to Prepare***

1. Preheat your oven to 200°F.
2. Arrange the bread cubes onto a baking sheet and spread in an even

layer.

3. Bake for approximately 1 hour.
4. In a large-sized saucepan, add fresh water and cook until boiling.
5. Remove the saucepan of water from heat and immediately stir in the bread cubes.
6. With a clean kitchen towel, cover the saucepan and set aside in a cool, dark place for 8-10 hours.
7. In a small-sized bowl, dissolve the yeast and a pinch of sugar in warm water.
8. Set aside for about 10 minutes.
9. Through a fine-meshed sieve, strain the bread water into a large-sized, non-reactive bowl, pressing the bread gently.
10. Discard the bread.
11. Return the strained bread liquid to a large-sized clean saucepan.
12. In the saucepan of strained liquid, stir in the yeast mixture and sugar until dissolved completely.
13. With a clean kitchen towel, cover the saucepan and set aside in a cool, dark place for 8-10 hours.
14. Through a fine-meshed sieve, strain the liquid into a (1-gallon) glass jar and stir in the raisins.
15. With plastic wrap, cover the jar tightly and secure with a rubber band.
16. Set aside in a dark, cool place for 4-5 days.
17. Carefully place the clear liquid into bottles, taking care not to disturb the yeast sediment from the bottom.
18. Refrigerate to chill completely before serving.

# Herbed Liqueur



***Preparation time: 10 minutes***

***Cooking time: 5 minutes***

***Fermentation time: 7 weeks***

***Total time: 7 weeks 15 minutes***

***Servings: 4***

## ***How to Prepare***

1. In a large-sized clean glass jar, add vodka, herbs, lemon zest, chamomile flowers, saffron threads, bay leaves, and cloves. Stir to

combine.

2. Cover the jar of liqueur tightly and place in a cool, dark place for 3 weeks, shaking after every 2-3 days.
3. In a small-sized saucepan, add water and sugar over medium-high heat and cook until boiling, stirring continuously.
4. Remove the saucepan of sugar mixture from heat and set aside to cool.
5. Through a coffee filter, strain the vodka mixture into a clean jar.
6. Add in the sugar mixture and mix well.
7. Cover the jar of liqueur tightly and place in a cool, dark place for 4 weeks.
8. Transfer the liquor into a sealed bottle and store.

# Orange Liqueur



***Preparation time: 10 minutes***

***Cooking time: 5 minutes***

***Fermentation time: 20 days***

***Total time: 20 days 15 minutes***

***Servings: 20***

## ***How to Prepare***

1. Remove the peel of oranges thinly. (Avoid the white pith of the oranges).

2. In a large-sized clean glass jar, add orange zest, vodka, cinnamon, and cloves. Stir to combine.
3. Cover the jar of liqueur tightly and place in a cool, dark place for 10 days, shaking after every 2 days.
4. In a small-sized saucepan, add water and sugar over medium-high heat and cook until boiling, stirring continuously.
5. Remove the saucepan of sugar mixture from heat and set aside to cool.
6. Through a coffee filter, strain the vodka mixture into a clean jar.
7. Add in the sugar mixture and mix well.
8. Cover the jar of liqueur tightly and place in a cool, dark place for 10 days.
9. Transfer the liquor into sealed bottles and store.

# Chapter 16: Fermented Dairy Recipes



# Buttermilk



*Preparation time: 10 minutes*

*Fermentation time: 32 hours*

*Total time: 32 hours 10 minutes*

*Servings: 4*

## *How to Prepare*

1. In a clean mason jar, add milk and starter culture. Gently stir to combine.
2. With a piece of cheesecloth, cover the jar and place in a warm place for 12-24 hours.

3. Then refrigerate the jar for at least 8 hours.
4. Just before serving, stir the buttermilk.

# Cultured Butter



*Preparation time: 30 minutes*

*Fermentation time: 38 hours*

*Total time: 38½ hours*

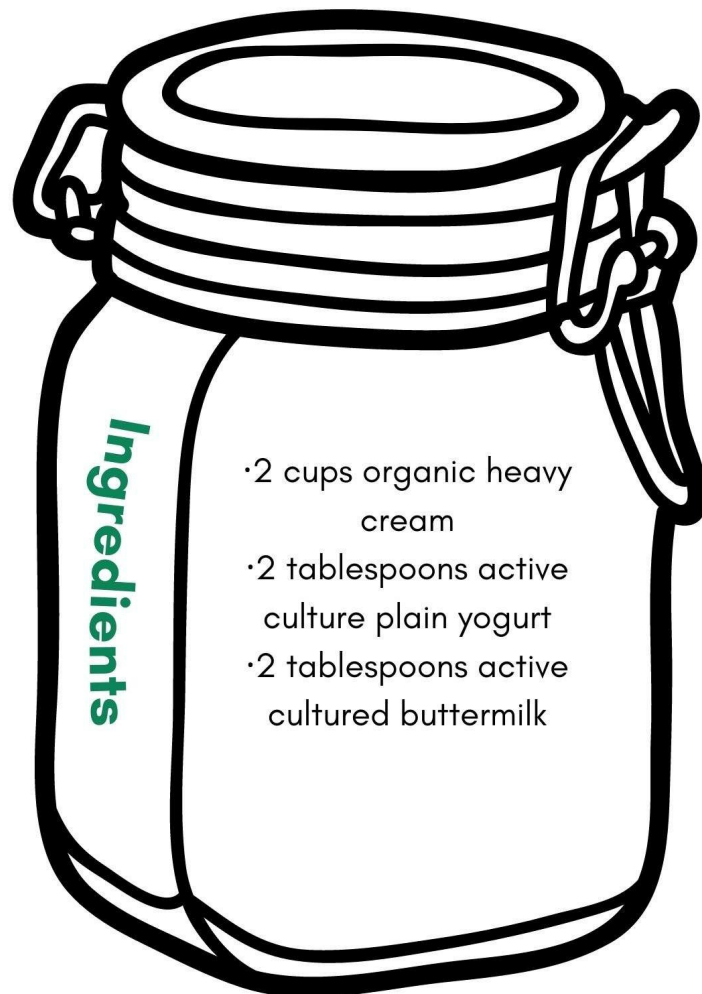
*Servings: 60*

## *How to Prepare*

1. In a large-sized jar, blend together the cream and yogurt.
2. Seal the jar well and shake vigorously to combine.
3. With a clean kitchen towel, cover the jar and place in a warm place for 18-36 hours.

4. Remove the kitchen towel and then seal the jar tightly.
5. Refrigerate for about 1-2 hours.
6. Line a fine-mesh sieve with a double layer of cheesecloth and then arrange over a large-sized bowl.
7. In a clean food processor, add the thickened butter mixture and pulse on high speed until the yellow curds start to separate from the buttermilk.
8. Slowly Place the buttermilk through the mesh sieve.
9. Next, place the butter curds in the cheesecloth for 2 minutes.
10. Then gather the ends of cheesecloth together around the butter, pushing the curds down and into a ball.
11. Twist the cheesecloth tightly to release any buttermilk.
12. Place the butterball in a bowl.
13. Add 1/3 cup of ice water over the butter and with a spatula, press down to extract the extra buttermilk.
14. Drain off the liquid and discard it.
15. Repeat this process 4-6 times.
16. Place the butter onto a clean kitchen towel and pat lightly to remove excess moisture.
17. With your hands, knead the butter a few times and then again, pat dry with a kitchen towel.
18. Sprinkle the butter with salt and knead to combine.
19. Place the butter onto parchment paper and shape into a log.
20. Roll the butter log in the paper and twist the ends to seal.
21. Refrigerate until ready to use.

# Sour Cream



***Preparation time: 5 minutes***

***Fermentation time: 12 hours***

***Total time: 12 hours 5 minutes***

***Servings: 16***

## ***How to Prepare***

1. In a sterilized glass jar, add the cream, yogurt, and cultured buttermilk. Stir to combine.
2. With the lid, cover the jar loosely and place in a warm place for 8-12 hours.

3. Store the sour cream in refrigerator.

# Crème Fraiche



*Preparation time: 5 minutes*

*Fermentation time: 12 hours*

*Total time: 12 hours 5 minutes*

*Servings: 16*

## *How to Prepare*

1. In a sterilized glass jar, add the cream and buttermilk. Stir to combine.
2. With the lid, cover the jar tightly and place at room temperature for 12 hours.

