



All Rye Pale Ale All Grain

Item # ag99-2494

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| Brew Day |
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Juicy grapefruit and pine, offset by spiciness from the rye

Original Gravity : 1.063

IBUs : 30

Color : Amber

Pre-Boil Gravity : 1.059

ABV%: 6.2%

Difficulty : Medium

Final Gravity : 1.016

Additives :

Ingredients Included : Grains & Hops

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| Mash Techniques: <i>Single Infusion: 152 °F Until Conversion (Usually 60 Minutes)</i> <i>Kettle Mash Tun: Mashout to 170° then Sparge with 170° Water</i> <i>Cooler Mash Tun: Sparge with 190° - 200° Water</i> | | Grain Bill: 10 Lbs American 2 Row 2 Lbs Rye Malt 8 oz Biscuit 8 oz Crystal 80 | |
| Boil/Bittering Hops : 1 oz Cascade 60 Minutes | Flavor Hops: 1 oz Cascade 15 Minutes | Aroma Hops : 1 oz Cascade 5 minutes | Knock - Out Hops : |
| | | Dry Hops : 1 oz Cascade Secondary | |
| YEAST: White Labs 001 California Ale (67° - 70°), Wyeast 1056 American Ale (60°-72°) | | | |

Basic All Grain Brewing Method. Advanced Brewing Knowledge is Needed.

This Brewing Technique uses a Boil Kettle and "Cooler" Mash Tun.

1. Clean and assemble your mash tun. Add 1 QT 180°F water for Every LB of grain to be mashed (Add Water First). By adding water first, you will pre-heat your mash tun. Stir water until your temperature hits 170°F. It is now time to add your CRUSHED grains to the cooler. Gently dough grains in until all grain is covered by water. Place lid on and continue to step #2.

2. After 10 minutes you can check your temperature. You will be between 149°F and 156°F assuming you measured your water and grains correctly. Replace lid and "Mash" for 1 hour. Start to heat your sparge water at this point. You will need enough 200°F water for your expected final volume (5 gallons if you want five gallons of brew).

3. After mashing for one hour, you will want to check for conversion of starch to sugar. This will be done by placing a small amount of **grain free** wort on a white plate or bowl. Add one drop of "Tincture of Iodine" to the wort. If it quickly disappears or stays/remains red, you are ready to move on to step #4. If the iodine turns black, starch is still present, return the lid and run a few test. Calibrate your thermometer. Recheck the temperature of the mash. If both are accurate, do another iodine test every 20 minutes until conversion is complete.

4. Conversion is now complete. Slowly drain 1/2 gallon of wort and pour it back on top of your mash. This process (Vorlauf) is used to clear your wort. You may need to run more than 1/2 gallon. When wort is clear, sparging is your next process. Sparging is no more than rinsing the sweet wort from the grains in your mash tun. You will want to gently pour 200°F water over your grains (try to keep an inch or so of clean water on top of the grain bed). SLOWLY collect your wort from the spigot at the bottom of your mash tun. This process should take ONE HOUR. If this is rushed, your gravity will be low...take your time!

5. After ONE HOUR and you have collected enough wort, it is time to start your boil. Keep in mind you will lose approximately 15% of your boil due to evaporation. If you want five gallons of beer, start with six gallons of wort. You are now on familiar ground. You will simply add your hops as scheduled in the recipe. No need to add specialty grains, they were in your mash. Be sure to add your wort chiller and Irish Moss for the last 15 minutes of the boil.

6. You've made it this far and only have the basics left. Chill your wort as quickly as possible. Add your wort to a clean, sanitized fermentor. Aerate your wort aggressively and pitch your yeast. You are all grain beer brewing, so I hope you are building yeast starters at this point.

7. After fermentation and bottling/kegging, be sure to bring us a sample. With all of this hard work, we know you will want a quick critique of your final product...and God knows I deserve one for typing this up for you.

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| ABV% Calculator | | | |
| _____ | _____ | X 131.25 | = _____ |
| Original Gravity | Finishing Gravity | | Alcohol by Volume % |