

Directions for Making Kefir

1. Remove the clumps of grains from the jar they came in using a fork. (Using a colander will allow you to capture more of the "baby grains," but is also more time-consuming and messy. Rest assured, your grains will still increase in size if you strain them with a fork.)
2. Place the unrinsed grains into a clean pint or similar sized jar. Fill the jar about 3/4 full. Let it sit on your counter out of direct sunlight for about 24 hours. Agitation aids the fermentation process, but is not critical; shake the jar a few times a day if possible, or whenever you think of it.
3. After 24 hours, remove the grains again with a fork, and transfer to a clean jar. Sample the finished kefir. If you like the way it tastes (keeping in mind you will probably want to sweeten it), use the same amount of milk for your next batch. If it seems too thin, use less milk next time or allow it to sit longer. If it is too sour, use more milk next time (you may need to switch to a larger size jar to allow enough airspace for the grains to "breathe"), culture it for a shorter period of time, or eat or give away some of your grains. (You can dilute overly sour kefir with milk to give it a milder flavor.)
4. Refrigerate the strained kefir milk if you plan to use it later. It will keep for at least several days in the refrigerator. Leave the new jar of grains and fresh milk out on the counter to repeat the process.

Notes

When you see a clear or yellowish liquid (whey) separating in the jar, this suggests you should use more milk next time, culture it for a shorter period, or store it in a cooler location during fermentation. However the kefir has not gone bad. You can shake the jar to mix the curds and whey and use it as you normally would (it may require more sweetening to balance the tartness), or drain off the whey overnight using muslin, cheesecloth, or a fine mesh strainer. The thickened kefir can be used like cream cheese (add salt and/or herbs), and the whey can be used for other fermentation products, such as chutneys, preserves, and drinks. Whey keeps for many months in the fridge.

Keep in mind that the grains will reproduce over time, so that you will need to continually adjust the amount of milk you feed them, or decrease the amount of grains you are using.

If you are careful about checking on the grains, refrigerating them can be a way to produce kefir more slowly. Place grains in a jar covered with fresh milk in the refrigerator and transfer them into fresh milk as needed, about every 7 to 10 days. *However, it is very easy to forget about the grains when they are out of sight, and if they are not fed fresh milk periodically, the cultures will weaken or die.*

If you are going on vacation or just need to take a break from kefir making, you can store the grains in the frig or freezer for a longer period, understanding that when you are ready to "reawaken" them, you may have to throw out your first few batches of milk, because the milk may begin to sour before the grains are active enough to do their job. See kefirlady.com for more info about storing grains. Grains that are left in the same milk for a long period of time will eventually die because they are starved of the lactose and other substances they derive from milk.

Directions for Making Yogurt

Gather your ingredients & equipment:

- milk (any mammalian milk, any fat level, pasteurized or not, homogenized or not)
- plain, unsweetened yogurt containing active cultures (homemade or store-bought, to act as starter) – you will need 1-2 Tbsp per quart of milk
- clean jar(s) & lid(s) – not needed if using a thermos or electric yogurt maker
- thermometer (optional)
- saucepan and stirring spoon
- ladle
- some means of keeping the milk at 110-115° F for 4-24* hours (cooler, thermos, oven with pilot light, electric heating pad, warm spot near heat source, yogurt maker, etc)

* Note: *Shorter incubation periods result in thinner, milder yogurt containing higher levels of lactose. Longer incubation periods result in thicker, tarter yogurt containing lower levels of lactose. Most people recommend 8-12 hrs incubation. If lactose intolerance is an issue, 24 hrs incubation is recommended.*

Choose your method:

OPTION A: High Heat – makes thicker yogurt; reduces bacteria in the milk that might compete with the cultures.

OPTION B: Low Heat – makes thinner yogurt; takes less time, but has slightly greater risk that the milk won't culture properly. Some people use the low heat method to retain heat-sensitive beneficial substances in raw milk.