3. Store this crème fraiche in refrigerator.

# Rennet Cheese



*Preparation time: 10 minutes*

*Cooking time: 1 hour 15 minutes*

*Fermentation time: 5 days*

*Total time: 5 days 1 hour 25 minutes*

*Servings: 16*

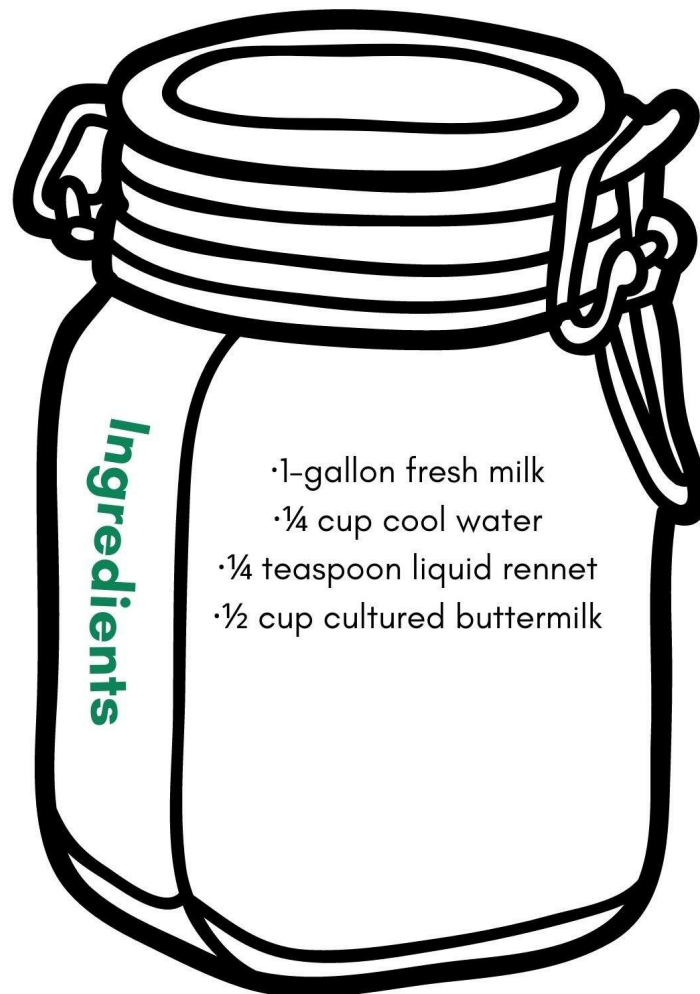
## *How to Prepare*

1. In a medium-sized, stainless-steel saucepan, add the milk and yogurt over low heat and cook for about 8-10 minutes or until its

temperature reaches to 100°F.

2. Meanwhile, in a small-sized bowl, add warm water and rennet. Mix well.
3. In the saucepan of milk mixture, add rennet mixture and stir to combine.
4. Immediately remove the saucepan of milk mixture from heat and set aside for about 30 minutes.
5. Return the pan over low heat and cook until just warmed.
6. With a long stainless-steel knife, cut the curd into 1-inch cubes.
7. Cook for about 30-60 minutes, stirring the curds occasionally but gently.
8. Meanwhile, line a colander with cheesecloth.
9. Gently place the curds into the cheesecloth, sprinkling with the salt.
10. Then gather the ends of the cheesecloth together around the curd, pushing the curds down and into a ball.
11. Twist the cheesecloth tightly to release any liquid.
12. Now hang the cheeseball over a sink to strain for about 24 hours.
13. After 24 hours, re-wrap the cheese in another dry cheesecloth and hang for more 3-4 days. (Re-wrap the cheese in a clean, dry piece of cheesecloth daily).
14. Cheese is ready to serve.

# Cottage Cheese



***Preparation time: 10 minutes***

***Cooking time: 40 minutes***

***Fermentation time: 30 hours***

***Total time: 30 hours 50 minutes***

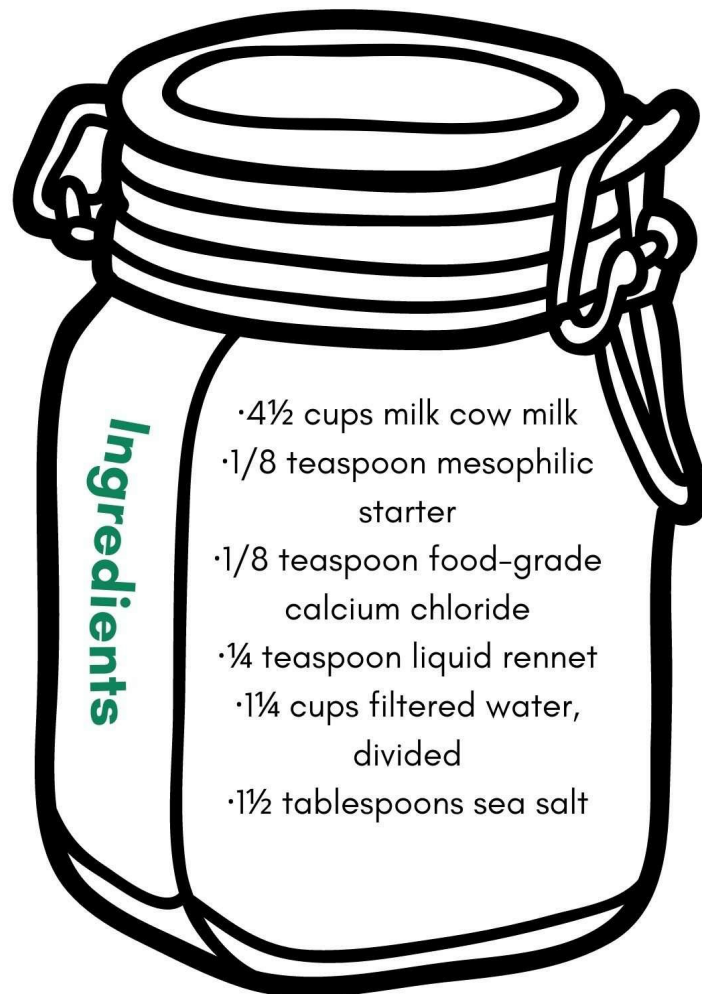
***Servings: 30***

## ***How to Prepare***

1. In a large-sized stainless-steel saucepan, add milk over low heat and cook for about 6-10 minutes or until its temperature reaches to 85°F.

2. Meanwhile, in a small-sized bowl, add water and rennet and mix well.
3. In the saucepan of milk mixture, add rennet mixture and buttermilk. Stir to combine.
4. Immediately remove the saucepan of milk mixture from heat.
5. With cheesecloth, cover the saucepan and place in a warm place for 16-24 hours.
6. With a long stainless-steel knife, cut the curd into 2-inch cubes.
7. Place the saucepan of curd over low heat and cook for about 30 minutes, stirring occasionally but gently.
8. Meanwhile, line a colander with cheesecloth.
9. Gently place the curds into the cheesecloth, sprinkling with the salt.
10. Next gather the ends of the cheesecloth together around the curd, pushing the curds down and into a ball.
11. Twist the cheesecloth tightly to release any liquid.
12. Now hang the cheeseball over a sink to strain for about 4-6 hours.
13. Cheese is ready to serve.

# Feta Cheese



***Preparation time: 20 minutes***

***Cooking time: 2 hours 40 minutes***

***Fermentation time: 7½ days***

***Total time: 7½ days 3 hours***

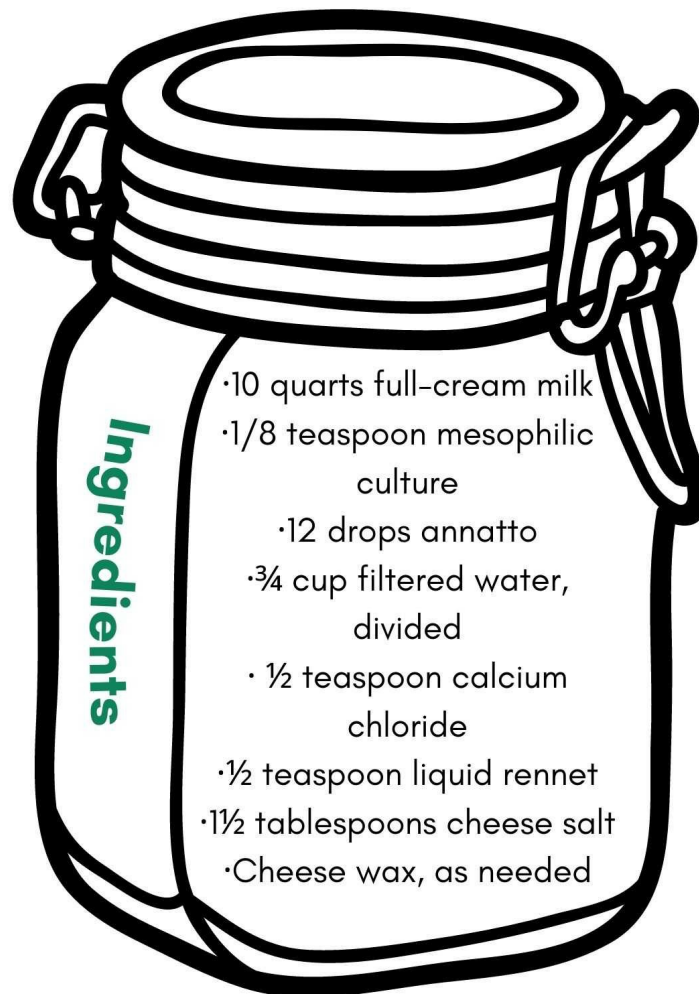
***Servings: 16***

## ***How to Prepare***

1. In a large-sized, stainless-steel saucepan, add milk over low heat and cook for about 6-10 minutes or until its temperature reaches to 85°F.

