Congratulations you have some active sourdough starter

Now what?

Now we learn how to care for an active sourdough starter.

My instructions for maintaining a sourdough starter are for the home-baker, the baker who is not making bread every day, or the baker who just wants to have sourdough starter to bake with when they want it.

My instructions teach you how to store your sourdough starter in the fridge which puts it in a semi-dormant state. It is still alive, just not actively producing gases and the microbiome is not actively blooming. This semi-dormant state is what allows you to ignore your sourdough starter for a few weeks at a time without having to feed it. It's ideal for the home baker who does not need to make bread every day.

Yes, there are some bakers out there who insist on keeping their sourdough starter on the counter. If they do that, they have to feed it every day. Every day. Without fail. Sounds like a lot of work, right? It is. It's also very wasteful because feeding a sourdough means there is always "discard" to deal with. Do not store your starter on the counter unless you are using the starter everyday.

This document is going to teach you how to control your starter, not have your starter control you.

Active starter is the bubbling liquid mass that is used to make your baked goods. You need to learn how to store that active starter in the fridge and that involves learning how to put it into a semi-dormant state. It is still alive, just not active.

A cold fridge forces the microbes to slow down and almost completely stop consuming starch. But those microbes will only stay semi-dormant for so long. **You must feed your starter at least once a month to keep it in good health.** If you're using it more often than that, great! If you don't feed it at least once a month then it is going to die. Every living thing is like this and a sourdough starter is no different.

The process you are about to learn is one of the least involved methods of caring for a sourdough starter. If you can't manage to feed your starter once a month then you probably should not have one. There's no shame, it's just not the right time in your life to be caring for a sourdough starter.

The following instructions and pictures walk you through a starter that has been sitting in the fridge for a few weeks and needs to be fed.

These pictures show you what is normal and what is not.

There are also instructions here on how to correct some of the issues most bakers run into when working with a sourdough starter.

Remember, this is not commercial yeast. There is no instant gratification with a sourdough starter. So dig in, you have some delicious learning ahead!

Quick feeding instructions

You will use all-purpose flour to feed your starter. Why? Because sourdough starters consume starch and simple sugars. There is more starch and simple sugar in all-purpose flour, and much less starch in bread flour. Also, the sugar you feed your starter is all simple sugar and easily digested by the sourdough starter. If your sourdough starter has been living in the fridge then it has been in a coma-like state (semi-dormant) so you'll want to feed it food that is easily digested and not make it work so hard for nourishment (it's just coming out of the coma). Once it's active and lively, then you can make it work for its food (bread flour and no sugar). Make sense?

1:2:2 No matter how much sourdough starter you start with, your sourdough starter will do best if you feed it approximately 4 times its weight (or volume) with flour and water. That ratio looks like this: **1:2:2 (1 part sourdough starter, 2 parts flour, 2 parts water)**

For example, if you have a scale at home and you weigh your semi-dormant starter that's been living in your fridge it likely weighs around 100 grams (or 4 ounces) and by volume that looks like approximately 1/2 a cup. This is approximate only, yours may weigh less or more.

You need to feed that 100 grams of semi-dormant starter: **200 grams of flour and 200 grams of water, plus a pinch of sugar to get it going quicker.** Don't panic if you go over or under that formula by a few grams either way; if you can get close to those amounts it will be fine.

Or, if it's about 1/2 cup by volume you need to feed it: **1 1/2 cups of flour and about 1 cup of water, plus a pinch of sugar.**

Why isn't the water the same volume? Because water weighs more than flour by volume. 1 cup of water (by volume) weighs 250g while 1 cup of all purpose flour (by volume) weighs approximately 130g. Therefore, you need to use less water if doing this using volume measurements.

Get yourself a scale because if you want to be a real baker, real bakers weigh their ingredients so they always get consistent results. A descent digital scale is not expensive $10 at Superstore/Walmart and $20 at Costco. Wonder why your bread or baking doesn't work out sometimes? It's almost always because you measured an ingredient incorrectly. Volume measuring cups are terrible because they are not precision instruments like a digital scale is. If I weighed 1 cup of flour that I measured, it would likely weigh a different number than 1 cup of flour that you measured. That's just fact. One of us would pack more flour into that measuring cup, that's what makes measuring cups terrible baking tools. Get yourself a scale **that weighs in 1 gram increments** and once you know how to use it, you'll rarely pick up your measuring cups again. Especially if you are determined to make good sourdough bread.

