



BAY BRIDGE WIT

BY PATRICK & ANDREA COLCHIN

FERMENTABLES

This recipe recommends using a decoction mash to maximize starch conversion.

Protein rest @122F for 30 min

- 2 lb 8 oz US Pilsner
- 12 oz Flaked Oats
- 1 lb 8 oz Flaked Wheat
- 8 oz White Wheat Malt
- 8 oz Honey Malt
- 4 oz Carapils

Saccharification @152F for 45 min

- 6 lb 8 oz US Pale 2 Row

HOP ADDITIONS

This recipe recommends a 90 min boil due to the presence of Pilsner malt. Begin adding hops at 60 min.

- 60: 1.25 oz Tettnanger (4.5% AA¹)
- 10 min: 1 oz Cascade (8% AA)

YEAST

- WLP 400: Belgian Wit Ale Yeast
Ideal fermentation temperature: 70F

ADDITIVES

- 1 oz whole juniper berries @ 10 minutes
- 0.75 oz ground black pepper @ 10 minutes
- 3 lemons' worth of zested lemon peel
- Clarifier: 1 tsp Irish Moss **or** 1 tablet Whirlfloc
- Yeast Nutrient: 1/2 tsp White Labs (1/2 tsp/gal Biotin)

Target Statistics ²		Your Results
Orig. Gravity:	1.057	
Final Gravity:	1.013	
Est. % ABV:	6%	
Efficiency³:	72%	
IBUs:	26	

BJCP Style Guidelines: Witbier ^(24A)

Original Gravity: 1.044 – 1.052 SG

Final Gravity: 1.008 – 1.012 SG

Bitterness: 8 – 20 IBUs

ABV: 4.5 – 5.5%

Overall Impression: A refreshing, elegant, tasty, moderate-strength, wheat-based ale. Moderate malty sweetness (often with light notes of honey and/or vanilla) with light, grainy spicy wheat aromatics. Moderate coriander perfume and zesty, citrusy-orangey fruitiness in the background.



Notes:

Decoction Brewing:

Starch conversion relies several different enzymes which have different ideal temperature ranges. The more common infusion mash technique typically stays at one temperature, relying on the combined effort of these enzymes (at less than ideal temperatures for all to work optimally) to break down complex carbohydrates into fermentable sugars. By contrast, decoction brewing starts low, then brings the temperature up by removing portions of the mash, boiling it, and returning it to the mash tun. By spending time at each temperature, enzymes can work individually at their optimum temperature and, if successful, increase the overall efficiency of the starch conversion.

¹**AA (ALPHA ACID)**: This is the measure of hops' potential bitterness. Be aware when substituting hops with a higher AA% for your "60 min" hop addition, you will increase the bitterness of your beer. "Flame Out" and "Dry Hop" additions will add hoppy aroma but will contribute little bitterness to your beer. Substituting different hops for these later additions will alter the flavor of your beer, but not the level of bitterness.

²**TARGET STATISTICS**: These targets were calculated using BeerSmith™ software and are based on the brewing method outlined on the back of this page.

³**EFFICIENCY**: This is the percent of sugar you expect to extract compared to the total amount of sugar available in your grain. Home brewers' efficiency can range between 65% to 75% depending on equipment and methods used. We use 70% here as an average, but your results may vary.

