

Quick and Easy Homemade: Greek Yogurt
An Albion District Library Workshop
Tuesday, February 19, 2013

I. Greek Yogurt vs. Greek-style Yogurt

A. Greek Yogurt

Greek yogurt is thickened by straining out whey from the yogurt solids. Whey is high in lactic acid, which causes yogurt to be sour or tart. The less time yogurt solids stay in the whey, the more sour or tart it can become. The whey, which can make up a full half of the body of your resulting yogurt, can be disposed of or used in various ways, which will be discussed later. True greek (strained) yogurt will list only “Grade A Milk” and maybe “live cultures” or a combined “Cultured Grade A Milk.”

B. Greek-style Yogurt

Greek-style yogurt uses pectin, gelatin, gum, starch, or other ingredients (such as non-fat dry milk powder) to thicken regular yogurt, with all its accompanying whey. This is usually done at the commercial level, but can be done at home. These “greek-style” yogurts can easily be spotted amongst the “greek yogurt” labeled varieties by checking the ingredient list.

C. Chobani (made in USA) versus Fage (made in Greece) Lawsuit – is it really “Greek” if it’s not made in Greece?

II. Milk Base Options

A. Dairy, Soy, and Nut Milks

1. Dairy Milk Yogurt

You can use a wide variety of dairy milk products, but it’s important that your milk base has not been subjected to UHT (ultra-high temperature) pasteurization. While all milk products are pasteurized for safety, UHT-pasteurized milk will say so on the label. I also highly recommend not using flavored milk (chocolate, strawberry, etc), as you can’t really trust how the flavors added will turn out once the live cultures have processed them.

2. Soy Milk Yogurt

You can use store-bought dairy or soy yogurt with live cultures as a starter or by non-dairy, dry cultures from many health-food stores or online. Some home yogurt makers prefer using dry cultures than depending on the freshness of store-bought yogurt. Soy milk yogurts do tend to be thinner than dairy milk yogurts, unless you add some type of thickener. Often, you will need to add a small amount of sugar or natural sweetener (agave, cane syrup, etc.) to get the bacteria going. Do not use fat-free varieties, as the yogurt will not thicken properly. Generally, you should look for an unsweetened milk with at least 5% fat.

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3. Nut Milk Yogurt (Almond, Coconut, etc.)

You can use unsweetened nut milks to make homemade yogurt, but do not use fat-free milks, as they will not thicken properly. As with soy milk yogurt, the process is essentially the same as dairy milk, but you may need to add a sugar of some type for the bacteria to ingest. Generally, you should look for an unsweetened milk with at least 5% fat. You may need to experiment with various milks to find the one that works best for you.

III. Starters

A. Fresh Yogurt

Fresh yogurt is the most easily-available type of starter. You can use store-bought yogurt or a little bit left over from your last batch. But you should use the freshest you can find, to ensure the most living bacteria. You don't need much to inoculate milk, usually 1-2 Tbsp per quart of milk. Yogurt cultures are living creatures much like us, and they reproduce better when they aren't crowded.

B. Dry Yogurt Cultures

This is your best option if soy yogurt is not available in your area and you cannot use even a small amount of dairy. Dry yogurt culture/starter is freeze-dried and packaged in either single-use amounts or in jars. Follow the manufacturer's instructions on how much starter to use. They are usually available at health-food stores or online. Some home yogurt makers have used the probiotic capsules available from drug stores, though I cannot speak to their effectiveness.

IV. The Process

A. Pasteurization and Denaturing Milk Proteins

It's important to cook your milk base in order to pasteurize it and, at least in dairy milk, to break down the milk proteins which makes for a thicker product. In general, this means bringing your milk up to at least 165 degrees for at least 20 minutes, which makes sure that the only thing living in your milk is the bacteria you put there. This is why it's also very important to make sure that all of your equipment is very clean, so that they don't contribute anything living to the mix. You will need a cooking thermometer of some kind and those with alarms are best.

At least with dairy milk, you can achieve a thicker end product by increasing your pasteurization temperature to 180 degrees and keeping it there for 20 minutes. At this temperature casein, milk protein, denatures, meaning that it unwinds, leading to a thicker product. This is also when you would add any additional ingredients for flavoring or thickening.

1. You can pasteurize, cool, and incubate your milk base/yogurt in your slow cooker. This is, however, the slowest method.
2. You can bring your milk base to temperature on a stovetop, making sure not to burn your milk.

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3. You can microwave your milk 15-20 minutes until it hits 180 degrees. This is one of the fastest methods and will not burn the milk.

C. Cooling

It's vital to cook your milk base down to at most 120 degrees before you add your starter. Any higher and you will kill your live cultures, leading to warm, oddly stinky milk, instead of delicious, creamy yogurt. There are several ways you can do this, including pouring your hot milk into a cold device (slow cooker) and letting it absorb some of the heat, bringing the temperature of the milk down. You can put your hot container (pot, slow cooker, or bake-safe glass bowl) into a cold-water bath, swiftly pulling heat away from the milk. You can also seal or cover your hot milk and allow it to slowly cool down.