As you move on in your sourdough journey, you will understand better how much starter you actually need every time you bake bread, or make a sourdough baked product. For example, **I only need 200g of starter every time I make a batch of bread. Therefore, I only ever keep 50g of starter in my fridge. Remember 1:2:2? I feed that 50g of starter 100g of flour, 100g of water and a pinch of sugar. When it is active and bubbling, I remove 200g of that mass and put it in my bread dough and return 50g to the fridge. I have no discard and no waste. It's a perfect formula for me.** Now it's time for you to figure out your perfect formula!

The pictures in the following document show how to make a very large batch of starter. Adjust the amounts according to what you need.

Semi-dormant Sourdough Starter cold from the fridge

Does this look normal? YES!

The yellowish clear liquid that forms on the top of the starter is normal. This is referred to as "hooch". It is a natural separation that occurs when the starter is entering a semi-dormant state. The hooch has a pungent alcohol smell and taste, and, in part, it is what contributes to the flavour of your sourdough starter.

Too much hooch can ruin the starter. When you are ready to re-activate your cold starter (cold starter lives in the fridge and is in a semi-liquid state as above) pour the hooch off and save it (this you can add to your bread dough when you start mixing it as it is full of flavour). If there is only a little bit of hooch on the top then mix it back into the solids that have settled on the bottom of your container and proceed with the feeding. If you are not reactivating your starter then leave it alone with the hooch layer remaining on top but don't forget about it. That hooch can get so acidic it will start to kill off your microbiome. The hooch is a good indicator of the health of your starter: clear and yellowish is normal, dark grey or black is not normal and is an indication your starter is dying or is already dead.

When the hooch turns very dark grey or black this is an indication that your sourdough starter has either been contaminated by a foreign bacterium or has been left so long between feedings that it has died. **Always feed it and see if there are enough sourdough microbes left that will revive.** There is a tutorial on my website of how to dry your starter which is what you should do if you are leaving town for any longer than 3 weeks.

Semi-dormant sourdough straight from the fridge

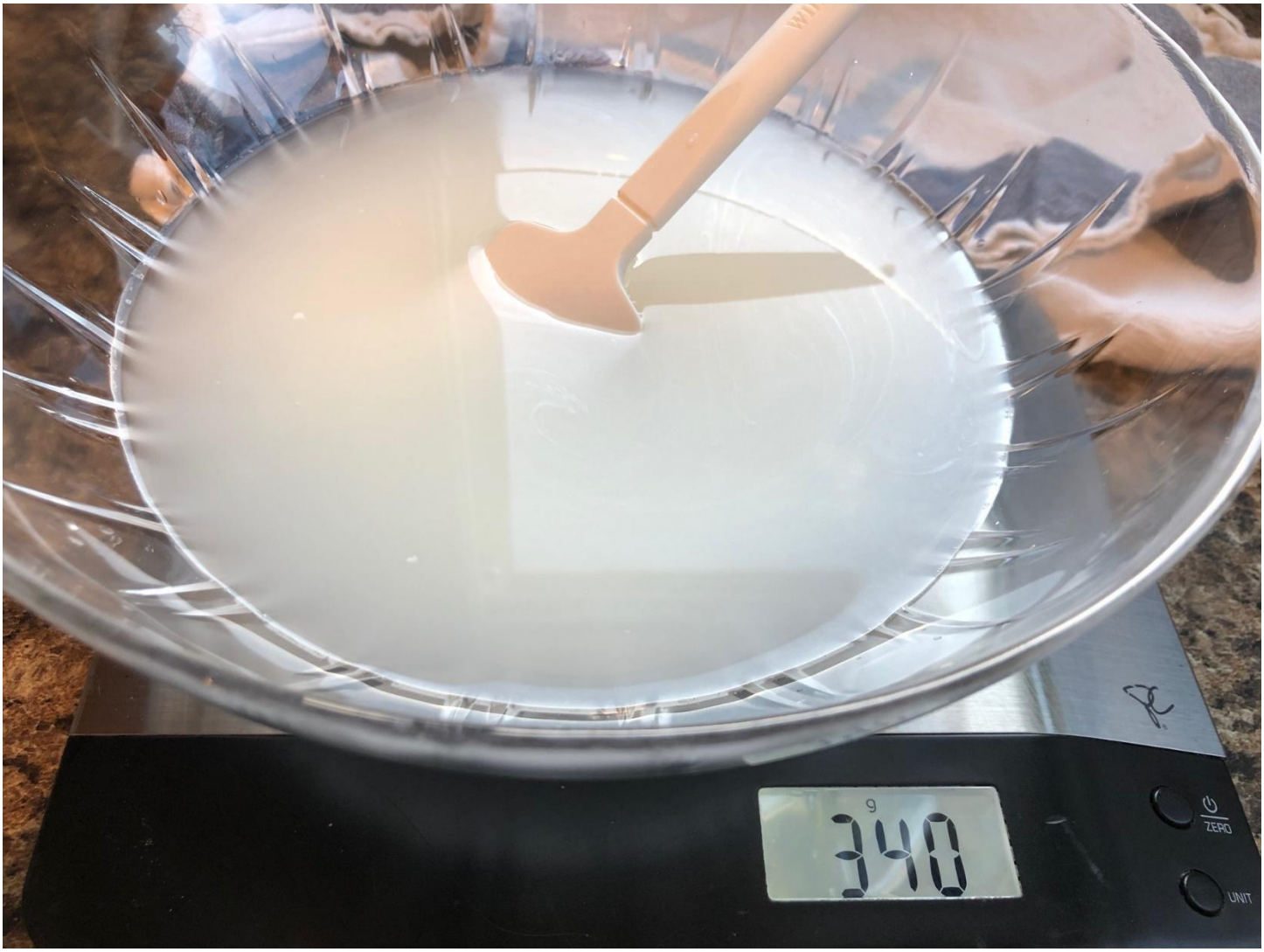
Does this look normal? YES!

