

From the Owner of Rhythm of Healing - Creator of the Blissful Belly Toolkit

Ayurvedic Guide to Fermentation

Simple and Delicious Chutneys, Vegetable Ferments
and Beverages Inspired by Ayurveda



By NOAH VOLZ



Ayurvedic Fermentation Guide

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Introduction

Ayurveda has a rich history of fermented foods. As cows have long been revered in the homeland of Ayurvedic medicine many of the fermented foods that are found in Ayurveda are dairy based like *paneer* and *lassi*. *Paneer* is made by separating milk by using an acid such as lemon. The acid environment created by the lemon juice preserves the milk curds by promoting live cultures that work on the milk protein casein. The resulting milk curds are then pressed into a rectangular shape and wrapped in cheesecloth while they ferment for a couple days. As the whey has been removed and salt has not been added *paneer* cannot continue fermenting for a long period of time. *Lassi* is often called Indian buttermilk and it has been used to help promote digestion. It is made by adding a starter culture or yogurt to organic milk and letting it sit at room temperature for 24-48 hours and then combining spices or salt.

The staple foods found in India are rice and beans and so it is no wonder that the fermented version of these ingredients can also be found in Indian cooking in the form of dosas and *idlis*. Not everything in India is necessarily Ayurvedic and so this recognition is merely to show that fermentation does play a role in the traditional food cultures of India which was developed through an understanding of Ayurveda.

So what does Ayurveda believe about fermentation? The fermentation process takes place when an anaerobic and acidic environment is created. This allows a beneficial strain of bacteria called *Lactobacilli* to thrive and harmful bacteria are eliminated. Because of the acidic environment fermented foods are considered to be aggravating to the pitta dosha. As pitta is at home in the small intestine it is rare that it imbalances the digestive tract. This means that a large intake of fermented foods could aggravate symptoms of gastric reflux, acid indigestion and hyperacidity. This is true if the reflux is caused by too much stomach acid, but normally it is caused by low acidity and a drying out of the internal lining of the stomach. Ulcers, another indication of excess heat and thus Pitta is usually caused by *H. pylori* a type of harmful bacteria and so fermented vegetables may help. In excess fermented vegetables can cause an aggravation of Pitta, but they are normally recommend as a condiment and so it rare that this takes place.

Another common description of fermented foods is that they are *tamasic*. *Tamas* is the guna that represents death or inertia. Existence goes through three cycles: birth, life and death. *Tamas* is like compost, out of the decay comes new life. This is the same with fermented vegetables. As the vegetables ferment they create new life so as we consume them we receive some of the *tamasic* energy of the food itself, but we receive the new life in the form of the *Lactobacilli* bacteria that accompany them.

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Common Types of Fermentation

Fermentation is achieved by using a starter culture. A starter culture is a substance that creates an ecology in order for the proliferation of the beneficial bacteria. This dynamic ecological environment is the essence of the Ayurvedic concept of Agni. Agni refers to fire and in this context it is the fire of digestion. A starter invites the transformative power of Agni to awaken prana within the fruits and vegetables. There are many different types of starter cultures that can be used. Whey and brine are the primary ones that are used fruit and vegetable ferments, but kefir grains, dried starter cultures and juices from a ferment can also be used.

Starter cultures initiate a process called lacto-fermentation. Through the transformation of produce through lacto-fermentation lactic acid is produced by the beneficial bacteria *Lactobacilli* that break down the vegetables. The lacto in lacto-fermentation refers to these bacteria. Lactic acid acts as a preservative and inhibits bad bacteria that would otherwise putrefy the food. Lactic acid is created when the *Lactobacilli* ferment the starches and sugars in the vegetables and fruits. As they break these down they improve the bioavailability of certain nutrients and they also produce numerous helpful enzymes and antibiotic and anticarcinogenic substances.

Whey

Whey contains *Lactobacilli* when it is used to submerge the fruits or veggies. The easiest way to make whey is to strain yogurt or kefir. Whey will ferment things quickly and may give the end product a mushy texture. In order to avoid this add salt as it helps maintain the integrity of the cell walls and keeps the vegetables crunchy

Salt

Salt can benefit your ferments in a multitude of ways. Salt will pull the moisture out of the veggies which inhibits the growth of harmful bacteria. The remaining salty solution provides the perfect environment of *Lactobacilli* strains to grow. As other bacteria besides *Lactobacilli* are inhibited by salt fermentation is slowed down and so the fermented items can be stored for longer periods of time. Salt only creates the environment for growth of the *Lactobacilli* already present on the vegetables and fruits that are being used. It is possible to use too much salt and to halt the culturing process completely by killing all the available microorganisms. Salt is preferred in vegetables that taste better when crunchy because it hardens the pectin in the cell walls.