QUICK BREWING INSTRUCTIONS

MASH	<ol style="list-style-type: none"> 1.) Measure out your mash water for the protein rest (see description to the right) and heat up to 2-5F more than your strike temperature to compensate for temperature loss while transferring to the mash tun. To minimize temperature loss, try warming up your mash tun by filling it with hot water and leaving it sealed for a few minutes before transferring. 2.) Slowly add your grain, constantly stirring to maximize exposure. 3.) Check that your temperature is on target and seal your mash tun. Once completely stirred in, your mash should have roughly the consistency of watery oatmeal. <p><i>Decoction:</i> For each of the steps to the right (1) remove the portion of wort indicated, (2) heat it to a boil while constantly stirring to avoid scorching, then (3) return it to the mash tun to achieve the target temperature. Hold the target temperature for the allotted time for each rest to maximize mash efficiency.</p>	<p>MASH TARGETS</p> <p>Protein Rest <i>Volume:</i> 6.25 gal <i>Strike Temp:</i> 127F <i>Mash Temp:</i> 122F <i>Duration:</i> 30 min</p> <p>Saccharification Rest <i>Volume:</i> 2.57 gal <i>Target Temp:</i> 152F <i>Duration:</i> 45 min</p> <p>Mash Out <i>Target Temp:</i> 168F <i>Duration:</i> 10 min</p>
LAUTER & SPARGE	<ol style="list-style-type: none"> 1.) Heat up your sparge water to 2-5F higher than desired sparge temperature. Then, transfer the water to the hot liquor tank (HLT) and carefully place your HLT in position above the mash tun. 2.) Position your kettle below the mash tun to prepare for the lauter. 3.) Recirculate your mash. Partially open the valve on your mash tun so that a stream of sweet wort comes out. Use pitchers or large measuring cups to catch this stream; you will notice small particles floating in the wort for the first couple minutes. As each pitcher fills, replace it with the empty and gently pour the full pitcher back into the mash tun. Continue doing this until your wort is free of particulates. 4.) Begin lautering into the kettle. Set up sparge arm above grain bed and open valve on HLT partway to begin sparge. Adjust flow rates out of your mash tun and HLT to maintain 1 inch or so of water above the grain bed. Continue until you reach your target boil volume. 	<p>Sparge Targets: <i>Volume:</i> 2 gal <i>Temp:</i> 168F</p> <hr/> <p>Boil Targets: <i>Volume:</i> 6.5 gal <i>Duration:</i> 90 min</p>
BOIL	<ol style="list-style-type: none"> 1.) Add your first wort hops as you bring to a boil. Watch for boil overs! Once you achieve a stable, rolling boil, slowly add your first hop addition and start your timer for 120 minutes (counting down). Add all subsequent boil additions at their appropriate times. 2.) Sanitize any equipment that will come into contact with your wort after the boil: airlock, stopper, wine thief, aeration stone, etc. 3.) Add your wort chiller to the pot near the end of the boil. You want it to spend a couple minutes at boiling temperatures to sanitize it. Be sure to connect the hoses before putting it into your pot. 4.) Once you're finished boiling, start your cooldown by turning on the hose connected to your wort chiller to a slow rate of flow. The water coming out should be steaming hot, so be sure the outflow hose is directed somewhere safe. <ol style="list-style-type: none"> a. Remember that you can increase the effectiveness of the wort chiller by agitating the wort in the pot or connecting another coil and submerging it in ice water to act as a pre-chiller. 5.) Use a sanitized metal spoon to rapidly stir your cooled wort to create a whirlpool. The hop sediment and other break material will be sucked to the center of the pot, and if you allow it to settle for 10-15 min, it will sink to the bottom. This allows you to rack off the clear wort, leaving the trub behind. 6.) Once cooled to fermentation temperature, whirlpooled, and settled out, rack into sanitized fermentor. 	<p>BOIL ADDITIONS</p> <p>60 min <ul style="list-style-type: none"> • 1.25 oz Tettnanger </p> <hr/> <p>40 MIN</p> <hr/> <p>20 MIN <i>Watching wort boil is dull work. Have a homebrew</i></p> <hr/> <p>10 MIN <ul style="list-style-type: none"> • 1 oz Cascade • Clarifier & Nutrient </p> <hr/> <p>0 MIN (Flame Out)</p>
PITCH	<ol style="list-style-type: none"> 1.) Take a sample of your wort and use your hydrometer to measure your original gravity. 2.) Oxygenate your wort by shaking the carboy for 5 min or spraying pure O₂ for 30 seconds. 3.) Sanitize the exterior of the yeast package and use sanitized scissors to open. 4.) Add your yeast to your fermentor. Fill your airlock with sanitizer and fix in place with the stopper. 	<p>PITCH</p> <ul style="list-style-type: none"> • WLP400: Belgian Wit Yeast <p><i>Ferment temp:</i> 70F</p>

THESE MEASUREMENTS CAN VARY WITH DIFFERENT EQUIPMENT, BREWING PROCEDURES, AND BOIL TEMPERATURES. FOR MORE IN-DEPTH BREWING INSTRUCTIONS, PLEASE SEE OUR "ALL GRAIN BREWING INSTRUCTIONS."