2. In the saucepan of milk, stir in mesophilic starter and cook for about 1 hour, stirring occasionally.
3. Meanwhile, in a small-sized bowl, blend together the calcium chloride and 2 tablespoons of water.
4. In another small-sized bowl, blend together the liquid rennet and 2 tablespoons of water.
5. Into the saucepan of milk, add the calcium chloride mixture and stir to blend.
6. Next add the rennet mixture and stir to blend.
7. Cook for about 1 hour.
8. With a long stainless-steel knife, cut the curd into ½-inch cubes.
9. Cook for about 30 minutes, stirring after every 5 minutes.
10. Meanwhile, line a colander with cheesecloth.
11. Gently place the curds into the cheesecloth, sprinkling with the salt.
12. Next gather the ends of the cheesecloth together around the curd, pushing the curds down and into a ball.
13. Twist the cheesecloth tightly to release any liquid.
14. Next hang the cheeseball over a sink to strain for about 8-12 hours.
15. Meanwhile, in a medium-sized glass jar, dissolve the salt in remaining water.
16. Unwrap the cheese and place onto a cutting board.
17. Cut the cheese into 2-4 pieces and place in the jar.
18. Seal the jar of cheese and refrigerate for at least 5 days.
19. Remove cheese pieces from brine and arrange on mats to drain for 1-2 days.
20. Cheese is ready to serve.

# Cheddar Cheese



*Preparation time: 30 minutes*

*Cooking time: 1 3/4 hours*

*Resting time: 1 hour 40 minutes*

*Pressing time: 13 hours*

*Ageing time: 6 months 5 days*

*Total time: 6 months 16 hours 55 minutes*

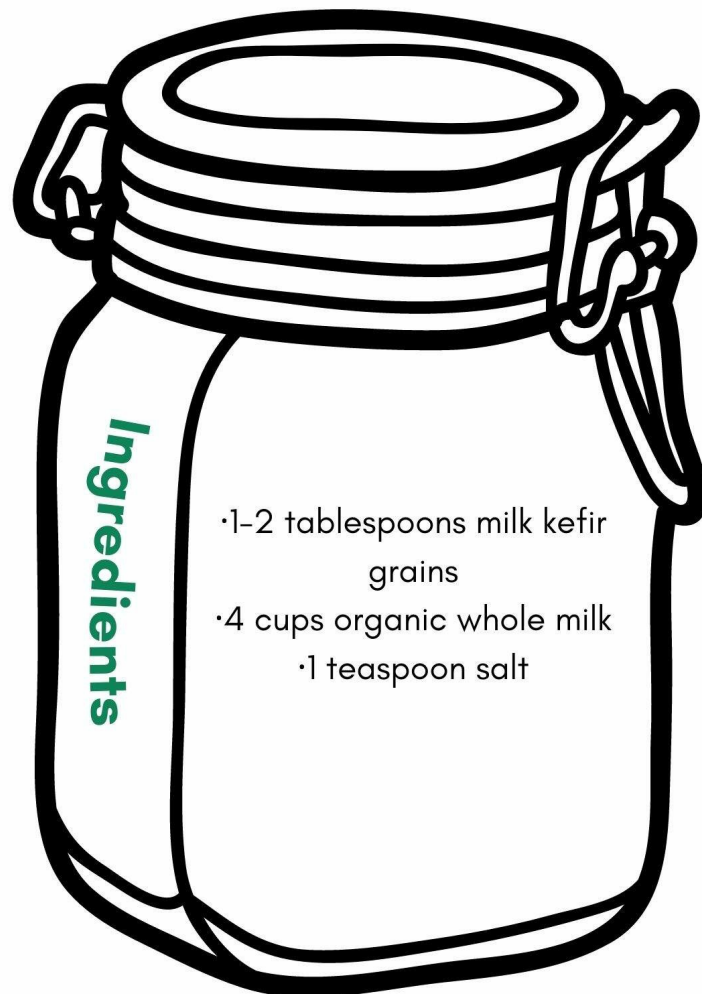
*Servings: 32*

*How to Prepare*

1. In a large-sized, stainless-steel saucepan, add milk over low heat and cook for about 8-10 minutes or until its temperature reaches to 88°F, stirring gently.
2. Remove the saucepan of milk from heat.
3. Sprinkle culture on top of the milk and let it sit for 5 minutes.
4. With a wooden spoon, stir to combine well.
5. Cover the saucepan and set aside for 40 minutes.
6. Meanwhile, in a small-sized bowl, blend together the annatto in  $\frac{1}{4}$  cup of water.
7. In a second small-sized bowl, blend together the calcium chloride in  $\frac{1}{4}$  cup of water.
8. In a third small-sized bowl, blend together the liquid rennet in remaining  $\frac{1}{4}$  cup of water.
9. In the saucepan of milk, add the annatto mixture and mix well.
10. Add the calcium chloride mixture and mix well.
11. Next add the rennet mixture and mix well.
12. Cover the saucepan and set aside for 40-50 minutes.
13. With a long stainless-steel knife, cut the curd into  $\frac{1}{2}$ -inch cubes.
14. Set aside for about 5 minutes.
15. Return the saucepan of curd over low heat and cook for about 45 minutes, stirring occasionally, but gently.
16. Remove the saucepan of curd from heat and set aside for about 40 minutes.
17. Through a cheesecloth-lined colander, drain the curds.
18. Return the saucepan of curd over low heat and cook for about 10 minutes, stirring occasionally but gently.
19. Remove the saucepan of curd from heat and, with a long stainless-steel knife, cut the curd into 2 slabs.
20. Cover the saucepan of curd and let it rest for about 10 minutes.
21. Turn each slab over and let it rest for about 10 minutes.
22. Again, turn each slab over and let it rest for about 10 minutes.

23. Again, turn each slab over and let it rest for about 15 minutes.
24. Through a cheesecloth-lined colander, drain the curd slabs and then place onto a cutting board.
25. Cut the curd into 2x½-inch fingers.
26. In a large-sized container, add curd fingers and salt and toss to coat.
27. Place the curd in a cheesecloth-lined cheese mold.
28. With the corner of the cheesecloth, cover the top of curds and press at 24 pounds for 1 hour.
29. Remove the cheese from press and carefully unwrap it.
30. Turn the cheese over and again rewrap it in the cloth.
31. Press at 50 pounds for 12 hours.
32. Remove the cheese from press and carefully unwrap it.
33. Place unwrapped cheese on a cheese mat and let air dry at room temperature for 2-5 days, turning twice daily.
34. Coat the cheese with cheese wax and let it age in a humid cheese fridge for 6 months, turning once weekly.

# Milk Kefir Cheese



***Preparation time: 10 minutes***

***Fermentation time: 48 hours***

***Total time: 48 hours 10 minutes***

***Servings: 24***

## ***How to Prepare***

1. In a (1-quart) jar, place the kefir grains.
2. Add the milk into the jar, leaving about 1-inch space from the top.
3. With the lid, cover the jar tightly and place at room temperature for 12-24 hours.

4. Meanwhile, line a colander with cheesecloth.
5. Gently place the curds into the cheesecloth, sprinkling with the salt.
6. Next gather the ends of cheesecloth together around the curd, pushing the curds down and into a ball.
7. Twist the cheesecloth tightly to release any liquid.
8. Next hang the cheeseball over a sink to strain for about 24 hours.
9. Transfer the cheese into a bowl and stir in the salt.
10. Cheese is ready to serve.