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Benefits of fermentation

Fermented foods have a long history of use in many traditional cultures now we recognize that they are detoxifiers and contain much higher levels of probiotics than probiotic supplements. Some of the benefits of fermented food are:

- They chelate (break down and eliminate) heavy metals and other toxins from your body.
- They improve mineral absorption and produce nutrients like B vitamins, vitamin K2, and vitamin D which improves vascular function and reduces the risk of stroke
- Improved regulation of dietary fat absorption which leads to decreased obesity and diabetes.
- Lowering risk of cell proliferation resulting in cancer.
- Mood and mental health improvements through acetylcholine production
- Prevention of skin inflammation resulting in acne.
- Balanced production of stomach acid.
- Produce compounds that inhibit the growth of pathogenic bacteria

Don't take my word for it. Try it yourself for 30 days and see what you find.

Basics of fermentation

Fermentation may take some slightly different tools than normal cooking, but by and large most everything you will probably have already. Some common equipment includes:

- A knife, grater or slicer
- A blunt meat pounder or potato masher
- A large bowl
- Salt and or whey
- Filtered water
- A fermentation vessel

Most likely the only thing you don't have is a fermentation vessel. The basic requirements of a vessel are that you use a cylindrical shape that is made of glass or ceramics. Square containers can harbor bacteria in the corners and plastic or metal containers leach chemicals into the kraut. The most common vessels are:

- Canning jars or hermetically latched jars- these are cheap and readily available and require a certain amount of creativity when weighing down the vegetables and covering them.
- Ceramic fermenting crocks - These include everything and are made with lead free clay. If you get one used make sure it doesn't have any cracks as bacteria can be harbored there.

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- Ceramic insert for a slow cooker – The round ones work better than oval ones when creating a weight and covering system.
- Glass jars with an airlock system – These are commonly used for the fermentation of wine or beer. An airlock system allows gas to escape from the jar while sealing oxygen in.

How to prepare a ferment

The basic procedure of any fermented condiment is to lightly wash and cut up the veggies or fruits. These are then mixed with brine containing sea salt, herbs or spices and then pounded briefly to release their juices. They are then pressed into a jar or fermentation crock, packed tightly so that no air bubbles remain. I like use a hermetically latched jar and then place the lid over the top of the jar without latching it closed so carbon dioxide can escape. An inch of water submerges the veggies as they can mold when exposed to air. Placing the veggies at least one inch from the top of the jar ensures that as the veggies expand they don't press out of the jar. It is important to use fresh organic produce, sea salt and pure water to achieve the best results. The best temperature for fermentation to occur is about 72 degrees which will allow lacto-fermentation to occur in 3-4 days. Colder or hotter temperatures will slow down or speed up the process respectively. After 3-4 days place the jar in a cool dark place (40 degrees) for up to six months to fully mature. In general fruits take much less time to ferment while veggies take longer.

Slight variations in the type of weighting methods exist. For fruits, condiments and vegetables where very little salt or no brine is used you can place a lid on top of the container. This will trap gas in so be careful when opening the lid. If you are using a brine a weight helps to submerge the veggies and keep them from being exposed to air where they can grow mold. Some options of weights include:

- A plate with a weight such as a rock on top that fits snugly inside the vessel
- A smaller jar filled with water that fits inside the vessel and presses down the contents
- A coaster made from glass or ceramic that is heavy and the right shape

Most of these options will create a tight seal, but if not it may be necessary to cover the top with a lid or tight weave cloth to ensure that bugs don't get in. The ideal cover allows gasses to escape as the produce is fermenting.

How to prep your veggies

Most recipes for vegetable ferments will provide you with the information you need to get the right proportions for fermentation to occur. If you are making up your own recipe then some of these guidelines can be useful. There are three general ways to prepare the fruit and veggies you use: grating, chopping, mashing and slicing. You can also ferment certain veggies like beans whole.