When activating your semi-liquid sourdough starter from the fridge, pour the hooch off (if there is lots) and then scrape all the starter into a bowl large enough to accommodate the ingredients for a feeding **including space for the starter to rise.** The gasses created when the yeast and bacteria digest starch are what make your starter double or triple in size.

Depending how long it has been since the last time you fed your starter, it may come right back to vigorous life or it may take two or three feedings to see the bubbling activity of a healthy sourdough starter. Have patience. As you learn how your starter reacts to feeding, and as you become more familiar using it, you will learn what you need to do differently or better in order to predict the success you will have with your starter.

If there is only a small amount of hooch on the surface of the starter then go ahead and scrape it into the bowl with the starter. A small amount won't hurt anything. You can see above I poured all the hooch into the bowl with the starter and I'm going to feed the whole thing.

The weight of sourdough starter in the bowl in the picture above is 170g. You can use more or less. Just remember 1:2:2 (1 part sourdough starter, 2 parts all-purpose flour, 2 parts water)



Semi-liquid sourdough starter with 340g of room temperature water

Does this look normal? YES!

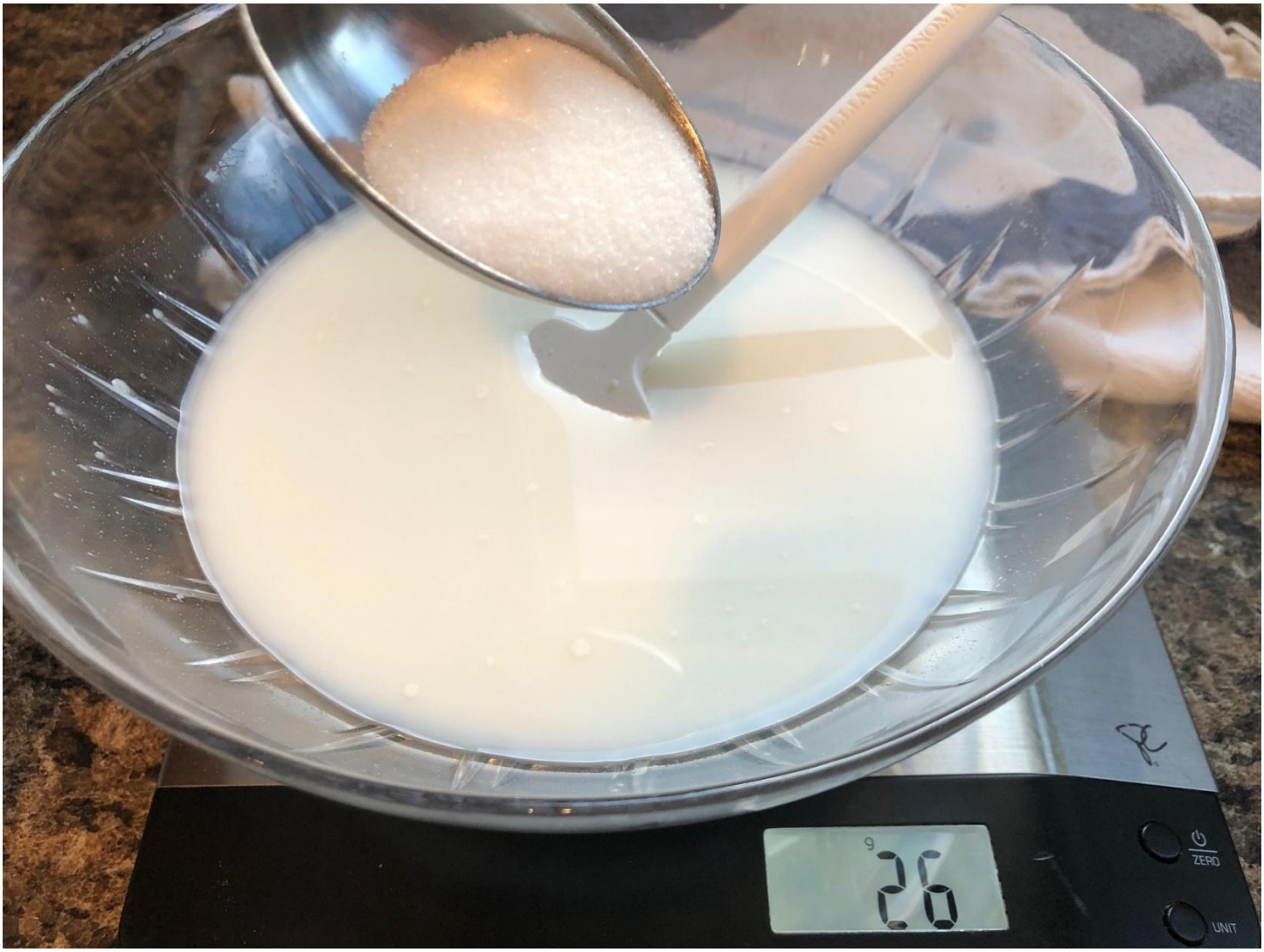
I use room temperature, non-chlorinated water in my sourdough starters. Chlorine is used to kill bacteria, and even though the amount in city drinking water is usually very small it can still wreak havoc on your sourdough.

To easily de-chlorinate your tap water: fill a water jug with cold tap water and leave uncovered on your kitchen counter for 24 hours. The chlorine will evaporate and your sourdough starter will grow much more vigorously because of this small step. I have the luxury of using Yukon Spring water from a natural stream which has a very high mineral content but is extremely clean and non-chlorinated.

When you add the water, mix the sourdough starter to completely disperse it in the water. You will have a milky looking water mix. This is exactly what you want.

When I use my 1898 Sourdough Starter, I sometimes activate a large batch using 340g of water so I can make a few different food products with it. It does take some planning but if you do it once a week you'll find yourself looking forward to all the different things you're going to make with it week after week.

FOR THE SMALLER BATCH OF SOURDOUGH STARTER USE 170G OF WATER or less
Remember 1:2:2 (1 part sourdough starter, 2 parts all-purpose flour, 2 parts water)



Sourdough Starter that has been mixed with 340g of room temperature water
Next to add: 26g of granulated sugar

Does this look normal? YES!