# Kumis



***Preparation time: 10 minutes***

***Cooking time: 5 minutes***

***Fermentation time: 48 hours***

***Total time: 48¼ hours***

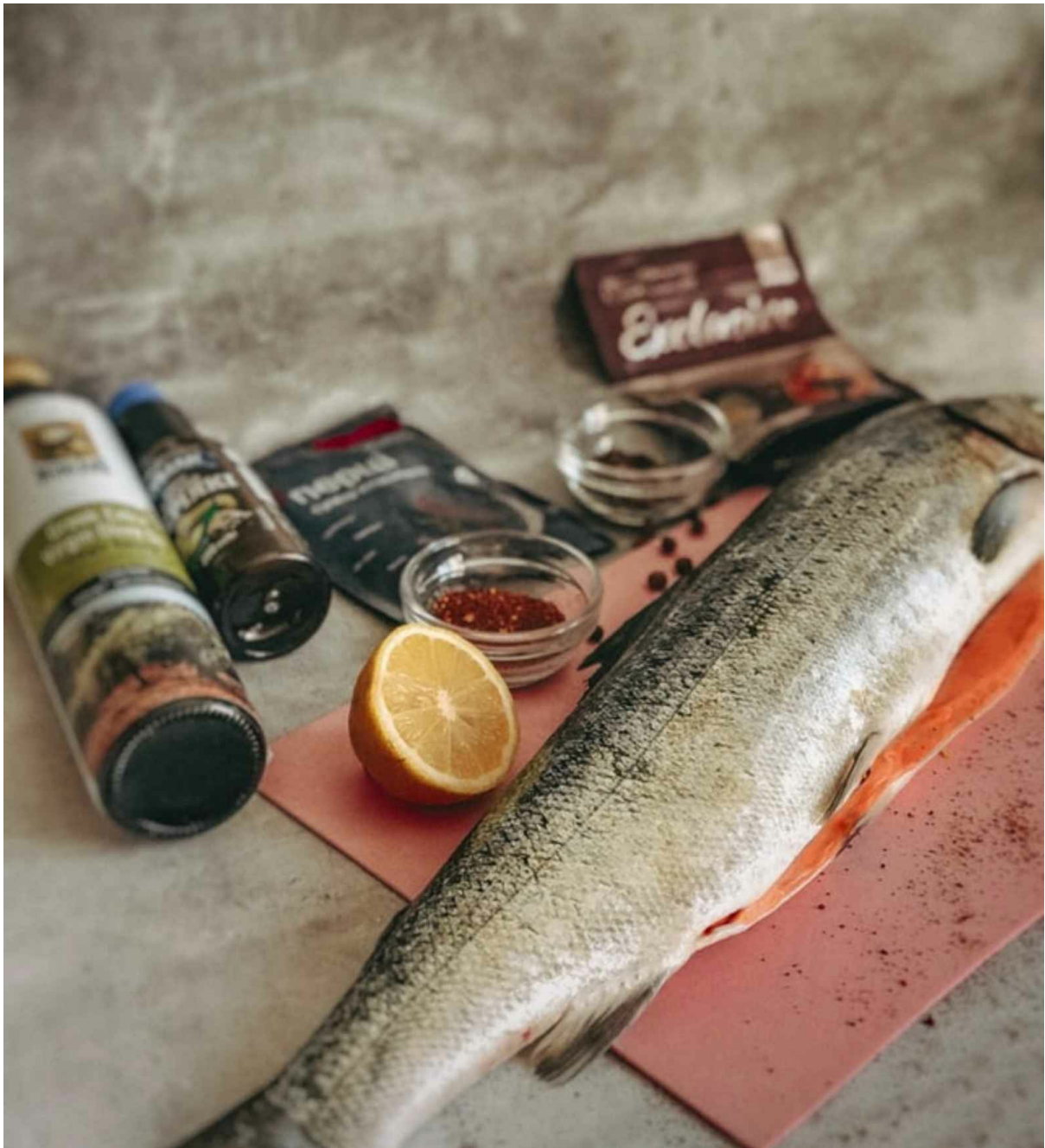
***Servings: 10***

## ***How to Prepare***

1. In a large-sized, stainless-steel saucepan, add milk over medium-low heat. Cook until boiling.

2. Remove the saucepan of milk from heat and set aside to cool slightly.
3. In a small-sized bowl, add 1 cup of warm milk and yogurt. With a wire whisk, beat until well-combined.
4. Add the yogurt mixture into the pan of remaining milk and stir well.
5. In a large-sized glass jar, place the milk mixture.
6. With a clean kitchen towel, cover the jar and set aside at room temperature for 12-24 hours.
7. Into a large-sized, clean blender, add the milk mixture and sugar and pulse until smooth.
8. Transfer the milk mixture in a clean, large-sized glass jar.
9. Cover the jar and refrigerate for 24 hours before serving.

# Chapter 17: Fermented Meat, Fish & Egg Recipes



# Fermented Beef Brisket



***Preparation time: 10 minutes***

***Fermentation time: 4 days***

***Total time: 4 days 10 minutes***

***Servings: 6***

## ***How to Prepare***

1. In a small-sized bowl, blend together the salt, mustard seeds, juniper berries, red pepper flakes, and bay leaves.
2. Generously rub the beef brisket with salt mixture.
3. In a small-sized bowl, blend together the water and whey.

4. In a large-sized container, place the beef brisket and top with whey mixture.
5. Turn the brisket a few times to evenly coat with whey mixture.
6. Cover the container and set refrigerator for 4 days, turning frequently.
7. Remove the brisket from refrigerator and cut into 3-4 large-sized pieces.
8. Brisket is ready to serve.

# Fermented Steak Garum



*Preparation time: 10 minutes*

*Fermentation time: 1 year*

*Total time: 1 year 10 minutes*

*Servings: 2*

## *How to Prepare*

1. In a clean mason jar, add beef and remaining ingredients. Mix until well-combined.
2. Arrange a large-sized piece of plastic wrap over the beef mixture.

3. Cover the jar with a lid loosely and place into a warm, dark place for 10-12 months.

# Fermented Ground Beef (Nem Chua)



*Preparation time: 20 minutes*

*Cooking time: 1 minute*

*Fermentation time: 24 hours*

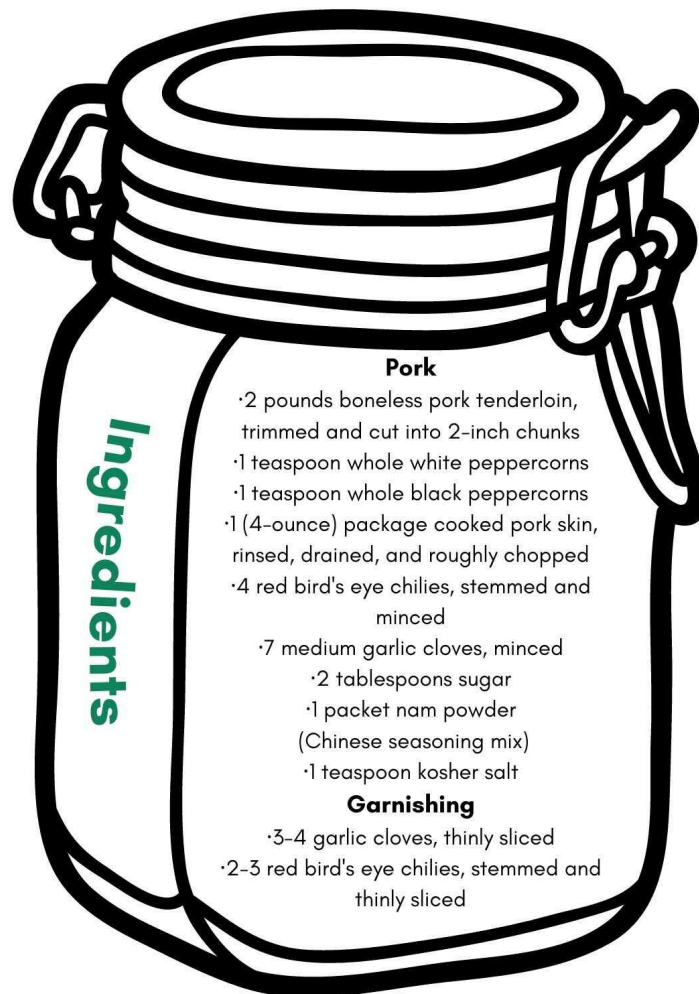
*Total time: 24 hours 21 minutes*

*Servings: 36*

*How to Prepare*

1. Line a baking dish with cling film wrap
2. Heat a small-sized, non-stick frying pan over medium heat and toast the black peppercorns for 30-60 seconds, stirring continuously.
3. With a mortar and pestle, grind the peppercorns roughly.
4. In a large-sized mixing bowl, add ground beef, peppercorns, chili peppers, garlic, sugar, and seasoning. With your hands, mix until well-combined.
5. Add pork skins and mix until well-combined.
6. Place the beef mixture into the prepared baking dish and spread in an even layer.
7. Fold over the wrap to cover the beef mixture completely.
8. With your hands, punch down the beef mixture 2-3 times.
9. Place the baking dish at room temperature for 24 hours.
10. Cut the beef mixture into small-sized squares before using.