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Root vegetables do best when they are grated because they are hard and crunchy by nature and they will break down more quickly when grated because of the high amount of surface area that is created. Grating will affect the texture and will make the resulting ferment more like a relish. If all the veggies are grated then the ferment will culture quickly. Examples are:

- Carrots
- Radish
- Beets
- Radish
- Rutabaga

Chopping uses a knife to chop the veggies into small pieces or chunks and so there is larger pieces with less surface area that are created. This is the easiest method as it doesn't require special equipment or skill and can be used for most veggies. The main thing to remember is that chopped veggies may take more time because the pieces are larger. Some that work well with chopping are:

- Bell Peppers
- Cucumbers
- Summer Squash
- Asparagus
- Green beans

The last method is slicing, like grating it increases the surface area by creating long, thinly sliced vegetables. Like grating many of the vegetables used already have a crunch and require less brine than veggies that are less crunchy. Slicing is right in between chopping and grating in terms of the amount of time they take to ferment. Some suggestions of veggies to use are:

- Cabbage
- Zucchini
- Celery
- Fennel bulb

Once you have prepared all your veggies and created a ferment you are ready for the next steps.

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Monitoring your ferment for readiness

Fermentation depends on temperature. The warmer the environment in which the ferment takes place the faster the ferment will occur. The entire process is continual so flavors will change over time. Because of this it can be useful to monitor the signs of fermentation. These signs are used to indicate that the ferment can be moved from room temperature to cold storage.

As fermentation progresses the *Lactobacilli* create gases as they break down the starches and sugars in the vegetables. After a day or two look for these bubbles as they are an indication that the food is being preserved. Another indication is the smell. A sour smell is what you are looking for. If it smells rotten, nasty or putrid then it is time to start over. When the ferment has passed both of the previous two tests then give it a taste. The flavor will be sour. When your ferment has a flavor that is reminiscent of sauerkraut it is time to move it into cold storage. In warmer environment this will be about 48 hours and in colder environments it could take up to four days.

Fruit Fermentation

Because of the concentration of sugars in fruit they will ferment at a different pace than most vegetable ferments. They tend to ferment more quickly than vegetables and can turn into alcohol after 3 weeks. This process can be halted by using whey or water kefir grains in addition to a small amount of salt to assist the lactic acid fermentation. Another approach is to add vegetables to the fruit ferment.

Possible Problems

Although fermentation has a long history cross contamination can happen. Make sure that you use clean jars, clean hands and clean wooden, metal or plastic utensils. Place your ferments away from unclean areas or where they may come into contact with other culturing foods. Some additional tips are to:

- Rinse produce before fermenting it, but don't scrub it as that can remove the bacteria.
- Use the freshest vegetables possible.
- If you are working on separate fermentation projects keep them separate.

By following these simple steps you will be able to limit cross contamination. If cross contamination does happen it can create mold.

Identifying possible problems with your ferment

Many ferments especially those done with whey may develop a thin white film on top called kahm yeast. This is not harmful, but it is best to remove it. It usually develops because of a low acidic environment created by a lack of salt or excess warmth or oxygen. True mold comes in round, colorful deposits, although some molds are white. Molds or yeasts require oxygen to grow and that is why it is best to have a lid on your ferment and to have all the produce under liquid. If mold develops scrape the

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upper layer of the ferment off. To avoid mold ferment your veggies as close to 72 degrees as possible, make sure the vegetables are submerged, use the recommended amount of salt and use fresh vegetables.

Common Variations

Foamy Brine

The brine may become foamy depending on the type of vegetables that are used. Vegetables with higher sugar content like beets may foam the most. This is normal.

Pungent odor

Be able to recognize when the odor is sour and strong or rotten or putrid. If it smells nasty, not just sour discard it.

Slimy vegetables

Some micro-organisms produce slime. It is often due to a warm environment or not enough salt. If it is slimy throw it away.

Soft and Mushy Vegetables

Although there is nothing dangerous about mushy vegetables they are extremely unappetizing. Mushy vegetables usually occur because of too much heat or too much whey. Since it is not dangerous you could use mushy vegetables in a soup.

Crawley Things

When the vessel is left open flies may lay eggs in it and worms will grow. I would through it out, but the eggs are only on the surface so they could be removed and a secure lid could be created.