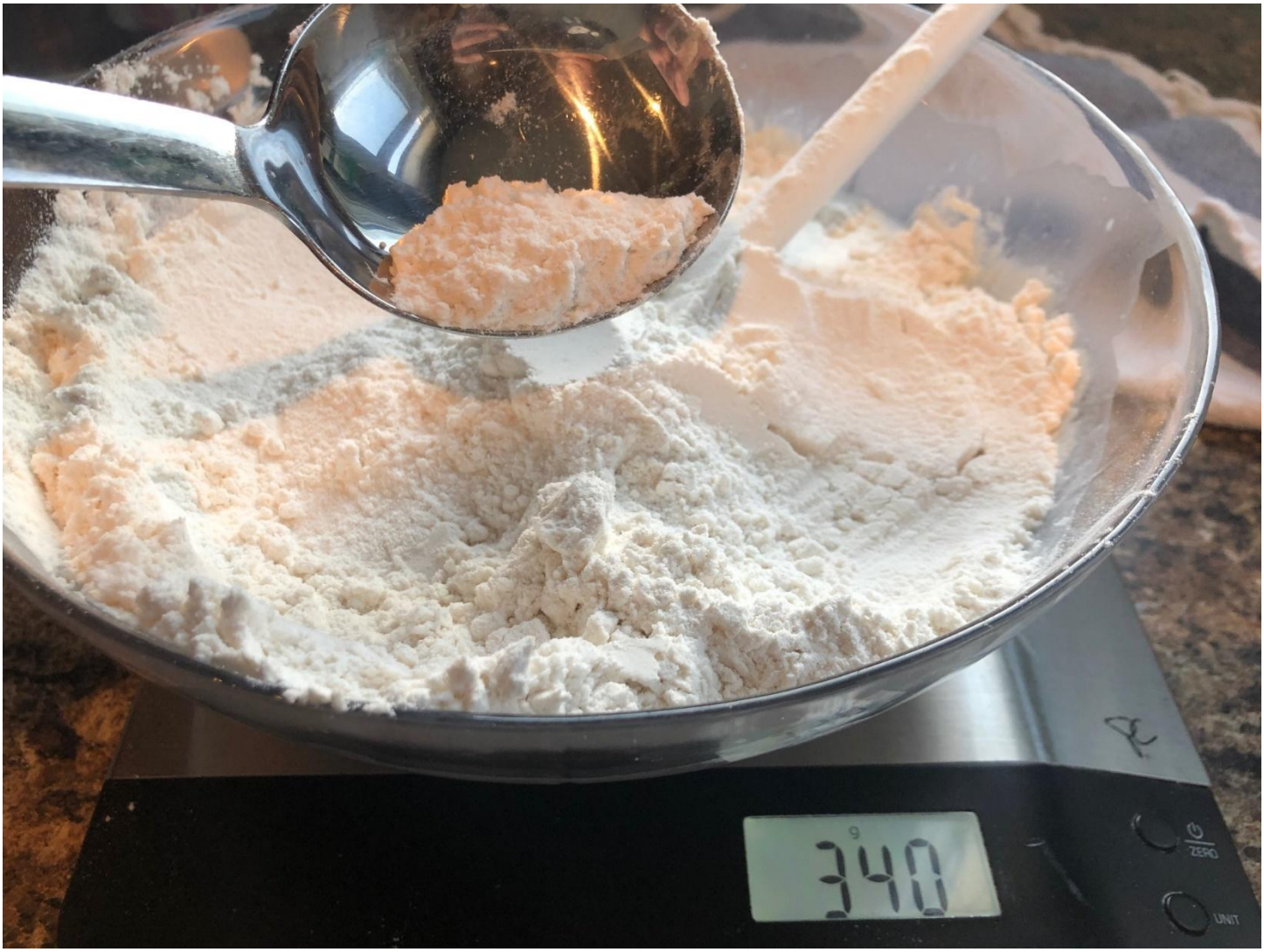
The 1898 sourdough starter has been fed many different forms of simple sugars over the past 125+ years. Simple sugars are carbohydrates that are rapidly and easily used as food by the microbes in the starter. White sugar is one of the most common types of simple sugar. In the early 1900's leftover porridge was also commonly used as a food source for the microbes in sourdough starters. If the food source you are using is something that has minimal ingredients it should be okay; oatmeal porridge that contains nothing other than oatmeal and water is an acceptable food source for sourdough starter. Don't use anything to feed your starter that has added salt because **salt kills microbes.** Milk also has an enzyme that destroys yeast so just stick to the basics; all-purpose flour, water and a bit of sugar and you'll be fine.