# Fermented Pork Tenderloin



*Preparation time: 20 minutes*

*Fermentation time: 1 week*

*Total time: 1 week 20 minutes*

*Servings: 16*

## *How to Prepare*

1. Line a baking sheet with parchment paper.
2. Arrange the pork chunks onto the prepared baking sheet in a single layer and freeze for about 15-20 minutes.
3. Into a clean food processor, add pork chunks in 2-3 batches and

pulse until finely ground.

4. Transfer the ground pork into a large-sized mixing bowl.
5. In a spice grinder, grind the peppercorns until finely powdered.
6. In the bowl of pork, add the peppercorn powder and remaining ingredients. Mix well.
7. Place the pork mixture into a plastic wrap-lined, 8-inch square baking dish and, with a spatula, smooth into an even layer.
8. Arrange garlic and chili slices into the surface of pork mixture about 2-inch apart.
9. With plastic wrap, cover the baking dish, pressing it firmly against the surface of the pork mixture.
10. Refrigerate for 1 week.
11. Cut the pork mixture into small-sized squares before using.

# Fermented Ham



*Preparation time: 20 minutes*

*Cooking time: 5 minutes*

*Fermentation time: 8 hours*

*Total time: 8 hours 25 minutes*

*Servings: 4*

## *How to Prepare*

1. Into a large-sized bowl, add vinegar, water, and sugar. Stir until the sugar dissolves completely.

2. Add the ham pieces and generously coat with vinegar mixture.
3. Cover the bowl of ham mixture and refrigerate for at least 8 hours.
4. Through a colander, strain the ham pieces for 15 minutes.
5. In a large-sized pan of boiling water, add the pork skin slices and salt. Cook for about 15 seconds.
6. Drain the pork skin slices and then rinse under cool running water.
7. Through a colander, drain the pork skin slices and then pat dry them with paper towels.
8. In a clean food processor, add ham and garlic in 2 batches and pulse for 45-60 seconds.
9. In a large-sized, non-stick wok, place the pork skin slices, ham, and water. Mix well.
10. Place the wok over low heat and cook for about 3-4 minutes, stirring continuously.
11. Stir in the peppercorns and remove the wok from heat.
12. Place the ham mixture into an 8×8-inch baking dish evenly and, with your hands, press the mixture firmly.
13. Next, with a spatula, press the mixture firmly to smooth the surface.
14. With plastic wrap, cover the baking dish and refrigerate for 4 hours.
15. Arrange a plastic wrap onto a smooth surface.
16. Place about  $\frac{3}{4}$  cup of the ham mixture over the plastic wrap and shape it into a log.
17. Wrap the plastic wrap around the log firmly and then twist the ends tightly.
18. Unwrap the log and place coriander leaves, chilies, and garlic on top.
19. Again, wrap the log in plastic wrap tightly.
20. Repeat with the remaining mixture and garnishing ingredients.
21. Refrigerate the wrapped logs for 4 hours.
22. Cut each into small-sized pieces and serve.

# Fermented Squid



*Preparation time: 15 minutes*

*Fermentation time: 1 month*

*Total time: 1 month 15 minutes*

*Servings: 12*

## *How to Prepare*

1. Into a large-sized bowl, mix together the squid and salt.
2. Into a large-sized glass jar, place the squid.
3. Cover the jar and refrigerate for 1 month, shaking the jar every week.

4. After 1 month, remove the squid from jar and rinse under cold running water to remove any excess salt.
5. Drain the squid, and then pat dry with paper towels.
6. Remove the skin of squid and then chop into small-sized pieces.
7. Squid is ready to serve.

# Fermented Mackerel



*Preparation time: 15 minutes*

*Fermentation time: 2 weeks 42 hours*

*Total time: 2 weeks 42¼ hours*

*Servings: 4*

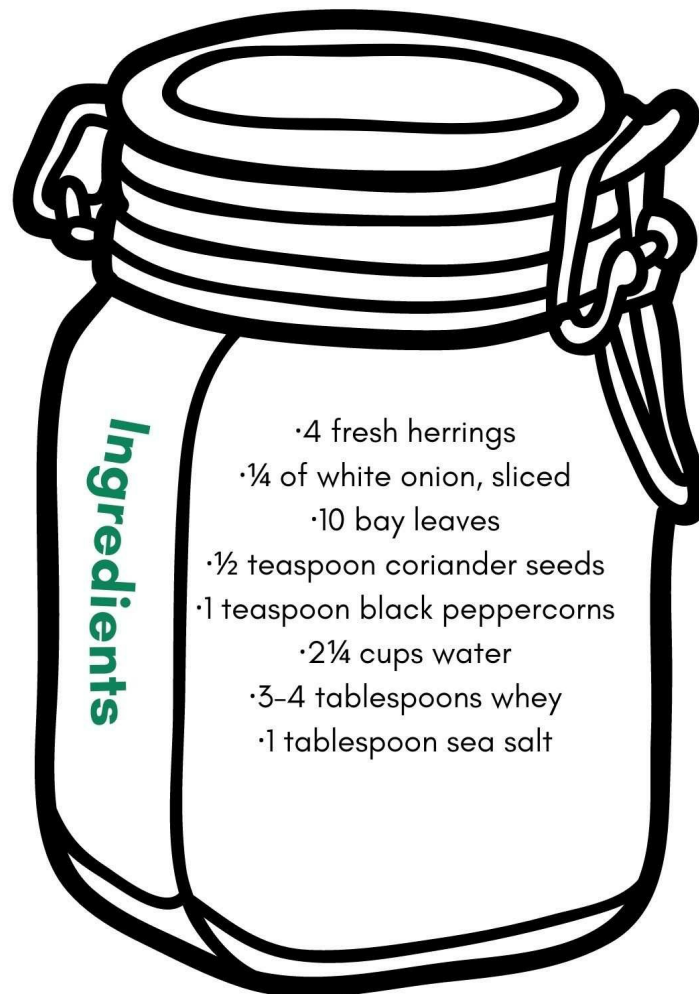
## *How to Prepare*

1. Evenly sprinkle the mackerel fillets with 1½ teaspoons of salt.
2. Arrange the mackerel fillets onto a cheesecloth-lined plate and refrigerate for 16-18 hours.
3. Remove the cheesecloth from the plate of fillets and drain any

liquid.

4. With paper towels, pat dry the fish fillets.
5. In a small-sized bowl, blend together the remaining salt, water, onion, fennel, whey, black pepper, and red pepper flakes.
6. In a large-sized clean jar, place the fish fillets and top with water mixture.
7. With a fermenting weight, weigh down the fish fillets and with cheesecloth. Cover the jar.
8. Set the jar of fish aside at room temperature for 24 hours.
9. Now cover the jar with its lid and refrigerate for 1-2 weeks before serving.

# Fermented Herring



***Preparation time: 15 minutes***

***Fermentation time: 5 days***

***Total time: 5 days 15 minutes***

***Servings: 6***

## ***How to Prepare***

1. Remove the skin and bones of the fish.
2. Next, cut each fish into bite-sized pieces.
3. In 1 (1-quart) jar, place the fish pieces, onion, bay leaves, coriander seeds, and peppercorns.

4. In a large-sized bowl, dissolve the whey and salt in water.
5. Next place the brine into the jar over the fish (if the fish is not covered, add more water).
6. Close the jar tightly and set aside at room temperature for 3-5 days.

# Fermented Shrimp Garum



*Preparation time: 10 minutes*

*Fermentation time: 10 months*

*Total time: 10 months 10 minutes*

*Servings: 2*

## *How to Prepare*

1. In a clean mason jar, add the shrimp and remaining ingredients and mix until well-combined.
2. Arrange a large-sized piece of plastic wrap over the shrimp mixture.
3. Cover the jar with a lid loosely and place into a warm, dark place for

6-10 months.

# Fermented Eggs



***Preparation time: 10 minutes***

***Fermentation time: 3 days***

***Total time: 3 days 10 minutes***

***Servings: 12***

## ***How to Prepare***

1. In 2 (1-quart) sterilized jars, evenly divide water and salt.
2. With a wooden spoon, stir until the salt is dissolved.
3. Add the eggs into the jar and place the starter on top.
4. Add more water until the eggs are submerged completely.

