



NORTHERN BREWER

O.G.	ABV	IBU	BREW TIME: 6 WEEKS
1.065	6.7%	80	Primary: 2 Weeks
			Secondary: 2 Weeks
			Bottle Conditioning: 2 Weeks

PERMAFROST WHITE IPA

This complex and hoppy brew will help you to navigate the doldrums of seemingly never ending winters. Developed with the pioneering spirit of American brewers, this White IPA recipe melds old world tradition with the hoppy boldness of an American IPA. At first glance this beer is as white as a frozen tundra, but upon closer scrutiny, tall drifts of American hop flavor and aromas abound. A traditional withier grain bill and yeast strain coupled with West Coast American hops yields a wonderfully complex India White Ale beer kit.

KIT INVENTORY

GRAIN BILL

- 7 lbs Rahr 2-Row
- 4.5 lbs White Wheat Malt
- 0.75 lb Unmalted Wheat
- 0.75 lb Flaked Oats

PREMIUM HOPS

- 0.5 oz Summit **60 min**
- 0.5 oz Centennial **30 min**
- 1 oz Amarillo **20 min**
- 1 oz Centennial **15 min**
- 1 oz Amarillo **10 min**
- 0.5 oz Centennial **5 min**
- 1 oz Galaxy **Dry Hop**

SUGGESTED YEAST

YEAST

- DRY YEAST:
Fermentis Safale BW-20
 Optimum Temp: 64°-79°F
- LIQUID YEAST OPTIONS:
Omega Yeast OYL-030 Wit
 Optimum temp: 62°-75°F
- Imperial Yeast B44 Whiteout**
 Optimum temp: 62°-72°F
- Wyeast 3944 Belgian Withier**
 Optimum temp: 62°-75°F

BEFORE BREW DAY

- Upon arrival, unpack kit.
- Read all instructions before starting.
- Be sure you have all items listed in the Kit Inventory.
- Refrigerate liquid yeast. Check package for manufacture recommendations for brew day.
- If making a yeast starter, we suggest 24-48 hrs.
- Contact us if you have any questions or concerns.

YOU WILL NEED

- Homebrewing equipment for brewing 5 gallon batches.
- All-grain equipment kit with mash tun and hot liquor tank
- Boiling kettle (at least 8 gallon capacity).
- Approx. 2 cases of 12 oz or 22 oz pry-off beer bottles.
- **Optional** - 5 gallon carboy, with bung and airlock, to use as secondary fermentor.

BREWING NOTES

KEY STATS

Brew Day Date: _____

Secondary: _____

Important Additions: _____

Bottling/Kegging: _____

Fermentation Temp: _____

Yeast Strain #: _____

Measured OG: _____ FG: _____

MASH SCHEDULE

SINGLE INFUSION

If you are new to all-grain, we suggest starting with 1.5 quarts of water per pound of grain for strike water volume. This mash thickness can be adjusted for future brews as you become more comfortable with your equipment.

Saccharification Rest: 150° F for 60 minutes

Mashout: 170° F for 10 minutes (optional)

To raise the temp for mashout, gently apply direct heat while stirring well (if using a kettle), or add near boiling water until target temp is reached.

Prepare sparge water in hot liquor tank at 1 quart per pound of grain. Perform a fly sparge until you reach pre-boil volume (7-8 gallons) in your kettle. Sparge should take about an hour for optimal extraction efficiency. You should end with extra sparge water in hot liquor tank. Use this hot water to clean later on.

BOIL ADDITIONS & TIMES

Total time: 60 mins

- 0.5 oz Summit 60 min remaining	- 1 oz Centennial 15 min remaining
- 0.5 oz Centennial 30 min remaining	- 1 oz Amarillo 10 min remaining
- 1 oz Amarillo 20 min remaining	- 0.5 oz Centennial 5 min remaining

AFTER THE BOIL

1. When 60 minute boil is finished, remove from heat.
2. Cool wort to 62-68°F.
3. Sanitize fermenting equipment and yeast pack: While wort cools, sanitize fermenting equipment (fermenter, lid or stopper, airlock, funnel, etc) along with yeast pack.
4. Transfer cooled wort into primary fermentation vessel using valve on boil kettle, siphoning from boil kettle, OR pouring wort into fermenter.
5. Aerate wort. Seal fermenter and rock back and forth to splash for a few minutes, or use an aeration system and diffusion stone.
6. Measure specific gravity of wort with a hydrometer. Record. Target gravity (OG) for this kit can be found on the front of this sheet.
7. Add yeast once temp of wort is between 62°-68°F. Sanitize and open yeast pack. Carefully pour contents into primary fermenter.
8. Seal fermenter. Add 1 tbs of sanitizer or clean water to sanitized airlock. Insert airlock into rubber stopper or bucket lid. Seal fermenter.
9. Move fermenter to a cool, dark, quiet spot until fermentation begins, such as a cool basement or closet.

PRIMARY FERMENTATION

10. **Within 48 hours Active fermentation begins.**
You'll see a cap of foam on the surface of the beer. Specific gravity as measured with a hydrometer will drop steadily. You may see bubbles in the fermentation lock. Determine optimum temp. for this beer based on the yeast you selected from above.
11. **Within 2 weeks Active fermentation ends.**
Proceed to next step when:
 - Cap of foam falls back into the beer.
 - Bubbling in airlock slows down or stops.
 - Specific gravity as measured with a hydrometer is stable.

SECONDARY FERMENTATION (OPTIONAL)

NOTE: You may skip secondary fermentation and simply add 2 weeks to primary fermentation before bottling.

12. Sanitize siphoning equipment, airlock, carboy bung or stopper. Siphon beer from primary fermenter into secondary.
13. Allow beer to condition in secondary fermenter for 2 weeks before proceeding with the next step. Timing is now somewhat flexible.
14. After 2 weeks of conditioning, Add **1 oz Galaxy hops** directly to the new beer and allow to dry hop for 3-5 days before bottling.

BOTTLING DAY (ABOUT 4 WEEKS AFTER BREWING DAY)

15. Sanitize siphoning and bottling equipment.
16. Mix a priming solution (sugar dissolved in water; carbonates bottled beer). Use the following amounts, depending on which type of sugar you use:
 - Corn sugar (dextrose) 2/3 cup in 16oz water.
 - Table sugar (sucrose) 5/8 cup in 16oz water.Bring solution to a boil. Pour into bottling bucket.
17. Siphon beer into bottling bucket and mix with priming solution. Stir gently to mix - *do not splash.*
18. Fill and cap bottles.

CONDITIONING (ABOUT 6 WEEKS AFTER BREWING DAY)

19. Condition bottles at room temp. for 1-2 weeks. After this point, store bottles cool or cold.
20. Serving: Pour into a clean glass. Be careful to leave any sediment at the bottom of the bottle. Cheers!

WE'VE GOT YOUR BATCH

We're so confident in the quality of our beer kits, we'll replace any kit, anytime, no questions asked.

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