Pink

If there are no pink vegetables in your kraut and it turns pink this is an indication that the microorganisms are growing improperly and it should be discarded.

How to prepare different types of veggies

If you do a web search you will find that there as many ways to make sauerkraut as there are people making it. Everyone has their opinion on what works best. I have provided simple recipes, but there is room for more precision if you get inspired to learn more. In general you can vary the amount of salt that you use in order to find the right proportion for the recipe. The general rule of thumb is 3-4 Tablespoons per gallon of kraut which makes it as salty as a potato chip. It is always important to have the ingredients submerged in liquid so if you find that there is not enough liquid add more water. Most recipes recommend an airtight environment so find a setup that works for you. If your kraut is bad you will know by the rotten smell and you won't want to eat it.

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Simple Recipes

Sauerkraut

- 1 medium Cabbage cored and sliced
- 1 Onion, sliced
- 1 Tablespoon Caraway seeds
- 1 bunch fresh dill or 1 T dry dill
- 2 Tablespoon non iodized sea salt

Directions

1. Mix all ingredients in a bowl, mashing or kneading to release the juices.
2. Press kraut into jar and get all the air bubbles out. Leave an inch to 2 inches at the top as it will expand. Add water to submerge veggies and then place the lid over the jar, but don't clamp jar all the way down so that carbon dioxide can be released. It will ferment for 2-4 days at room temperature, then put it in the refrigerator for slower fermentation.

Kimchi

- 1 head Napa cabbage, cored and shredded
- 1 bunch green onions, chopped
- 1 cup carrots, grated
- 1 daikon radish, grated
- 1 Tablespoon freshly grated ginger
- ¼ teaspoon chile flakes
- 2 Tablespoon noniodized sea salt

Directions

1. Place all ingredients into a bowl and pound or knead with your hands to release the juices.
2. Press into a quart sized wide mouth jar, preferably one with a hermetic latch packing tightly to remove any air bubbles.
3. Add pure water to submerge veggies and allow at least an inch of space from the top of the veggies to the top of the jar. Cover and let sit at room temperature for at least 3 days.

Ginger Fennel Carrots

- 4 cups grated carrots
- 1 cup grated fennel bulb
- 2 Tablespoons freshly grated ginger
- 2 tablespoons sea salt

Directions

1. For people who are fermentation adverse this is a great recipe because it is sweet and delicious.

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2. In a bowl mix all ingredients and pound with a pounder or knead with your hands until juices are released.
3. Then place in a jar packing down tightly and leaving space at the top of the jar for the veggies to expand into. Add water to submerge veggies. Cover and let sit for 3 days.

Cucumber Relish

- 3 cups shredded cucumbers
- 2 red bell peppers, seeded and chopped
- 1 small onion, diced
- 1 bunch fresh dill or 1 T dried dill
- 1 tablespoon yellow mustard seed
- 2 tablespoons sea salt

Instructions

1. In a large bowl place all ingredients and press or pound until juices are released and let it sit for 30 minutes.
2. Begin filling the quart jar with the relish, pounding it down until the veggies are 1 inch below the rim of the jar or lower. Fill the jar with pure water and then close the lid without latching it tightly. Let it sit for 3 to 4 days, or until it becomes bubbly and then place in the refrigerator.

Pickled Beets

- 6 medium beets, peeled and sliced into 1/8"-thick rounds
- Seeds from 2 cardamom pods
- 4 whole cloves
- 1 Tablespoon freshly grated ginger
- Orange peel rind (the orange part) of 1 small orange
- 2 Tablespoons sea salt

Directions

1. Cook sliced beets in boiled water for 3-5 minutes. Drain and transfer to a bowl of ice water. When cool drain and mix with remaining ingredients. Then place in a glass jar packing tightly and add filtered water to submerge everything. The veggies will expand so leave space at the top of the jar and close the lid. Let it sit at room temperature for 3-4 days and then store in a cool dark place.