5. Cover each jar with a lid loosely and place in a cool, dark place for 1-3 days.
6. These fermented eggs can be stored in the refrigerator for 2 weeks.

# Chapter 18:

## Science of Yogurt Fermentation & Tips



Fermentation is a natural process that may be used to make a wide range of food products in a variety of ways. Yogurt is one of the fermented foods which is made from milk. In this chapter, I will explain the science behind the yogurt making so that you can know about what it takes to make a great tasting yogurt.

### **The Science Behind Yogurt Fermentation**

Fermentation is a process in which microorganisms present in the food break down the complex nutrients into simpler products. This simple procedure, like turning grape juice into wine or milk into yogurt, can radically alter the flavor and texture of food. Ferments are microorganisms that control this process and are typically bacteria or yeasts.

Milk contains lots of proteins and a form of sugar called Lactose, along with other nutrients. When ferments are added to milk, they release their enzymes to break down Lactose to receive their share of energy. While doing so, they turn Lactose into lactic acid. This acid then reacts with the globular proteins present in the milk, turn them into fibrous protein and changes the natural consistency of milk. The end product of this process is recognized as yogurt.

Fermentation is a natural and harmless process by which microorganisms get energy for growth and development. For good fermentation, a combination of healthy and gut-friendly microbes is used in yogurt making. The different types of bacteria that are used in this process mainly include *S. thermophilus* and *L. Bulgaricus*.

In a neutral, high-oxygen environment like milk, bacteria like *S. thermophilus* develop faster than *L. bulgaricus*; thus, it takes the lead. It consumes oxygen and makes new chemicals, creating the conditions for *L. bulgaricus* to begin its metabolism and thrive. Now it's *L. bulgaricus*' chance to take the initiative and break down some of the proteins in milk into amino acids. This, in turn, makes it easier for *S. thermophilus* to obtain the nutrients it requires to continue to thrive. That's how the two different types of bacteria work together to turn milk into yogurt.

However, bacteria are not the only major factors at play. The type of conditions fermenting milk is kept also plays a major role in yogurt making.

### **Conditions To Ferment:**

Both bacterial strains absorb Lactose naturally present in milk and convert it to lactic acid as they grow. The amount of Lactose they convert to lactic acid determines how acidic the milk is. Caseins, a protein present in the milk, begin to clump together as the milk becomes sufficiently acidic, changing the milk's consistency to form a thicker substance called yogurt.

These bacterial strains in yoghurt really inhibit the growth of other germs that would normally ruin milk. The bacteria that convert milk into yogurt can neither work at high temperatures nor at low temperatures. The milk must be kept at 108°F to 112°F to kickstart fermentation. Next, leave this milk for 8-9 hours of fermentation to completely turn into milk.

### **When to Stop Fermentation?**

We must halt the yogurt fermentation process once the milk has converted into yogurt and we have achieved the ideal flavor and texture. Cooling it down will help, as lower temperatures will slow the growth of the two bacteria that are driving the process. If the yogurt is left to ferment more, it may get too sour and acidic.

### **How To Make Homemade Yogurt**

The traditional way of yogurt involves heating the milk and then fermenting it in a slightly warmer place in the kitchen. This method works well in summers, but in winters, you need to keep the yogurt at a place where it would get the constant low heat that it needs for fermentation. Today you can find electric yogurt makers or electric cookers with yogurt making options. They are perfect for keeping the yogurt milk at the 108°F to 112°F temperature for 8-10 hours to give you a perfect looking yogurt. Here I will explain both the methods. To make your yogurt you will need the following:

1. Milk
2. Yogurt starter (a small-sized amount of yogurt to start the fermentation)
3. Cooking pot
4. A container to make the yogurt



Start by boiling the milk in a cooking pot. Boiling kills all the existing microbes that may compete with the yogurt-making microbes that we will be adding later. Once boiled, allow the milk to cool to 100-110 degrees F. Pour it into a container with lesser depth and more surface area. Such a container allows better and even fermentation. Take a ladle of this milk and pour it back into the container into a stream to create a little froth on top. The addition of more air into the milk helps in better fermentation. Next add the yogurt (this can be a market-bought yogurt which carries the required culture of bacteria) to the milk. Next cover this container with a lid and keep it aside at a warmer place (108°F to 112°F) for 9 hours without stirring or checking the yogurt. When the milk turns into yogurt, place it in the refrigerator to stop the fermentation. Scoop out to serve.

While using an electric yogurt maker, the technique remains the same. Instead of keeping the milk in a container to ferment, you will use the yogurt maker. Such an appliance provides the appropriate temperature required for yogurt making. You can use its timer to set the fermentation

time to exactly 9 hours. First, you boil the milk in a pot, then pour it into the yogurt maker. Allow it to cool, then add yogurt starter, then adjust settings, cover, and a few hours later, your yogurt will be ready to go into the refrigerator.

### **Tips to Make the Best Yogurt:**

People often complain that their yogurt does not have the right texture, consistency, or good taste. It can happen due to many reasons. Let's share some tips to avoid having a bad yogurt-making experience:

1. Don't use powdered yogurt starters to make the yogurt. They don't work as well as a few tablespoons of yogurt itself. Buy a good quality yogurt from the market, try to get freshly made curd and then use it as a starter. For the second batch of yogurt, you can use the leftover yogurt from the previous batch.
2. Full-fat organic milk is probably the best choice for preparing yogurt. The ultra-pasteurized milk available in the market yields bad quality yogurt, so avoid that.
3. As I have said earlier, a good container to ferment the yogurt is the one which is broader and has lesser depth. Besides the shape of the container, the material it is made up of also plays a major role. Metal and glass bowls are not good for yogurt making. Ceramic bowls can retain more heat; hence they are more suitable for this process.
4. For a thicker consistency, strain the yogurt through a cheesecloth after it has been completely fermented. In this way, you can get a Greek yogurt like consistency.

# Yogurt Recipe



***Preparation time: 10 minutes***

***Cooking time: 5 minutes***

***Fermentation time: 16 hours***

***Total time: 16¼ hours***

***Servings: 6***

## ***How to Prepare***

1. Rinse the inside of a heavy-bottomed saucepan with cold water.
2. Add the milk into the saucepan over medium heat and bring to a

slow simmer or until its temperature reaches to 180-200 degrees, stirring occasionally.

3. Remove the saucepan of milk from heat and set aside to cool until it feels pleasantly warm.
4. Transfer the milk into a large-sized glass bowl.
5. In a small-sized bowl, add ½ cup of warm milk and yogurt and whisk until smooth.
6. Add the yogurt mixture into the bowl with remaining milk and stir to combine.
7. Cover bowl with a large-sized lid and place in a warm place for 6-12 hours or until the yogurt is thick and tangy.
8. Transfer the bowl into the refrigerator and chill for at least another 4 hours before serving.

# Chapter 19:

## Turning Milk into Kefir



Kefir, mostly pronounced as Keefer, is a fermented drink produced from cow, goat, or sheep milk. Water kefir is identical to milk kefir; however, it is made with water rather than milk. Kefir is thought to have originated centuries ago in the Caucasus Mountains of Eastern Europe, near present-

day Turkey, according to historians. The word kefir is taken from the Turkish word "keif," which means "feeling pleasant."

Kefir is frequently compared to Greek yogurt, and the two products are comparable in certain aspects as well. Kefir has a somewhat sour flavor and is made by a fermentation process, similar to Greek yogurt. But Kefir drinks have a thinner consistency than Greek yogurt. However, they both contain distinct forms of probiotic bacteria. Kefir is a popular drink that is used for promoting digestive health, and it's easy to see why. Around 30 different species of probiotics, or "good bacteria," are found in the product, which is proven to boost gut health and may help the body's digestive processes. While kefir is available in grocery and food stores, you can also brew it on your own at home.

### **Potential Health Benefits of Kefir**

Because of the high concentration of microorganisms that are found in kefir, it is known to have several beneficial nutrients, and it is quite good at improving gut health. Kefir drinkers may reap a variety of health benefits, such as follows:

**Relief from Constipation:** Kefir's probiotics and yeast have been demonstrated to create a beneficial balance of good bacteria in the gut, which can aid with constipation and other digestive health issues.

**Support for Digestive Health:** Kefir contains tryptophan, an essential amino acid that experts believe assists the body with the processes that move food through the digestive tract by relaxing the neurological system.

**Heart Health:** Scientists have discovered that "healthy" bacteria present in fermented foods such as kefir may help to improve cardiovascular health.