This starter has typically been fed white sugar for at least the last 50 years or more and the microbes are quite accustomed to eating it.

NEVER feed your starter with pre-made bread dough or anything that may contain commercial yeast. Your starter may die if it is contaminated with commercial yeast.

FOR THE SMALL BATCH OF SOURDOUGH STARTER ONLY USE 13G OF SUGAR or less

Remember 1:2:2 (1 part sourdough starter, 2 parts all-purpose flour, 2 parts water)



Sourdough Starter that is being fed with 340g of **ALL PURPOSE flour**

Does this look normal? YES!

Mix the all-purpose flour in until a somewhat lumpy batter is formed (see next picture). You can mix it until it is quite smooth if you like; however, it's not necessary as long as you have mixed it as well as you can. A few small lumps will absorb moisture, become hydrated and then be able to be consumed by the microbes.

Do not leave large pockets/lumps of unmixed flour as these may not ever break down which will result in dry lumps of flour in your dough.

FOR THE SMALL BATCH OF SOURDOUGH STARTER ONLY USE 170G OF FLOUR or less

Remember 1:2:2 (1 part sourdough starter, 2 parts all-purpose flour, 2 parts water)

What starter looks like after mixing the all-purpose flour, water, sugar

Does this look normal? YES!

See there are only small lumps of unmixed flour in the batter? This is fine. Those will disappear in a few hours as the flour becomes hydrated by the water.

Mix the flour in as well as you're able, and then clean the batter that is sticking to your mixing spoon back into the sourdough starter **with your clean finger**. You always need to contribute your own bacteria from your hands to your starter. This bacteria exchange is what makes your starter uniquely yours and helps this Yukon grown starter become climatized to your home or bakery wherever you are in the world.

Cover your starter with a clean tea towel and then place plastic wrap over top of the towel

We do this so the starter can "breathe". The bacteria do not actually breath (no lungs) but they do create a large quantity of gasses when they burst (mostly carbon dioxide) which needs somewhere to go. You've likely seen pictures of other baker's sourdough starters blowing the lids off their containers if they are covered too tightly. To avoid this, we cover the starter with a clean tea towel which allows gasses to escape slowly and some fresh air to circulate in.

The plastic wrap over top is necessary in dryer climates so a skin doesn't form on the top of your starter – that skin is created when the surface dries out. Many factors contribute to a sourdough starter drying out: humidity of the room, the type of cloth you're using to cover the bowl, etc. Heavier muslin cloth (tighter weave of cotton fibers) will allow less air to get into the space between the starter and the tea towel. Therefore, decreasing the chance of your starter drying out. I can't buy muslin where I live so the tea towel + plastic wrap works well. The bonus of using a tea towel is that any condensation that comes off the sourdough starter will be collected and absorbed by the tea towel and not drip back into the sourdough starter.

Set the bowl in a warm place in your kitchen. **Optimal temperature for sourdough bacteria to grow is 21-30°C/70-85°F.** The warmer the temperature, the quicker the microbes will produce their gasses (rise). I keep mine away from windows and draft free if possible. The inside of my cold oven is usually a great place to let my starter slowly rise. If you used warmer-than-room-temperature water to feed your starter that factor will also contribute to how quickly it will rise.

What my starter looks like 6-8 hours after it has been fed

IT IS NORMAL FOR STARTERS TO TAKE UP TO 24 HOURS TO LOOK LIKE THIS. BE PATIENT!

What's happening here? Sourdough microbes consume starch and sugar. They gorge themselves on it and that creates carbon dioxide (CO_2). The gas builds up, the outer coating of the microbe bursts, the gas is released, the outer coating of the microbe re-forms and the microbe continues this process indefinitely. The higher starch content in all-purpose flour is easier for the microbes to digest; therefore, the more starch and simple sugars means more carbon dioxide, and that is what those bubbles are made of in your sourdough starter. More bubbles = more rise in your sourdough starter. That's why sourdough starter increases in volume after you feed it.

This 1898 sourdough starter is fed sugar right from the get-go so the microbes don't have to work as hard because the sugar is already there and ready to digest. You might be thinking well great, why doesn't everyone feed their starter sugar then? Because it makes for very lazy bacteria and you will see the effect of this if you ever try to wean this 1898 starter off simple sugars. It can be done; it just takes time and patience.