Fermented Bean Paste

- 3 cups of beans, cooked and drained (Adzuki are my favorite)
- 1 onion, diced
- 3 cloves of garlic, peeled
- 1 teaspoon powdered cumin
- 2 tablespoons salt

Directions

1. Place all ingredients in a food processor and pulse until smooth.
2. Place in a mason jar leaving space at the top and cover with water.
3. Let sit for 3 days and then transfer to the refrigerator
4. Serve as a dip with cilantro on top

Vegetables Ferments

The most common fermented vegetable is cabbage. Cabbage has a long history as being a food that can be used as medicine. In the near distant past it was used to treat digestive disorders, arthritis, tumors and wounds. More recently the sulfur containing compounds in cabbage have been used as antioxidants and anti-tumor medicines (Cheung 2010). There is also research that has identified cabbage as a powerful anti-inflammatory within the digestive tract (Cheney, 1949). Cabbage has many cousins such as Napa cabbage, Tat Soi, Bok Choy and others which have similar properties. The base of the traditional kraut recipes is usually cabbage and onion as onion is a good prebiotic food and helps the proliferation of beneficial bacteria.

Vata Kraut

- 1 large cabbage head cored and shredded
- 1 onion chopped fine
- 1 Tablespoon minced fresh ginger
- 2 Tablespoons whole fennel seeds
- 1 Tablespoon whole coriander seeds
- 1 Tablespoon whole cumin seeds
- 1 Tablespoon ground turmeric
- 1 Tablespoon dried basil
- 2 Tablespoons salt
- Optional: 1-2 cups of shredded carrots, turnips, daikon radish or other root vegetables

Directions

1. Mix all ingredients in a large mixing bowl and knead all ingredients for about 5 minutes. The amount of salt you use will depend on the size of the cabbage, use your intuition.
2. Stuff the mixture into a clean, dry large jar, pressing it down firmly as you go. Leave space at the top of the jar and add water to submerge ingredients. You can use a weight like a jar to keep the ingredients pressed down.
3. Close the jar and let it sit for two days tasting it once a day. Once it is the desired flavor transfer to the fridge. It will be best after two weeks.

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Pitta Kraut

- 1 large cabbage head cored and shredded
- 1 onion chopped fine
- 2 Tablespoons whole fennel seeds
- 2 Tablespoons whole coriander seeds
- 2 Tablespoons fresh mint leaves (or 1 tsp. dried mint leaves)
- 1 Tablespoon whole cardamom seed kernels (or 1 tsp cardamom powder)
- 2 Tablespoons salt
- Optional: 1-2 cups of thinly sliced cucumbers, cilantro, fennel bulb, chard stems

Directions

1. Mix all ingredients in a large mixing bowl and knead all ingredients for about 5 minutes until the juices are released.
2. Stuff the mixture into a clean, dry jar, pressing it down firmly as you go. Leave space at the top of the jar and add water to submerge ingredients. You can use a weight like a jar to keep the ingredients pressed down.
3. Close the jar and let it sit for 2-4 days until it tastes good to you. Transfer to the fridge. It will be best after two weeks.

Kapha Kraut

- 1 large cabbage head cored and shredded
- 1 onion chopped fine
- 1 Tablespoon fenugreek seeds
- 2 Tablespoons whole cumin seeds
- 2 Tablespoons fresh minced ginger (or 1 T ground ginger)
- 1 Tablespoon ground turmeric
- 4 whole cloves
- 1 medium sized cinnamon stick
- ½ tsp. black pepper or cayenne pepper or chili powder
- 2 Tablespoons salt

Directions

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1. Mix all ingredients in a large mixing bowl and knead all ingredients until juices are released and then let it sit for about 5 minutes.
2. Stuff the mixture into a clean, dry jar, pressing it down firmly as you go. Leave space at the top of the jar and add water to submerge ingredients. You can use a weight like a jar to keep the ingredients pressed down.
3. Close the jar and let it sit for 2-4 days. Taste it and when it tastes fermented transfer it to the fridge to slow down the fermentation process. You can eat it at any time, but it may be best after two weeks.

Pickled Carrots

- 1 pound (about 4 cups) of sliced carrots, they can be peeled
- 1 cup sliced cabbage
- 1 ½ tsp crushed dark mustard seeds
- 1 tsp whole dark mustard seeds
- 1/8 tsp turmeric and cayenne pepper
- 2 tablespoons sea salt

Directions

1. Grate or slice the carrots or cabbage.
2. Place all ingredients into a large bowl and massage with hands and let sit for few minutes while the juices are released.
3. Pack into a glass jar. Make sure ingredients are submerged in liquid adding water if necessary. Let sit for 3 days at room temperature and then transfer to the refrigerator.