My favorite is a hybrid method. I use the cold-water bath to bring the temperature down to approx. 130 degrees, and then pour it into my cold slow cooker. The ceramic absorbs some of the heat, bringing it down to or under the 120 degree mark.

D. Inoculation and Incubation

Once your milk base has reached 105-120 degrees, add the necessary amount of starter to your base and whisk/mix very well. At this point the goal is to keep your inoculated milk at a good temperature for incubation of the live cultures. This usually means 90-110 degrees, but really anything over 40 degrees will work.

You can incubate yogurt for 4-12 hours, though I recommend 6-10 hours for a standard, American-taste yogurt. The longer you incubate yogurt, the thicker it becomes, but also the more sour/tart it becomes, lending a very European yogurt taste to it. Americans tend to prefer a sweeter, more milk yogurt taste, but it's fully up to you.

E. Refrigeration

When you've reached the amount of incubation you want, refrigerate your yogurt to slow (but not stop) the incubation. If you want to make greek or strained yogurt, this would be the time when you would begin that process (see below).

F. Straining

There are several techniques to thicken your homemade yogurt. I've found that the easiest is to use a colander or salad spinner lined with either a clean tea towel, several layered sheets of strong paper towel, several layers of brown coffee filters (easier to pick out), or, if you have it, a double layer of cheese cloth or butter muslin.

You will notice whey draining out immediately. The longer you allow your yogurt to drain, the thicker it will become. Over 12 or 24 hours, you will end up with a soft spread with the consistency of cream cheese and the tang of yogurt. When moving your yogurt to a container, be sure to mix it well to redistribute the remaining whey throughout the mass.

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G. What to do with the whey

You can always simply dispose of the drained whey, but it does have several uses.

1. Use in baked breads in place of the water.
2. Feed it to your outdoor plants. It's very good for tomatoes with its high calcium content.
3. Use it to make lacto-fermented vegetables and fruits.
4. Use it as you would buttermilk to make baked goods or to marinate meats.

H. The Method

1. Ceramic-Lined Slow Cooker

You can use your ceramic-lined slow cooker to heat, cool, and incubate your yogurt. You can also simply use your slow cooker to receive the heated milk base, place the lid, and then cover your (off and unplugged) slow cooker with 1-2 heavy towels and allow the residual heat to incubate your yogurt. When the incubation process is complete, you can even put the ceramic inner lining directly into the refrigerator.

Advantages

- One pot, one thing to wash and sanitize
- Very hands-off, "set-it-and-forget-it"
- Low electricity requirement

Disadvantages

- If you choose to heat, cool, inoculate, and incubate your yogurt in your slow cooker, it is the slowest method.
- Your slow cooker, while very well insulated, is unlikely to keep the prime incubation temperature for the full 6-10 hours.

2. Mason Jars and Hot Water Bath

You can fill very clean 1-quart canning jars with your inoculated base and put them into a large pot on top of a heating pad on medium. Carefully fill the pot up with 100-110 degree water, only up to the level of the yogurt in the jars. Some users of this method put a lid on and don't mind the dripping condensation, while others advocate not using the lid and periodically added water to the pot to keep the level even with the yogurt.

Advantages

- Allows you to track the temperature of the water bath and keep your yogurt at the prime incubation temperature for as long as you need.
- You can incubate multiple types or flavors of yogurt at one time.

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Disadvantages

- Requires oversight, at least the first time, to find out what heat setting on the heating pad is needed to maintain 90-105 degrees and to add water as needed.
- Greater electrical demand, as the heating pad may be on for several hours.

I. What To Do If Your Yogurt Fails

1. If your yogurt fails to set, several things could be at fault, including inactive starter. You can re-inoculate it and try again.
2. You can boil your failed yogurt and make ricotta cheese! (see link below)

J. Favorite Resources

1. Girls' Guide to Guns and Butter

An American woman who grew up in Soviet Azerbaijan, a very dairy-based culture and for whom making yogurt is a regular activity. <http://girlsguidetobutter.com/2010/02/crock-pot-yogurt/>

V. Recipes

A. Yogurt Cream Cheese

Simply drain your yogurt until it reaches the desired consistency.

B. Cucumber & Avocado Cool Summer Soup

- 1 avocado, skinned
- 2 cucumbers, peeled and seeded
- 2 cups of greek yogurt
- 1 cup of cream cheese (unflavored)
- 2 Tbsp lemon juice
- 1 tsp salt

Blend together until smooth, pulsing first to get it going. Feel free to add additional flavorings, as desired, including jalapeno, cilantro, garlic, tomato, etc.

C. Yogurt Pizza Crust

- 1 cup self-rising flour OR 1 cup AP flour + ½ tsp salt + 1 ½ tsp baking powder
- 1 cup greek yogurt

Mix well. Knead on a floured surface, allowing it to take in any additional flour (sometimes up to an additional ½ cup). Let it sit for about 5-15 minutes to hydrate and rise slightly. Roll out onto a baking sheet or cake pan, add sauce, cheese, and toppings, and bake at 350 degrees for 30-45 minutes, checking often.