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**Hours:**  
Mon-Thurs 10:00am - 10:00pm  
Fri - Sun 9:00am - 10:00pm

**Cost** \$ \$ \$ \$ \$  
**Difficulty**

## — HOMEWORK #5 HOPPY BELGIAN PALE ALE —

### FERMENTABLES

- 6 lb Pilsen Dried Malt Extract (DME)

### STEEPING GRAINS

- 0.75 lb Crystal 10L
- 0.5 lb Flaked oats (*do not mill*)
- 0.25 lb Acidulated malt

### HOP ADDITIONS

- 60 min: 1 oz Hallertaur Blanc (6.6% AA<sup>1</sup>)
- Flame Out: 1 oz Hallertaur Blanc (6.6% AA)
- Dry Hop: 2 oz Hallertaur Blanc (6.6% AA)

### YEAST

- WLP 575: Belgian-Style Ale Yeast Blend  
*Ideal fermentation temperature: 68-72F*

### ADDITIVES (Optional)

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

Target Statistics <sup>2</sup>		Your Results
<b>Orig. Gravity:</b>	1.060	
<b>Final Gravity:</b>	1.014	
<b>Est. % ABV:</b>	6.1%	
<b>IBUs:</b>	21	

### *BJCP Style Guidelines: Belgian Pale Ale* (24B)

Original Gravity: 1.048 – 1.054 SG

Final Gravity: 1.010 – 1.014 SG

Bitterness: 20 – 30 IBUs

ABV: 4.8 – 5.5%

Overall Impression: A moderately malty, somewhat fruity, easy-drinking Belgian ale that is somewhat less aggressive in flavor profile than many other Belgian beers. The malt character tends to be a bit biscuit with light toasty, honey-like, or caramel-like components.



### Notes:

<sup>1</sup>**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.

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

# QUICK BREWING INSTRUCTIONS

<b>PREP</b>	<p>Measure out all ingredients:</p> <ul style="list-style-type: none"> <li>• 3 gallons of water in your boil kettle.</li> <li>• 3 gallons of sanitized, pre-chilled water in the fridge</li> <li>• All hop additions</li> </ul> <p>Put pre-milled grain into steeping bag and tie the top of the bag in a knot</p>	
<b>STEEP</b>	<ol style="list-style-type: none"> <li>1.) Bring the water in your pot to 160F, then turn off your heat and add your steeping bag of grain. This will bring the temp down to 155F or so. Stir thoroughly to maximize exposure.</li> <li>2.) Cover with lid to maintain 155F for 30 minutes. Most pots retain heat pretty well with the heat off and the lid on.</li> <li>3.) After 30 min, remove the grain from the pot and let it drip dry over the pot. Do not squeeze or wring out the bag.</li> </ol>	
<b>BOIL</b>	<ol style="list-style-type: none"> <li>1.) Turn heat back on.</li> <li>2.) Once you achieve a stable, rolling boil, slowly add your 60 min hop addition (watch for boil-over) and start your timer for 60 min. While boiling, sanitize any equipment that will come into contact with your wort after the boil:             <ol style="list-style-type: none"> <li>a. Measure 5 gallons of water and pour 1 oz (two capfuls) of I-Star sanitizer into your fermentor (mark the 5 gal level on the outside of your carboy) and allow to sit for 1 min.</li> <li>b. Use auto-siphon to rack the sanitizer into a spare bucket or tub and use to sanitize rest of equipment:                 <ol style="list-style-type: none"> <li>i. Funnel, airlock, stopper, and wine thief</li> </ol> </li> </ol> </li> <li>3.) With 15 min left until the end of your boil, pause your timer and turn the flame off to halt the boil, then add your malt extract. Be sure to pour slowly and stir constantly to ensure all extract (DME) dissolves completely. Once fully dissolved, turn the heat back on. Watch for boil-overs again, as they become more likely the more extract you add.             <ul style="list-style-type: none"> <li>• Have countermeasures for boil-over ready:                 <ol style="list-style-type: none"> <li>i. Be prepared to turn the heat down or off.</li> <li>ii. Have a spray bottle of water ready to help keep foam at bay.</li> </ol> </li> </ul> </li> <li>4.) Once you're back up to a stable boil, restart your timer and start prepping your ice bath.</li> <li>5.) At 0 min turn off the heat; add "flame out" hop addition.</li> </ol>	<p><b>60 MIN</b></p> <ul style="list-style-type: none"> <li>• 1 oz Hallertaur Blanc</li> </ul> <hr/> <p><b>45 MIN</b></p> <p><i>Watching wort boil is dull work. Have a homebrew!</i></p> <hr/> <p><b>30 MIN</b></p> <hr/> <p><b>15 MIN</b></p> <ul style="list-style-type: none"> <li>• 6 lb Pilsen DME</li> <li>• Additives</li> </ul> <hr/> <p><b>0 MIN</b> <b>(Flame Out)</b></p> <ul style="list-style-type: none"> <li>• 1 oz Hallertaur Blanc</li> </ul>
<b>COOLDOWN</b>	<ol style="list-style-type: none"> <li>1.) Transfer the hot kettle from the burner to a sink or tub filled with cool water.</li> <li>2.) Swirl the pot to better cool the wort inside.</li> <li>3.) Using ice is more effective if you wait to add it until the wort has cooled significantly. As the water becomes hot, refill your tub with cool water until the wort gets down to around 150F. Getting from 150F to 90F with just cool water takes a while; this is where you want to add the ice.</li> <li>4.) Once your wort has cooled to 90F or less, vigorously pour it into your sanitized fermentor. Top off your fermentor to 5 gal with the prepped 3 gallons cold water. If the water you add isn't completely cold, wait until your wort is cooled down to 80F or less before pouring it into your carboy.</li> <li>5.) Shake the carboy for a few minutes to oxygenate and evenly mix the water with your wort. If you're planning to take a hydrometer reading, do so here before you pitch the yeast.</li> </ol>	<p><i>From here on, everything that comes into contact with the wort <b>must be sanitized.</b></i></p>
<b>PITCH</b>	<ol style="list-style-type: none"> <li>1.) Sanitize the exterior of the yeast package and use sanitized scissors to open.</li> <li>2.) Add your yeast to your fermentor.</li> <li>3.) Fill your airlock to the recommended line with sanitizing solution and fix it in place with your rubber stopper.</li> <li>4.) Store in a cool dark place for the duration of the fermentation. You should witness bubbling activity in your airlock within 24 hours.</li> </ol>	<p><b>PITCH</b></p> <ul style="list-style-type: none"> <li>• WLP 575: California Ale Yeast</li> </ul> <p><i>Ferment at 68-72F</i></p>
<b>DRY HOP</b>	<ol style="list-style-type: none"> <li>1.) To add extra hop aroma to this recipe with a dry hop addition, wait until the fermentation is almost or entirely complete:             <ol style="list-style-type: none"> <li>a. Bubbling activity in the airlock should have slowed or stopped entirely.</li> <li>b. After 10 days it's safe to assume your fermentation has ceased.</li> </ol> </li> <li>2.) Remove airlock, add your dry hop addition to the fermentor (no need to sanitize the hops), and reinstall airlock.</li> <li>3.) Wait 6 days before packaging.</li> </ol>	<p><b>DRY HOP</b></p> <ul style="list-style-type: none"> <li>• 1 oz Hallertaur Blanc</li> </ul>

FOR MORE ON SIPHONING AND BOTTLING AS WELL AS MORE IN-DEPTH BREWING INSTRUCTIONS, PLEASE SEE OUR "BEGINNER'S BREWING INSTRUCTIONS."