Beet Kraut

- ½ a medium sized cabbage, sliced
- 2 carrots, grated
- 4 medium beets, grated
- 2 T Himalayan salt
- 1 T Caraway

Directions

1. Grate or slice the carrots, beets or cabbage.
2. Place all ingredients into a large bowl and massage with hands until juices are released from the salts effect on the produce.
3. Pack into a glass jar. Make sure ingredients are submerged in liquid adding water if necessary. Let sit for 3 days at room temperature and then transfer to the refrigerator.

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Liver Kraut

- 1 medium sized cabbage, sliced
- 1 onion, chopped, grated
- 1 bunch parsley, chopped
- 1 large cucumber, sliced
- 1 tsp turmeric powder
- 7 inches of burdock root, sliced
- 2 T sea salt
- 2 tsp cumin powder
- 2 tsp coriander powder

Directions

1. Prepare all the veggies and place all ingredients into a large bowl and massage with hands.
2. Pack into a glass jar. Make sure ingredients are submerged in liquid adding water if necessary. Let sit for 3 days at room temperature and then transfer to the refrigerator.

Herbal Kraut

- 1 medium sized cabbage, sliced
- 2 carrots, grated
- 7 inches of burdock root
- 1 inch of horseradish
- 1 bunch of kale
- 2 T minced peeled ginger
- Juice of ½ lemon
- 2 T sea salt
- 2 tsp thyme
- 2 tsp oregano
- 1 pinch cayenne

Directions

1. Grate or slice the carrots, beets, burdock, horseradish and cabbage.
2. Place all ingredients into a large bowl and massage with hands until juices are released.
3. Pack into a glass jar. Make sure ingredients are submerged in liquid adding water if necessary. Let sit for 3 days at room temperature and then transfer to the refrigerator.

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Chutneys or Relishes

Date Chutney (Khajur Chatni)

- 3 cups raisins
- 1 cup pitted dates
- 1 1/2 tsp fennel seeds
- 1 1/2 tsp cumin seeds
- 3 tsp coriander, ground
- 3/8 cup orange juice
- 2 Tbl fresh ginger root, minced
- 1/4 tsp nutmeg
- 2 teaspoons salt
- 1/4 cup whey or 1 Tablespoon salt
- 1/2 cup filtered water

Directions

1. Soak the raisins and dates overnight. Drain the water in a separate container (you can use it to sweeten oatmeal or other things).
2. Place all ingredients into a food processor and pulse until smooth and chunky. Then place into a mason jar and cover.
3. Let sit for 2 days and then transfer to the fridge.
4. It is best if the chutney is eaten within 2 months
5. This chutney is best when made with whey which is made by placing organic plain yogurt in a strainer over a bowl and allowing the liquid to drain out. The liquid is whey.

Ginger Chutney

- 1.5 cups chopped peeled ginger
- 1 cup raisins, soaked
- 1 Tablespoon lime juice
- 1/3 cup orange juice
- 1 tablespoon sea salt
- 4 tablespoons whey or 1 Tablespoon sea salt
- 1 cup filtered water

Directions

1. Peel ginger and soak raisins overnight. Drain raisin water and place all ingredients into a food processor except for the whey if you are using whey.
2. Add whey and pack into a glass jar. Make sure ingredients are submerged in liquid adding more water in necessary. Let sit for 2 days at room temperature and then transfer to the refrigerator.
3. Use within 2 months of making.

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Cilantro Chutney

- 2 large apples
- 2 bunches of fresh cilantro
- Grated rind of 2 lemons
- Juice of 2 lemons
- ½ cup or raisins soaked
- 2 teaspoons salt
- ¼ cup whey or 1 Tablespoon salt
- 1 teaspoon fennel seeds
- 1 teaspoon coriander seeds
- 1 teaspoon ground cumin

Directions

1. Place all ingredients except for whey in a food processor and blend into a paste.
2. Place in a jar and add whey. Add additional water to submerge if needed and close lid on jar lightly.
3. Let sit at room temperature for 2 days and then place in the refrigerator
4. Use within 2 months of making.
5. This chutney is best when made with whey which is made by placing organic plain yogurt in a strainer over a bowl and allowing the liquid to drain out. The liquid is whey.

