

The Care and Feeding of Your Yeast

Or [How to Make a Yeast Starter](#)

A yeast starter is simply a small volume of low gravity wort that the yeast are pitched into and allowed to ferment out. This improves the health and vitality of the yeast cells and increases their numbers exponentially.

1. Use [YeastCalc](#) to determine the size of your starter.
2. Smack your Smackpack; If your using a White Labs vial break the seal on the cap and place it in a container, such as a coffee mug, where it can warm up to room temperature. Breaking the seal on the cap allows the CO₂ to escape as the vial warms up, preventing it from erupting when you open it.
3. Using either a saucepan or an Erlenmeyer flask, mix the appropriate amount of water and DME; a ratio of 10 grams DME per 100 milliliters of water will give you a starter with an ideal gravity of about 1.037.
4. Add some yeast nutrient. Wyeast makes a good yeast nutrient, it's about 2 bucks a tube, but you only need a tiny pinch; it will reduce lag time, improve yeast viability, and provide consistent attenuation rates.
5. Add a pinch of anti-foaming agent (Fermcap-S). Trust me on this, it's the best 2 bucks you'll spend, and one small bottle will last forever.
6. If you're using an Erlenmeyer flask; insert the foam stopper now.
7. Bring the whole thing to a boil; you only need to boil for about 1 minute. According to **The Wilderness Medical Society**, water temperatures above 160°F kill all pathogens within 30 minutes; temperatures above 185°F kill them within a few minutes. So in the time it takes for the water to go from 160°F to 212°F (boiling point) all pathogens will be killed, even at high altitude. To be extra safe, let the water boil rapidly for one minute, especially at higher altitudes since water boils at a lower temperature; reducing the boil time to 1 minute also reduces the amount boil-off significantly.
8. Remove from heat and chill to around 70°F.
9. If you are using an Erlenmeyer flask with a foam stopper, it has been kept sealed with the (now sanitized) foam stopper throughout the boiling and cooling processes, and is ready to receive yeast.

10. If you're using the saucepan method, sanitize your fermentation vessel and then transfer your wort into it. This is where your yeast is at its highest risk for contamination. Be diligent in your sanitation methods.
11. Sanitize the outside of your smackpack or vial, give it a good shake, open it and pitch your yeast.
12. If you're using an Erlenmeyer flask, put the foam stopper back in the neck and go on about your business.
13. If you're using a gallon jug or similar container; loosely cover the vessel with some sanitized aluminum foil, this will promote air exchange and keep out bacteria. Yep, you read that correctly, loosely wrapped foil will keep out the bacteria; one of the biggest misconceptions regarding microbiology is that bacteria can "crawl" into a container and infect it. Airborne bacteria do not have wings or legs. They get transported about by dust particles in the air.
14. At this point there are a couple of ways that you can increase the cell count of your starter.
 - 1) **Stir plate:** A stir plate will produce the largest increase to cell counts.
 - 2) **Intermittent shaking:** This involves shaking the wort vigorously for a few seconds every hour or so, and should increase your cell count by a magnitude of around 1.5x
15. Let your wort ferment at around 70° to 75°F for at least 24 hours.
16. Put the vessel in the refrigerator and let it chill for at least 24 hours. This will cause the yeast to drop out of suspension, and settle at the bottom of the fermentation vessel.
17. Carefully decant the spent wort from the yeast, leaving just enough wort to produce a thin slurry.
18. If one step was all you needed to reach your optimum pitching rate; when you're ready to pitch, let the slurry warm up to room temperature and pitch it into your wort.

If you need to step your starter up. It's time to make your second starter; it's probably no surprise that the second starter is made in exactly the same way as the first starter. Once the second starter has been chilled to room temperature, transfer the wort from it onto the yeast slurry in the first starter (once again using proper sanitation methods). Let this second volume of wort ferment as before, chill, decant, and pitch.