

## Homemade Soy Sauce

by Brad Moyer

Those who know me know I am a huge fan of most ethnic types of food, with Indian and Japanese being some of my all time favorites. I love their old world processes and methods in cooking but also while utilizing fermentation to create complex flavored sauces, foods, and drinks. I have been on a personal mission to create my own soy sauce for over a year since I have only found a few really great commercial examples on the market. I tried to research as much as possible about the complex process, but the internet is pretty void in good detailed information, so I reached out to a few American craft soy sauce makers who use spent bourbon barrels for their fermentation vessels. They gave me some great guidance, and with some searching and sourcing some special ingredients I was ready to start this LONG process.

### **Raw Materials Needed (see end of article for example quantities):**

Organic Raw Soybeans

Sea Salt

Filtered H2O

Sake Koji Mold (Sake Homebrewing Kit @ Brewing Supply Store)

Raw Red Wheat (Homebrewing Supply Store)

Roasted Barley (Homebrewing Supply Store)

### **Procedural Materials Needed:**

Food Processor

Large Pot (5 Gallons)

Auto Siphon

Baking Sheet or Cooling Rack

5 Gallon Wide Mouth Carboy or Food Grade Bucket with Airlock

Large Straining Bag

Salinity Hydrometer

Bottles for Packaging



### **Prepare the Beans:**

On your stove, or preferably an outdoor propane turkey burner, bring 4 gallons or enough water that covers all the beans to a boil, and let simmer for 2 to 3 hours until the beans are soft and able to be smashed between your fingers easily. Once the beans are soft, you will want to prepare them to be

fermented by the sake mold. As much as your food processor will let you, puree all the beans along with all of the red wheat, roasted barley, and sake kit dried mold to create a consistency and shape similar to raw hamburger meat patties. These are your “mold cake” inoculations that turn all the starch in the beans to sugar.



### **Mold Cakes:**

Now that you have made quite a few soybean, barley, and mold cakes, you need to keep them in a damp dark environment to help encourage mold growth. If you want to get fancy and rig up a temperature and humidity controlled environment you certainly can in an old mini fridge or picnic cooler. But since this was my first go at this process I simply laid damp paper towels over the soybean cakes that were resting on a baking cooling rack, and placed them on top of my fridge where it stayed fairly warm and consistent for two weeks. (To keep them moist I just sprayed the paper towels twice a day with water.) After two weeks there should be a significant amount of mold growth on each patty, and they should have dried out to almost a rock hard consistency. They are now ready to begin the second part of their lengthy fermentation.

### **Making your Brine:**

We all know soy sauce is very salty, and this is part of the process where it gets its signature salinity from. You will need to get out your large pot and burner to heat up the water needed to dissolve all the salt in this heavy brine. I highly recommend you invest in a good quality salinity hydrometer to correctly measure the brine. I ordered mine though a awesome local company who makes precision hydrometers and other great lab equipment. (Check them out at [www.bradyinstruments.com](http://www.bradyinstruments.com). You are aiming for a salinity of 22-25% by solution. Once you have mixed up all the



salt water, let it cool to room temperature. At this point you will take all your dried, moldy soy cakes, break them into chunks, and add them to your salt brine solution that you placed in your carboy.

### **Now We Wait:**

This is the longest part of the process: waiting. I let those mold cakes sit in the brine almost 10 months before I even decided to take a color and taste evaluation. Mine was not as dark as I would have liked it at first, so to adjust the color you can get more of the roasted barley you used in the beginning, grind it up, and make a “tea” with some water, then remove the solids and add the liquid to your main batch to darken as necessary. If you notice a “skin” or “bubbles” that grow on the surface of your soy sauce it is a byproduct of lactic fermentation and completely safe. This is a natural pellicle forming to protect itself from oxidation.



### **Filtering & Pasteurizing**

By this point of the process most of the soybean cakes have liquified and fallen to the bottom of your wide mouth carboy and look more like a muddy silt. Now you will want to run all your soy sauce through the fine mesh screen or bag, depending on

what you purchased, to remove all of the larger solids. Do not throw those solids away! They can be pureed into a smoother consistency, and now you have Miso paste! Yes, the same stuff you use to make the salty broth soup commonly found in Asian cooking.

Once you have all of your clearest, pure, good looking, brown soy sauce, it is now time to pasteurize it to kill off all the living microbes and get it into bottles, ready to use. Again drag out your large pot and burner, and simmer your soy sauce for 10



minutes to kill any wild bacteria and stop fermentation. Now you are free to package and bottle your sauce into containers of your choice.

### **Specifics of My Recipe:**

For my batch i used these specific amounts:

2,275g of Soybeans (5lbs)

4 gallons of Water for initial soaking beans.

2 packs of Sake Koji Mold (10 grams each)

Raw Red Wheat: 1lb

Roasted Barley: 1lb (more needed if you want a darker sauce)

2,500g Sea Salt (5.5lbs) or (475g for every 500g Beans)

4.25 Gallons of Water for Brine or as needed for 22-25% Salinity  
(3000 ml for every 500g Beans)

Yield: just under 4 gallons of finished soy sauce. This amount will vary depending on how much you filter off during the removal of heavy sediment, etc. Once the sauce has been boiled and pasteurized you can store room temp indefinitely.

This article only covers the loose process of basic soy sauce making. For any other questions or more detailed answers please feel free to reach out to me. Best of luck and ferment on,

Brad