Mint Chutney

- 2 cups fresh mint leaves
- 1 medium onion
- 4 cloves garlic
- 1 jalapeno, seeded and chopped
- 2 teaspoons toasted cumin seeds
- 2/3 cup shredded coconut
- 1 Tablespoon sea salt
- 4 tablespoons whey or 1 Tablespoon sea salt
- 1 cup filtered water

Directions

1. Place all ingredients except for salt, whey and water in a food processor and blend until finely chopped.
2. Place in quart sized, wide mouthed mason jar and press down tightly
3. Mix salt, whey and water and place into jar until submerged. Add more water if needed.
4. Let sit at room temperature for 2 days and then place in the refrigerator
5. Use within 2 months of making.

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Coconut Chutney

- 1 cup grated coconut (preferably fresh)
- 2 T fresh ginger, peeled and chopped
- ½ tsp salt
- 3 T coconut yogurt
- 2-3 T water
- 1 tsp sesame oil
- ½ tsp brown mustard seeds
- Pinch of hing
- 1 tablespoon sea salt
- 4 tablespoons whey or 1 Tablespoon sea salt

Directions

1. Combine coconut, ginger, salt and coconut yogurt in a blender with water to grind to a paste.
2. Heat the oil add the mustard seeds until they pop and then stir into coconut mixture.
3. Add whey and pack into a glass jar. Make sure ingredients are submerged in liquid adding more water in necessary. Let sit for 2 days at room temperature and then transfer to the refrigerator.
4. Use within 2 months of making.
5. To make whey place organic plain yogurt in a strainer over a bowl and allow the liquid to drain out. The liquid is whey

Mango Chutney

- 3 cups large mangoes peeled and cubed
- ¼ cup grated fresh ginger
- 3 T lemon juice
- 1 tsp cinnamon
- 1 tsp cardamom
- ¼ tsp cloves
- ½ cup chopped cilantro
- 1 teaspoon sea salt
- 2 tablespoons whey or 1 teaspoon sea salt

Directions

1. Peel ginger and place all ingredients into a bowl.
2. Add whey and pack into a glass jar. Make sure ingredients are submerged in liquid adding more water if necessary. Let sit for 2 days at room temperature and then transfer to the refrigerator.
3. Use within 2 months of making.
4. To make whey place organic plain yogurt in a strainer over a bowl and allow the liquid to drain out. The liquid is whey

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Apple Butter Chutney

- 1 T lightly roasted cumin seeds
- 4 sweet apples cored
- ½ cup raisins
- 1 T grated ginger
- 1 ¾ cups water
- 1 T tamarind paste (optional)
- ¼ T ground black pepper
- 2 teaspoons sea salt

Directions

1. Peel ginger and soak raisins overnight. Drain raisin water and place all ingredients into a food processor.
2. Pack into a glass jar. Make sure ingredients are submerged in liquid adding more water in necessary. Let sit for 2 days at room temperature and then transfer to the refrigerator.
3. Use within 2 months of making.

Garlic Chutney

- 4-6 T shredded coconut
- 2 tsp cumin seeds
- 2 tsp paprika
- 2 tsp salt
- Pinch cayenne
- 16 whole cloves of garlic
- 1 tablespoon sea salt

Directions

1. Place all ingredients a food processor or chop garlic roughly.
2. Pack into a glass jar. Make sure ingredients are submerged in liquid adding water if necessary. Let sit for 2 days at room temperature and then transfer to the refrigerator.
3. Use within 2 months of making.
4. When eating you can add oil or coconut yogurt to make it less pungent.

Green Tomato Chutney

- 4 medium green tomatoes
- 2 T cilantro, chopped
- 1 tsp cumin seed
- 1 clove garlic minced
- ½ hot green pepper, optional
- 2 bay leaves
- 1 tablespoon sea salt
- 4 tablespoons whey or 1 Tablespoon sea salt

Directions

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1. Chop tomatoes saving liquid. Combine with remaining ingredients.
2. Add whey and pack into a glass jar. Make sure ingredients are submerged in liquid adding more water if necessary. Let sit for 2 days at room temperature and then transfer to the refrigerator.

