



Bird Park Bohemian-Style Pilsner

Fermentables

- 8.75 lb German Pilsner
- 5.25 oz Carafoam
- 2.75 oz Melanoidin

Hop Additions

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

- 60 min: 0.5 oz (14g) Warrior (15.8% AA¹)
- Whirlpool: (add after cooling to 170F)
 - 1.72 oz (49g) Czech Saaz (3.8% AA)
 - 1.72 oz (49g) German Perle (8.25% AA)

Yeast

- Fermentis: 20g Saflager 34-70 Yeast
Ideal fermentation temperature: 52-58F

Additives

- Clarifier: 1 tsp Irish Moss **or** 1 tablet Whirlfloc
- Yeast Nutrient: 1/2 tsp White Labs (1/2 tsp/gal Biotin)

Lager Fermentation Schedule:

Lagers benefit from longer fermentation at colder temperatures. The following schedule starts with very low temperatures then warming by steps to increase yeast activity until the final diacetyl rest.

- 48F for 50% of fermentation
- 53F for 25% of fermentation
- 62F until fermentation is complete

Target Statistics²

Target Statistics ²		Your Results
Orig. Gravity:	1.051	
Final Gravity:	1.015	
Est. % ABV:	4.7%	
Efficiency³:	75%	
IBUs:	40	

Your Results

BJCP Style Guidelines: German Pils (5D)

Original Gravity: 1.044 – 1.050 SG

Final Gravity: 1.008 – 1.013 SG

Bitterness: 22 – 40 IBUs

ABV: 4.2– 5.8%

Overall Impression: A light-bodied, highly-attenuated, gold-colored, bottom-fermented, German beer showing excellent head retention and an elegant, floral hop aroma. Crisp, clean, and refreshing, a German Pils showcases the finest quality German malt and hops.



Forced Diacetyl Test

You can test for the presence of diacetyl (buttery aroma) in your beer by heating up a sample, allowing it to cool again and then comparing to a fresh sample of the beer:

- Take a sample and heat it to 170F for 10 minutes
- Allow sample to cool to the current temperature of the finished beer
- Take a second, fresh sample and compare the two.
- Allow beer to continue conditioning as long as diacetyl is detectable.

¹AA (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.

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

³Efficiency: 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

	<ol style="list-style-type: none"> 1.) Measure out your water. If you're using city water, it's best to run it slowly (about 1 gal/min) through a carbon filter while you're measuring. 2.) Heat water 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. 3.) Slowly add your grain, constantly stirring to maximize exposure. 4.) 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>Temperature corrections:</i> always aim a couple of degrees higher than your target (but always lower than 168F). It's much easier to bring your temperature down a few degrees by stirring in small handfuls of ice (2 cubes is approximately -1F) than having to bring it up by adding boiling hot water a quart at a time.</p>	<p>Mash Targets:</p> <p>Volume: 2.9 gal Strike Temp: 164F Mash Temp: 154F Mash pH: 5.35 Duration: 60min</p> <p><i>Don't forget to start heating your sparge water!</i></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 moderate stream of sweet wort comes out. Use 2 pitchers or large measuring cups to catch this stream; you will notice a lot of 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 you 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 5 gallons at a specific gravity of 1.051. 	<p>Sparge Targets:</p> <p>Volume: 3.5 gal Temp: 170F</p> <p>-----</p> <p>Boil Targets:</p> <p>Volume: 5 gal Duration: 90 min</p>
	<ol style="list-style-type: none"> 1.) Bring your wort to a boil. Watch for boil overs! Once you achieve a stable, rolling boil, start your timer for 90 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 90 minutes have elapsed, turn off the heat to your kettle and top your kettle back up to 5 gallons with cold, distilled water (should be around 1 gal). This should cool your wort to the desired 170F allowing you to add your whirlpool additions and bring you back to your target SG. 5.) Continue 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. 6.) 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. 7.) Once cooled to fermentation temperature (48F), rack into a sanitized fermentor. 	<p>Boil Additions</p> <p>60 MIN</p> <ul style="list-style-type: none"> • 0.5 oz Warrior <p>-----</p> <p>45 MIN</p> <p><i>Watching wort boil is dull work. Have a homebrew!</i></p> <p>-----</p> <p>30 MIN</p> <p>-----</p> <p>15 MIN</p> <ul style="list-style-type: none"> • Clarifier & Nutrient <p>-----</p> <p>Whirlpool</p> <p><i>(cool to 170F before adding)</i></p> <ul style="list-style-type: none"> • 1.72 oz Czech Saaz • 1.72 oz German Perle
	<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"> • 20g Saflager 34-70 <p><i>Ferment temp: 52-58F</i></p>
	<ol style="list-style-type: none"> 1.) Begin fermentation at 48F. 2.) Maintain this temperature until fermentation is about 50% complete. Then allow temperature to rise to 53F. 3.) When 25% attenuation remains, raise the temperature to 62F until fermentation is complete. 4.) Begin testing for diacetyl. When none is detectable rack to a keg or to a bottling bucket. 5.) Remember that storing (lagering) the beer for several more weeks allows flavors to become smoother. 	

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."

Mash

BOIL

PITCH

Fermentation

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