

Original Recipe by:
Anthony Incrocci

HOME BREW SUMMER

HOME BREW MART
INGRAINED SINCE 1992



HELLES LAGER

BREW DAY

Stage/Time	Type	Qty	Name	%AA	%/IBU
Mash Target pH: 5.15	Grain	10.75 lb	German Pilsner	-	91.7%
		0.5 lb	Carahell	-	5.6%
		0.25 lb	Acidulated Malt	-	2.8%
Boil/60min	Hop	0.5 oz	Perle	8%	14.1
Boil/10min	Hop	0.5 oz	Hallertaur Mittelfruh	4.5%	2.9
	Fining	1 tablet	Whirlfloc	-	-
	Nutrient	1/2 tsp	Yeast nutrient	-	-



FERMENTATION AND BEYOND

Stage	Type	Qty	Name	Notes
Pitch	Yeast	1 pkg	WLP830 German Lager	50-55°F
		1 pkg	WLP860 Munich Lager	
		1 pkg	WLP835 German X	

Munich Helles (4A)

Original Gravity: 1.044 – 1.048 SG

Final Gravity: 1.006 – 1.012 SG

Bitterness: 16 – 22 IBUs

ABV: 4.7 – 5.4%

SRM: 3 - 5

Overall Impression: A clean, malty, gold-colored German lager with a smooth grainy-sweet malty flavor and a soft, dry finish. Subtle spicy, floral, or herbal hops and restrained bitterness help keep the balance malty but not sweet, which helps make this beer a refreshing, everyday drink.

TARGET STATS

Batch Size	5 gal
OG	1.049
FG	1.012
~%ABV	4.9
%Efficiency	72
IBU	17
SRM	3.6

BREW NOTES

Mash Step 1 (30 min)	145°F
Mash Step 2 (10 min)	154°F
Mash Step 3 (15 min)	161°F
Mash Duration	60 min
Boil Volume	6.5 gal
Boil Duration	60 min

Notes

pH can play an important role in the final flavor in any beer. For this recipe we highly recommend measuring the pH at mash-in. You can gently adjust the pH down by adding small doses (0.5 ml) of 88% Lactic Acid.

Pitch yeast at 50°F and maintain that temperature until gravity reaches about 1.020, then raise temp to 55°F for diacetyl rest.

QUICK BREWING INSTRUCTIONS

MASH	Mashing is the process of soaking milled, malted barley in hot water to convert starch into fermentable sugars. The success of this process is measured as percent efficiency and is reliant on maintaining the appropriate temperature and water to grain ratio of 1.25 quarts per pound of grain. 1. Measure out your water for mash and heat to your strike temperature. 2. Slowly add your grain, constantly stirring to break up dough balls and consistent mixture. 3. Check that your temperature is on target and seal your mash tun. 4. If your equipment has a recirculation pump, now is the time to run it. 5. While you wait for the mash to finish, begin heating your water for the sparge.	<table><tr><th colspan="2">Mash Targets</th></tr><tr><td colspan="2">RO Water 65 Cl 55 Sulfate</td></tr><tr><td>Mash Water</td><td>3.6 gal</td></tr><tr><td>Strike Temp</td><td>152°F</td></tr><tr><td>Step 1</td><td>145°F 30 min</td></tr><tr><td>Step 2</td><td>154°F 10 min</td></tr><tr><td>Step 3</td><td>161°F 15 min</td></tr></table>	Mash Targets		RO Water 65 Cl 55 Sulfate		Mash Water	3.6 gal	Strike Temp	152°F	Step 1	145°F 30 min	Step 2	154°F 10 min	Step 3	161°F 15 min
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LAUTER & SPARGE	Once the starch conversion is complete, the liquid (“sweet wort”) needs to be separated (“lautered”) from the grain which then needs to be rinsed (“sparged”) to extract as much sugar as possible. 1. Measure out your sparge water and heat to 168°F. 2. Position your kettle below your mash tun and your sparge tank above. 3. If your brewing equipment did not include a recirculation pump for the mash, you'll need to do this manually. a. Partially open the valve on the mash tun and use 2 pitchers or large measuring cups to catch the stream that begins to flow; you'll notice a lot of small particles floating in the wort. As each pitcher fills, replace it with an empty one and pour the full pitcher gently back into the mash tun. Continue doing this until your wort is relatively free of particles. 4. With sparge tank and kettle in place, mash complete, and grain bed set, it's time to start lautering into the kettle. As wort drains from the mash, sparge water should replace it at the same rate from above, ideally maintaining an inch or so of water above the surface of the grain. Adjust your flow rates at the sparge tank or mash tun accordingly. 5. Once the target boil volume is reached in the kettle you can turn off valves and stop the flow into the kettle. Start heating up to a boil.	<table><tr><th colspan="2">Sparge Targets</th></tr><tr><td>Volume</td><td>4.5 gal</td></tr><tr><td>Temp</td><td>168°F</td></tr><tr><th colspan="2">Boil Targets</th></tr><tr><td>Volume</td><td>6.5 gal</td></tr><tr><td>Duration</td><td>60 min</td></tr><tr><td>Pre-Boil SG</td><td>1.054</td></tr></table>	Sparge Targets		Volume	4.5 gal	Temp	168°F	Boil Targets		Volume	6.5 gal	Duration	60 min	Pre-Boil SG	1.054
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BOIL & COOLDOWN	The purpose of your boil is 1) to sanitize, 2) to extract bitterness (alpha acids) from hops, and 3) to break down particulates for a clearer finished product. 1. As your wort nears the boil, be prepared to turn down the heat or add foam control to prevent boil-overs. 2. Once you reach a steady rolling boil, add your first boil addition and start your timer counting down to the next addition (i.e. if it's a 60 min boil and your next addition is at the 15 min mark, start your timer for 45 minutes). Add all other additions at their appropriate times. 3. Sanitize all other equipment that will contact your wort after the boil. 4. If you're using an immersion chiller, attach tubes and submerge in pot at the 15 min mark to sanitize. 5. Once your full boil time has elapsed, it's time to start the cooldown. Start running water through your immersion chiller. The outgoing water will be steaming hot, so be sure the outflow is directed somewhere safe. 6. If the spigot on your kettle draws from the side, you can benefit from a whirlpool step: a. Remove your wort chiller and use a sanitized metal spoon to rapidly stir your cooled wort to create a whirlpool. The hop sediment and other hot break material will be sucked to the center of the pot. If you then allow it to settle undisturbed for 10-15 minutes, that sediment will sink to the bottom in a more easily avoidable area. You can then rack (transfer) the clear wort from the spigot or using a racking cane, leaving that sediment behind. 7. Once cooled to fermentation temperature, whirlpooled, and allowed to settle, it's time to rack into your sanitized fermentor.	<table><tr><td>60 MIN</td><td> • 0.5 oz Perle </td></tr><tr><td>10 MIN</td><td> • 0.5 oz Hallertau • Clarifier & Nutrient </td></tr></table>	60 MIN	• 0.5 oz Perle	10 MIN	• 0.5 oz Hallertau • Clarifier & Nutrient										
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PITCH	Adding your yeast is what changes the liquid in your fermentor from “wort” to “beer.” 1. Sanitize the exterior of the yeast package as well as any tools used to open it. 2. Add your yeast to the fermentor and seal with an airlock and stopper—being sure to fill the airlock to the appropriate mark with sanitizing solution. 3. Store in a cool dark place for the duration of fermentation.	WLP830 – German Lager WLP860 – Munich Lager WLP835 – German X Ferment at 50 - 55°F														