**Reduced Cholesterol:** Fermented foods, such as kefir, yogurt, sauerkraut, and kimchi, are high in probiotics, which may help decrease cholesterol levels.

**Weight Loss:** According to a Stanford Medical School study, gastric

bypass patients who drank probiotics, like those found in kefir, lost weight faster than those who did not. The link between weight reduction and probiotics is still being researched by scientists.

### **What Are Kefir Grains and How Do I Use Them?**

To make this highly beneficial kefir milk at home, you'll need to obtain some kefir grains. The "grains" of kefir is the driving force behind the entire process, holding all of the bacteria and yeasts required to ferment milk into creamy kefir. They're similar to the SCOBY in Kombucha, but instead of jiggly pancakes, they resemble cauliflower! Unlike Kombucha, you won't be able to produce your own kefir grains and will have to buy them. Where can you purchase kefir grains? Unless you have a buddy, who makes kefir, ordering your grains online is the most convenient option.

The milk is the only other ingredient in this recipe besides the kefir grains! You need to start with pasteurized milk, but after a few weeks of fermentation, you can gradually add new raw milk. In terms of fat content, the whole milk is better for the grains, though you can gradually switch to lesser fat milk as the fermentation. You can make kefir with both cow and goat milk, but cow milk gives better texture and flavor.

### **Essentials to make Kefir Milk**

While kefir is simple to make and does not require any special equipment, you will need a few common kitchen items.

1. Jug made of glass or ceramic that is large-sized enough to keep the required amount of milk.
2. Spoon with slots made of non-metal
3. Coffee filters or fine woven cloth to strain the liquid
4. Non-metal dish with a wide opening
5. Colander (non-metal) of excellent quality
6. Jar for holding kefir that has been fermented

## **How To Make Kefir from Scratch?**

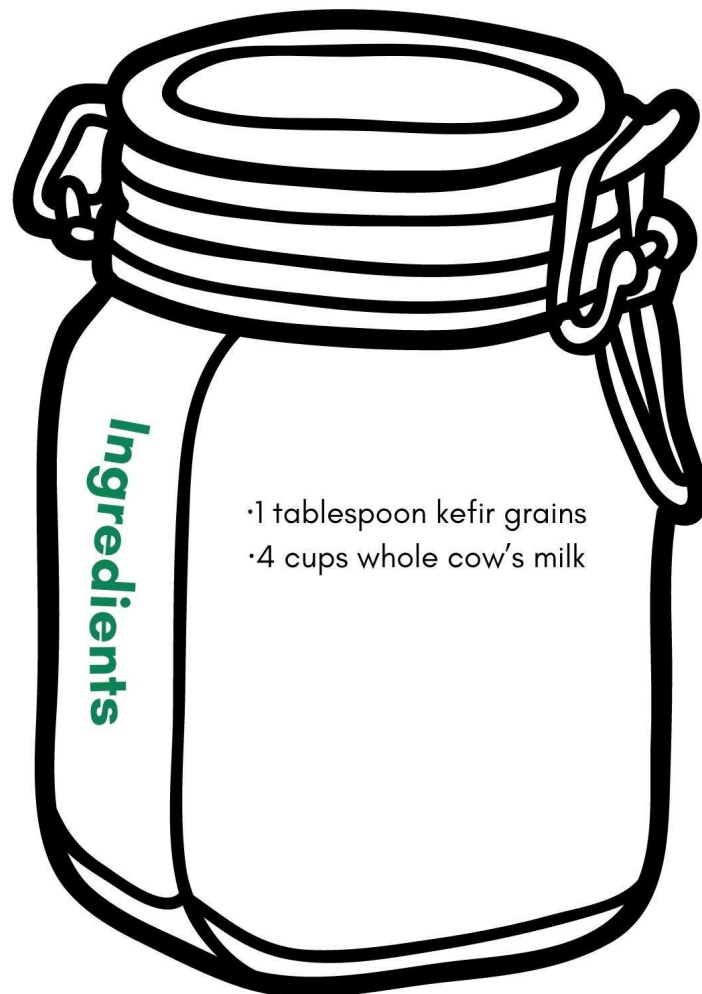
To make the kefir milk, combine 1 tablespoon of kefir grains with 4 cups of whole milk in a big glass jug. Using a couple of layers of paper towels or a few papers coffee filters, cover the jug. To keep bugs and dust out, secure the top with a rubber band.

Leave this jug to ferment for roughly 24 hours in a warm, dark place (65 to 85°F / 18 to 29°C). When your kefir has slightly thickened and smells fermented, it's ready. It's fine if your kefir has separated into a yellowish watery-looking whey. It's just a sign that you should either shorten the fermenting time next time or use more milk.

To strain, place a large-sized non-metal bowl below a fine-mesh non-metal colander; a plastic colander is great. Place the fermented kefir into the colander and stir gently with a plastic or wooden spoon to combine. There will be no removal of the grains.

To start a new batch, rinse and re-add the grains into the jar. Add 4 cups of new milk to restart the process and then repeat the 24 hours fermentation process to prepare a new batch. For storage, half-fill a sealable jar with the finished kefir using a funnel. Keep it in your refrigerator for up to two weeks, then serve.

# Milk Kefir Recipe



***Preparation time: 10 minutes***

***Fermentation time: 24 hours***

***Total time: 24 hours 10 minutes***

***Servings: 4***

## ***How to Prepare***

1. In a large-sized glass jug, place kefir grains and milk.
2. With 3-5 layers of paper towels or several coffee filters, cover the jug and then secure with a rubber band.
3. Place the jug in a warm, dark area for about 24 hours.

4. Through a fine-mesh non-metal colander, strain the kefir into a wide non-metal bowl, stirring with a wooden spoon.
5. Transfer the kefir into a sealable jar.
6. This kefir can be stored in the refrigerator for around 2 weeks.

# Chapter 20:

## How to Make Apple Cider Vinegar



Apple cider vinegar is one of the healthiest ingredients that we often put in our food. It not only gives a mild sour flavor to the food, but it can also aid in weight loss, reducing blood cholesterol, controlling blood sugar levels, and may improve the symptoms of diabetes. It is always great to prepare your own apple cider vinegar and keep it ready in the refrigerator for daily use. Once fermented, your bottle of apple cider vinegar can last for days, so this one-time investment of time and money is totally worth the effort. And let me tell you how to turn some of the very basic ingredients into a delicious tasting apple cider vinegar.

### **Things Needed to Make a Cider:**

Don't forget to bring the following home on your next trip to the grocery store if you are planning to make a cider soon. Or search them in your pantry, maybe some of these ingredients are already lying in one of your pantry cabinets or shelves.

## Organic apples or apple scraps

You can use entire apples or apple scraps to make this vinegar. It is best to use the leftover apple scraps to make the cider! If you can't collect fresh scraps all at once, keep them in the freezer until you replenish your supply. When it comes to fermenting, organic produce is always the best option! The number of apples required is entirely up to you. You can increase or decrease the proportions as needed.

If feasible, use a range of apples to make the greatest apple cider vinegar. A well-balanced finishing flavor is achieved by combining sweet and sour apples. Using two-thirds sweet apples, like Gala or Fuji, and one-third tart apple varieties, like Granny Smith, is an excellent option. Pink Lady would be somewhere in the middle.

## **Liquid**

Making fermented foods like homemade apple cider vinegar is best done with filtered or non-chlorinated water. Make the best of what you've got! Filtered water is the best to make a cider.

## **Organic cane sugar**

Fermentation is not possible without sugar. The microbes thrive in the apple water solution if there is sufficient sugar present in it. The best sugar to ferment this solution while adding a good taste to the vinegar is the organic cane sugar.

## **A Container**

Take a crock or a glass jar and select the size according to the amount of cider you want to prepare in it. A two-gallon glass crock is perfect for making large-sized amounts, but many people also use much small-sized containers, such as quart or half-gallon mason jars, which are perfect for small-sized quantities!

## **Bottles**

Bottles are needed to store the apple cider vinegar when it is ready to be strained. If you are making a large-sized volume of cider vinegar in a single session, then get several bottles.

Some of the other things that you will need include a strainer, which is important to strain the apple liquid solution, and a funnel to put the prepared cider vinegar into the storage bottles.

### **How To Make Apple Cider Vinegar?**

Now that you have all things that you need to make an apple cider vinegar, it's time to prepare this health potion and let it ferment until it is ready to be served. Let me explain the entire process few simple steps:

#### **Prepare the Apples**

This step is made even easier if you're using leftover apple scraps. There is no need to prepare anything. Allow time for your apple leftovers to defrost if they were frozen. A happy ferment is one that is not cold! If at all possible, I recommend mixing in some fresh scraps with your frozen scraps. This will ensure that your brew has live microorganisms. You can also use whole apples to make the vinegar. Wash the apples thoroughly with water and cut them into small-sized slices. You may throw the skins, cores, seeds, and even stems!