HIGH HEAT METHOD

1. Get starter yogurt out of frig to allow it to warm to room temperature.
2. Pour milk in saucepan and heat on stovetop on med-high heat, stirring frequently to prevent scalding. When milk reaches 180° F (until bubbles begin to form but milk is not boiling), remove from heat. (Or for thicker yogurt, keep the milk at 180° and continue to stir for up to 30 mins.)
3. While milk is cooling, warm your jars (if using jars) by submerging in hot water, or placing in oven with pilot light. If using a thermos, fill it with hot water and seal. If using a cooler, place jars of hot water in the cooler and stuff towels around them, or fill the cooler with hot water or jars of hot water.
4. When milk cools to about 120° F, get jars (or thermos or yogurt maker) ready to fill.
5. When milk reaches 115° F (cool enough that you can just hold your pinky in it for 10 seconds), add starter to each container, use ladle to add a half cup or so milk to each container and swish around until dissolved, then finish filling the container(s) with milk.
6. If using jars, quickly place them in the cooler, warm oven, or wherever you plan to incubate the yogurt. Try to choose a place where the milk will not have to be disturbed (agitated) during incubation, as this slows the process.
7. Monitor the temperature of the incubation site to be sure it stays at 110-115° F for at least 4 hours. Re-warm milk as needed to maintain this temperature until you are happy with the taste and texture of the yogurt. (For example, my cooler loses heat over time, so after letting the milk incubate overnight, about 8-9 hrs, I fill the cooler with hot water and incubate the milk another 2-4 hrs.)
8. Refrigerate finished product. Will keep for 1-2 weeks, becoming more sour over time. (Set aside starter for your next batch if you wish. The starter will weaken if not propagated about once a week. If tended regularly, you can keep a yogurt culture going indefinitely!) Sweeten or flavor the yogurt to taste.

LOW HEAT METHOD: Similar to above, but warm containers ahead of time, and heat milk only to 115° F instead of 180°.

THICKENING YOGURT:

Homemade yogurt will almost always be thinner than store-bought yogurts, which often contain thickeners. Your yogurt will turn out thicker if you (a) use the high heat method, (b) maintain the milk at 180° for a longer period, (c) make sure you're maintaining 110-115° during incubation, and/or (d) allow it to incubate longer. Some people add gelatin, pectin, or powdered milk to their homemade yogurt (*after* incubation is complete) to thicken it. *Another strategy is to allow the finished yogurt to drain in a cheese-cloth lined colander (over an empty container to catch the whey) for a couple hours or overnight. Depending on how long you drain the yogurt, you can make thick Greek-style yogurt or yogurt cheese!*

How to Make a Veggie Ferment (also called kraut, kimchi, curtido, etc...)

Ingredients & Supplies: veggies of choice; sea salt; wide glass jar or crock; spoon; canning funnel (helpful, but optional). *Plastic or metal vessels aren't used in fermenting since the acidity can cause leaching.*

1. **Cut up or grate veggies** coarsely or finely, keeping in mind that the finer they're cut, the faster the fermentation. Remember that tomatoes are really fruits. Beets and carrots act like fruits due to sweetness. Adding these to veggie ferments is common and fun, but makes your mix ferment more quickly due to higher sugar content.
2. **Combine all the vegetables in a large bowl and salt to taste.** They should taste quite salty, but not unpalatable. If you want to measure, Sandor Katz, the fermentation guru, suggests 3 TBSP. **sea** salt per pound of veggies. (Regular salt has additives, so sea salt works best.) *Don't skip or reduce the salt unless you're using a whey recipe.* If you're using spices or juicy additions like fruits, onion, garlic, ginger, sauces, etc., wait to mix these in at step 4.
3. **Let the veggie mix sit out for 30 mins. to half a day to release their juices,** depending on how much time and patience you have. You can lightly cover the bowl if you wish. (Some do this step with a brine solution.)
4. **Stir in any spices, fruits, or sauces you're using thoroughly, and then pack the veggies tightly into your jar(s) with a spoon, pestle, or wooden pounder. Leave about 1" at the top to allow some bubbling room. Keep pressing firmly until the juices release and rise up to cover all the food.** If there's not enough juice to cover, make a brine (about 1 tsp. sea salt per 1 cup warm water) and pour it in to fully cover the vegetables.
5. **Cover your jar or crock loosely with a lid or plate, and let the ferment sit out of direct sunlight,** somewhere you won't forget to **visit it daily.** **Press the veggies down below the salt solution each day** to avoid surface mold. (Surface mold or "bloom," although yucky, is normal, may be skimmed off, along with any discolored surface veggies.) If you skip a day, no worries. Unless your house is very warm, vegetable fermentation goes slowly. Keeping the cover loose **helps avoid explosive juices and pressure build up.** **Place a plate or shallow bowl under the jar so any overflow will be collected.** Sometimes people weigh down the veggies to keep them submerged.

~ Depending on your taste preference and the room temperature, most veggie ferments take from 4 days to a month to ripen fully to the maker's satisfaction. Since every ferment has a different chemistry, and each kitchen a different temperature, **the taste test is most reliable.** Sometimes it's so good that it's hard to wait!

~ Due to the presence of helpful lactobacilli during fermentation, botulism or "invisible food poisoning" is **not** a danger here, so it's fine and safe to experiment with your recipes. Go ahead and change the textures, colors, flavors, and fermentation to suit your taste. It's fun and economical to use vegetables in season like people all around the world do. When your ferment goes bad, all your senses will tell you! *A faint "off" or even rotting smell due to off-gassing bacteria is normal during the fermentation process,* but the food itself should look, smell, and taste good after you've removed the lid and stirred it up a bit. Overfermented food gets alcoholic, vinegary, and extremely smelly, but won't hurt you. Koreans turn this sour matter into a hot, delicious "kimchi soup".