Apricot Chutney

- 2 cups apricots (fresh or dried)
- 1 apple cored and chopped
- $\frac{3}{4}$ cup lime juice
- 2 T chopped peeled ginger root
- 2 cups mint leaves
- 6 cardamom pods
- 1 tsp black peppercorn
- 1 tsp cayenne
- 2 tsp salt
- 1 tsp whey or $\frac{1}{4}$ tsp sea salt

Directions

1. Place all ingredients (except for the whey if you are using whey) into a food processor or chop them roughly.
2. Add whey and pack into a glass jar. Make sure ingredients are submerged in liquid adding more water if necessary. Let sit for 2 days at room temperature and then transfer to the refrigerator.
3. Use within 2 months of making.

Sweet and Sour Pineapple Relish

- 1 tsp mustard seeds
- $\frac{1}{4}$ cup minced peeled ginger
- 1 cored and peeled pineapple
- $\frac{1}{4}$ cup raisins
- 1 tsp cayenne
- 2 tsp sea salt
- 4 tablespoons whey or 1 Tablespoon sea salt

Directions

1. Peel ginger and soak raisins overnight. Drain raisin water and place all ingredients into a food processor except for the whey and pulse until chunky.
2. Add whey and pack into a glass jar. Make sure ingredients are submerged in liquid adding more water in necessary. Let sit for 2 days at room temperature and then transfer to the refrigerator.
3. Use within 2 months of making.

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Eggplant Relish

- 1 large eggplant, chopped
- ½ tsp sesame seeds
- 1 tsp cumin seeds
- ½ tsp fenugreek seeds
- 3 T tamarind paste
- 1 tsp cayenne
- 2 tablespoon sea salt, plus more for salting eggplant

Directions

1. Peel the eggplant and cut into strips. Place the strips into a bowl and sprinkle generously with salt. Gently massage the salt into the eggplant and allow it to sit, covered with a towel, for 1 to 2 hours to allow the bitter liquid to drain out.
2. Pour out the liquid and rinse the salted eggplant under water to remove some of the salt. Combine with remaining ingredients and pack into a jar, submerging ingredients with water.
3. Cover jar with lid and set in an undisturbed space for 3 to 6 days to ferment. After a taste test confirms it is fermented then transfer to a cool dark place like the refrigerator.

Beverages

Turmeric Tonic

- 1 – 2 cups turmeric root, peeled and cut into chunks
- 5-7 tamarind pods *or* 2 tablespoons tamarind paste
- Juice of 2 lemons
- ½ cup raw honey
- 2 quarts water

Instructions:

1. Make a tea with turmeric root by placing it in a quart of water and boil for 20 minutes.
2. If using tamarind pods crack them open and remove the sticky fruit.
3. Add 1 quart of cool water and tamarind paste to the turmeric tea and blend thoroughly to liquefy the cooked turmeric.
4. Add the lemon juice and honey, and blend once more.
5. Place the blended tonic into small jars with tight lids, leaving ½-1 inch of head space.
6. Ferment at room temperature for 1-2 days, then refrigerate for storage.

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Ginger Bug

Ginger bug is similar to kombucha because it can be the start of many natural fermented beverages. The mixture of sugars, ginger, and water captures wild yeasts and beneficial bacteria which can be added to teas and fruit juices.

- 3 cups water
- 3 teaspoons honey
- 3 teaspoons diced ginger
- Juice of ½ a lemon
- Additional honey and ginger for maintenance

Instructions:

1. Combine all ingredients in a quart jar with a tight lid. Shake it up and allow it to sit in a warm spot (72° to 80°F).
2. For the first week add 2 teaspoons each of honey and diced ginger to the mixture daily. After this the liquid will begin to get bubbly and form at the top of the mixture, that indicates it is ready to use.
3. Use 1/4 cup of the ginger bug starter per quart of sweetened and flavored liquid, cap the mixture tightly, and let ferment for 2 to 3 days.
4. In order to keep the bug alive and continue growing it, you will need to feed it regularly using the proportions above or place it in the refrigerator and feed it 1 tablespoon of ginger and honey once a week.

Whey

Whey is not a true beverage and it is most often used to ferment fruits. Whey is a type of protein found in dairy. There are many ways to make it using kefir, buttermilk or yogurt. The easiest is yogurt and that is explained below.

1. To make whey place organic plain yogurt in a strainer over a bowl and allow the liquid to drain out. The liquid that drains out is whey.

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