Starters fed with no sugar and only flours such as bread, rye or whole wheat/whole grain look and behave slightly differently than this 1898 starter. These 'lean' starters are usually thicker like bread dough, and the bubbles can be smaller. Remember, sourdough starters are like human beings and they come in all shapes and sizes; all equally remarkable and offer great flavour to life!

HOW TO SAVE YOUR STARTER AND RETURN IT TO THE FRIDGE

When your starter has risen **and is still bubbly and full of life,** remove a small portion and return it to the container in which you store it in the fridge.

In this picture I have a 1/2 cup measure and this is the amount I normally save. Because I use my starter at least once a week, I do not clean the storage container each time. I do not allow anything to contaminate this container so I don't worry about introducing or harbouring any unwanted bacteria in it.

However, if you only revive your starter once a month I suggest you thoroughly wash your storage container each time you feed your starter. Some bacteria, if it's in a large enough quantity, may harm your sourdough. These unwanted non-sourdough-loving bacteria can overtake and kill the sourdough bacteria you worked so hard to cultivate. If you're ever in doubt, be safe and wash your storage container and let it air dry.

I usually have to "burp" this sourdough storage container at least once or twice after I return it to the fridge. The starter will continue to rise as it slowly goes into a semi-dormant state in the cold fridge.

FULL OF LIFE AND HEADED BACK TO THE FRIDGE

The most important part of preserving active sourdough starter is to get it to a semi-dormant state while it is still alive but with some food still left to eat.

What does that mean? When your starter is on the rise and producing bubbles, that is the indication it is in good health and has plenty of food to eat. The starter will look voluminous and have a slightly rounded top which indicates there are bubbles underneath still pushing the starter up. When the starter has collapsed, you will see sunken areas in your starter or the entire mass will have begun to shrink in the container which indicates the bacteria has run out of food and is dying off.

If that happens, you may not get the rise out of your bread that you are anticipating or it may take a lot longer to rise than it would have if you used it when it was at its optimal condition. If you are putting mostly dead bacteria into your dough then you can't expect it to resurrect itself and raise your bread at land speed record. There will still be some live bacteria left, but the amount will be considerably less than if you used the starter when it was at its optimal bacterial level – on the way up and still creating bubbles.

Solution? Just feed it again! Simple as that. Don't throw out the fallen starter! Use it in items that require less leavening power such as pancakes, waffles, cakes, or scones. Baked or cooked items that don't rely 100% on their success from the sourdough starter are great because it's just the sour taste you're after, not the leavening. Bread relies 100% on the leavening power of the starter and if it's not there, your bread will not be as you expect it.

That's it!

You have your freshly fed sourdough starter that is in great shape and headed to the fridge to slow down in the cold and enter a semi-dormant state.

Remember, you cannot forget about your starter! Set yourself a reminder in your smart phone or write on the calendar to feed your starter in 3-4 weeks.

You likely go into your fridge multiple times a day. Don't shove your starter to the back of the fridge where you will forget about it. Keep it on a shelf where you can keep and eye on it. If you notice the hooch starting to form and it's becoming larger than the actual sourdough starter then it's time to feed your starter.

Hooch = flavour. I don't ever pour the hooch down the drain. I pour it off and save it for when I make the bread dough in a few hours. I add it to the water content of my recipe and it's just flavour.

Read the tutorial on my website: how to dry sourdough starter. This is the BEST insurance you will ever have as I guarantee you will kill your active starter at some point in your life. That's life! We go on vacations and have life events happen where we do forget about this thing when we're not actively baking. Having the dried starter in your cupboard means you can pick right up where you left off before you killed your sourdough starter LOL. If only more things in life were this easy!

If you ever have issues with your sourdough starter and you've read through all the tutorials on my website but still have trouble then send me an email! I am happy to help you trouble shoot your sourdough issues. There are many sourdough groups on Facebook and the members are more than willing to help you.

Good luck in your sourdough journey! Share your starter freely with others and direct them to my website for the free downloadable tutorials.

If you are interested in the science and want a bit more history about this starter, read the article I wrote for Chatelaine Magazine online: https://chatelaine.com/food/yukon-sourdough-memoir/

Cheers.
Chef Cat
Email: chef@wellbread.ca