~ Sandor Katz's helpful article, "Vegetable Fermentation Further Simplified," can be found at: <http://www.wildfermentation.com/resources.php?page=vegetables> (or search the article title).

~ You Tube or other free online fermentation videos can be helpful if you need a review. Each person's video may show a completely different method from the next, which can seem confusing, but keep in mind that since fermentation is so flexible, all of these methods work. Choose the style that feels right to you. One free video you might start with is "**Fermenting Vegetables with Sandor Katz**" on You Tube.

~ **Specific Recipes will be posted at SustainJefferson.org a few days after the skills fair.**

Recipes & Ideas for Fall Vegetable & Fruit Ferments

Veggie Ferments: Any kind/color of chopped cabbage works great as the main base to form roughly 75-95% of your vegetable mix. Then mix in one, several, or all of these additions for variety:

- radishes (any kind), rutabagas, or turnips, sliced or grated
- celery root/celeriac, parsnips/parsley root, burdock root, sliced or grated
- beets (use a small amount- these ferment fast like fruit), sliced or grated
- carrots (in moderation, unless adding whey), sliced or grated
- hot peppers (chop well) or hot sauce/flakes (*be sure no additives, or may harm the ferment)
- fresh ginger, minced, grated, or juiced
- garlic, shallots, scallions, leeks, onions, chopped or minced; fresh garden herbs; caraway or dill seeds
- greens (in moderation, since these have a high water content), chopped roughly
- grated apple or fresh or dried cranberries, raisins, etc. (small amount- fruits speed up the ferment)
- any kind of seaweed, fish sauce, or anchovies (obviously not seasonal or local, but very nutritious additions, typical in kimchi. Be sure there are no additives!)

*Endless recipes for fermented vegs. available online if you'd like more specific ideas.

Apple Chutney – makes 1 quart – much faster & easier than applesauce- delicious mixed with kefir, or on oatmeal, ice cream, pancakes, grilled meat, or spicy rice and curry dishes.

- 3 cups apples, washed, cored, and chopped coarsely (by hand or machine)
- 1/2 cup whey
- 1/2 cup lemon juice (fresh squeezed lemons taste best, but bottled is fine)
- 1 cup water
- 1/4 cup unrefined sugar, conventional sugar, or other natural sweetener
- 2-4 tablespoons mixed spice (2T cinnamon + your choice of mixed ginger, cloves, allspice, cayenne etc.)
- 1 cup chopped walnuts, hickory nuts, or other nut (optional; if not using, reduce spices to taste)
- 1 cup raisins
- 1 teaspoon sea salt

Mix all ingredients thoroughly in a bowl. Pack down firmly into a quart jar so mix is well moistened. Leave a bit of space below the rim for possible bubbling. Cover loosely and leave at room temp. out of direct sunlight. Push down the fruit daily with a large spoon to keep moist, and taste. After 2-3 days when you like the taste and consistency, move to the refrigerator to slow down fermentation. (If it's hot, this may only take a day.) Will keep for several weeks refrigerated, especially if you occasionally push down or stir the contents to keep them moist and compacted, minimizing air space.

Ketchup – makes 1 pint – fun, fast, easy way to use extra tomatoes (use paste tomatoes if you have them)

1. Quarter 3-5 tomatoes (dep. on size) and remove seeds and all inner surface juice by scraping with a knife, then process to a thick, smooth as possible texture in blender or food processor. You want about 1.5 cups of tomato paste to result from this. It's fine to use canned tomato paste too, but unsalted, organic/no additives is best.
2. Put the paste in a bowl and stir in 1/8 cup whey, 2 tablespoons apple cider vinegar, and ¼ cup honey or maple syrup (up to ½ cup sweetener works too, if you like super sweet ketchup)
3. In a small separate bowl, make a spice mix that results in about 1 to 2 teaspoons total spice, to taste. Some people like to keep it sweet (1/2 tsp. cinnamon + 1/8 tsp. cloves + 1/8 tsp allspice + ¼ tsp mustard powder). I prefer savory spices to balance out the sweetener in the recipe. (1 tsp. cumin, ½ tsp. cayenne, ½ tsp. thyme). I use more savory spice than that in my own ketchup, but start conservative and keep adding to taste until you're satisfied.
4. Add spice mix to tomatoes, stir or machine blend everything together very well; fill and cap your jar, and leave out 1-2 days before refrigerating if you'd like a more fermented taste. Otherwise, this will ferment slowly in the fridge and should last at least several months, if not longer.