Fill your glass container halfway with apples by adding the apples to your glass container of choice. A 2-gallon jar is what I usually use, although you can use small-sized ones as per your choice! Make sure the container is not just clean but also free of soap residue, which can lead to off-flavors. You use ordinary white vinegar and hot water to clean all of your fermenting supplies.

#### **Add Water and Sugar**

Fill the container with room temperature to lukewarm filtered water until the apples are completely submerged. Keep track of the amount of water you're using as you go! To do so, I recommend using a measuring cup or a

jar with a volume that you can record. To know how much sugar to put in, we need to know how much water there is.

Now, add 1 tablespoon of sugar for each cup of water used, or 1 cup of sugar per gallon of water, scaling up or down as needed. Stir until the sugar looks to have completely dissolved in the water. This is where the "lukewarm" water comes in handy! I normally add a few glugs of finished apple cider vinegar to inoculate, and kick start a batch. This step isn't essential, but it may help avoid mold growth, especially if you're doing this in the winter.

### **Ferment and stir!**

Cover your container with a permeable material, such as a lint-free tea towel, old pillowcase, or coffee filter, once the apples, water, and sugar have all been mixed. I don't recommend using cheesecloth or any looser-knit material since fruit flies might get in! If feasible, place this container at a place with a temperature range of 70 to 75 degrees Fahrenheit. This temperature range is optimal for fermentation. The fermenting apple container should also be stored in a dark place. You can keep yours out on the kitchen counter for the first two weeks since you need to see and access it every day, but you can wrap it in a dark towel or pillowcase to mask the light.

The fermenting apples must be stirred every day for the first two weeks. The goal is to keep the sugar from settling to the bottom of the pan and submerge the apples floating on top. If the same apples are left to float on top of the liquid, mold may develop on them. Mold is avoided by stirring. It's not the end of the world if you miss a day here and there! However, I recommend making a strong effort to stir every day during the first week.

During this time, the apples will turn brown, and the liquid will get murky. The mixture should start to form little bubbles and smell like hard apple cider. A layer of yellowish-white sediment may accumulate on the bottom.

Everything is completely natural and helpful! Any raised mold on the surface that is fuzzy, green or white is not. On Day 3, when the apples begin to ferment, bubbles begin to form.

After a two-week fermenting, the apples turn brown, and the majority of the sink to the bottom of the container. Sediment settles at the bottom of the crock, mixing with the apples, and the liquid also turns brown and hazy. The bubbling activity decreases towards the end of week two, and the liquid becomes considerably more opaque.

### **Strain Apples**

It's time to remove the apples from the liquid after two weeks of daily stirring. To do so, we place a fine-mesh strainer on top of a large-sized bowl and place the contents of the crock through it slowly. You can also use cheesecloth or anything else you have on hand. The apples that were collected can now be used to make soil compost. Return the strained liquid to a clean, glass container and cover again as before.

### **Continue to Ferment**

This is where the game of actual waiting begins. Keep your covered crock in a cool, dark place for at least a month, if not longer! The bacteria will continue to work to convert more sugar or alcohol to acetic acid, resulting in vinegar. Depending on the storage circumstances and apples used, the rate at which your partially fermented cider transforms into full-blown vinegar will vary. Before you bottle your apple cider vinegar, it should normally sit for another 2 to 3 months.

You can taste-test your vinegar after a month of fermentation. Continue to the following step if the vinegar flavor is too strong for you. If not, leave it to ferment for a little longer. When in doubt, use these simple pH test strips to verify the pH of your apple cider! The pH of finished apple cider vinegar should be between 2-3.

During this period, the vinegar gets a layer of bacterial culture like

SCOBY (symbiotic culture of bacteria and yeast) on top, similar to Kombucha. It's a thin, smooth, off-white membrane built up of helpful bacteria and yeast that's gathered through time. It's very natural and harmless. When you are ready to bottle the vinegar, just throw it out.

### **Bottle and Store**

Transfer the prepared apple cider vinegar into bottles with tight-fitting lids once it has reached the desired fermentation level. You can store it in swing-top kombucha bottles or re-use old ACV bottles. Homemade apple cider vinegar does not need to be refrigerated because it is an acidic combination. It's preferable to keep it somewhere moderately chilly and dark.

Homemade apple cider vinegar can last up to five years if stored at room temperature. However, within the first two years, the quality and flavor will most likely be at their peak. I recommend that you to use this vinegar for the first two years.

# Section 3:

## Measurement Conversion Table

### Volume Equivalent (Dry)

Metric	US standards (Approximate)
0.5 milliliters	1/8 teaspoon
1 milliliter	1/4 teaspoon
2 milliliters	1/2 teaspoon
4 milliliters	1 teaspoon
5 milliliters	1 tablespoon
15 milliliters	1/4 cup
59 milliliters	1/2 cup
118 milliliters	3/4 cup
177 milliliters	1 cup
235 milliliters	2 cups
700 milliliters	3 cups
1 liter	4 cups

## Volume Equivalent (Liquid)

US standards	Metric (Approximate)	US standards (ounces)
2 tablespoons	30 milliliters	1 fl. ounce
$\frac{1}{4}$ cup	60 milliliters	2 fl. ounces
$\frac{1}{2}$ cup	120 milliliters	4 fl. ounces
1 cup	240 milliliters	8 fl. ounces
1 $\frac{1}{2}$ cup	355 milliliters	12 fl. ounces
1 pint or 2 cups	475 milliliters	16 fl. ounces
1 quart or 4 cups	1 liter	32 fl. ounces
1 gallon	4 liters	128 fl. ounces

## Weight Equivalents

Metric	US standards
28 grams	1 ounce
57 grams	2 ounces
142 grams	5 ounces
284 grams	10 ounces
425 grams	15 ounces
455 grams	16 ounces (1 pound)
680 grams	1½ pounds
907 grams	2 pounds

# Conclusion

Now you have lots of different ideas to pickle your favorite veggies, make yogurt, ferment kefir and prepare a savory bottle of apple cider vinegar at home. Some of the recipes call for several hours, days or even months for fermentation, which may be frustrating, but the taste of the final product is totally worth the wait. To make pickling and fermentation easier for you, make sure you have all the necessary tools by your side. Stick to the instructions given in the recipes and you are going to have a great collection of pickles and fermented goods. So, go ahead, pick the easiest of all the recipes and give it a try now!

# Glossary

**Anaerobic:** This word describes conditions that are devoid of oxygen. An anaerobic atmosphere is required for fermentation to break down carbohydrates and convert them to sugar.

**Brine:** A solution of saltwater. Brine is used for pickling or fermenting, and it works by pulling water out of the food's cells and eliminating any germs that could damage it.

**Incubator:** A resource that will aid in maintaining the temperature of your fermented food during the fermentation process.

**Koji:** A fermented starter prepared from rice and cultivated soybeans. It is in charge of breaking down the carbs and sugars found in the diet.

**Kombucha:** A therapeutic fermented beverage of Asian origins. A SCOBY tea and sugar are used to make it. It has a sour flavor to it.

**Kvass:** This fermented beverage originated in Russia as a brewed rye bread or beet beverage. It has a taste similar to root beer or cola.

**Lactic Acid:** This acid inhibits the growth of harmful bacteria that could degrade your food, changing it into fermented foods that you can eat.

**Lactobacillus:** A strain of bacteria that aids in the production of lactic acid from carbohydrates. It's in charge of converting starches into sugars and acids, and it's crucial to the fermentation process.

**Phytic Acid:** These antinutrients are found naturally in some cereals and can inhibit your body from absorbing beneficial minerals.

**Probiotics:** Probiotics, like lactobacillus, are microorganisms that are beneficial to our bodies, particularly our stomach! They can be found in a variety of foods.

**SCOBY:** Symbiotic Culture of Bacteria and Yeast. It's a necessary culture for manufacturing Kombucha, an ancient curative fermented beverage. It

looks like a flattened lump of yellowish gel.

**Starter:** Any pre-fermented product that is used to start the fermentation in a mixture of ingredients. The starter has the culture of bacteria that kick starts the fermentation process. Commercially available starter cultures can be purchased, or they can be made at home. All starters are made out of naturally occurring microorganisms, most notably Lactobacilli, as well as a combination of other food ingredients like water and wheat or dairy products like milk or yogurt.