

High Gravity Fermentations

ZEUS' THUNDOAR WEST COAST IPA



INGREDIENTS

FERMENTABLES

6.0 lbs Light LME

1.75 lbs Brewer's Malt (Packaged with the specialty grains)
(Packaged with the specialty grains)

SPECIALTY GRAINS

1.50 lb Cara Foam

0.50 lb Cara Hell

HOPS

1.00 oz Columbus (Bittering)

0.50 oz Columbus
(Steep/Whirlpool 40min)

0.25 oz Galaxy (Steep/Whirlpool 40min)

0.50 oz Columbus
(Steep/Whirlpool 20min)

0.75 oz Galaxy (Steep/Whirlpool 20min)


0.50 oz Columbus (Dry Hop 3 Days)⁷

0.50 oz Columbus (Dry Hop 5 Days)⁷

FININGS 1 tsp. Irish moss

YEAST

Imperial A07 Flagship
(Recommended)

IBU's: 80	OG: 1.066- 1.068	FG: 1.011- 1.13
ABV: 7.0%-7.5%	Ferm Temp: 60°-72°F	

Recommended Bottling Day Equipment

Bottling Bucket 12 oz. Bottles (appx. 53)
Siphon Setup Bottle Brush
Bottle Filling Wand Bottle Caps
Capper Sanitizer

Recommended Brew Day Equipment

4 Gal. Brew Pot 6.5 Gal. Fermenter
Hydrometer Thermometer
Long Spoon or Paddle Cleanser
Sanitizer Airlock

Recommended Procedures

BREW DAY (Date ____/____/____)

1. **READ:** Read all of the recommended procedures before you begin.

2. **ACTIVATE YEAST:** If using Wyeast liquid yeast, activate the yeast at least 5 hours prior to pitching.

3. **SANITIZE:** Thoroughly clean and sanitize ALL brewing equipment and utensils that will come in contact with any ingredients, wort or beer.

4. **STEEP GRAINS:** Place enough water into a pot to cover specialty grains. Heat to **150°**. Pour crushed grains into grain bag and tie a loose knot at the top of the bag¹ and place in water. Steep for 30 minutes. **DO NOT BOIL THE GRAINS.** Remove bag and allow it to drain into the pot (do not squeeze). Sparge (slowly run water through) the grains with 2 gallons of 168° water. Discard the grain filled bag. Your water is now wort.

5. **START BOIL:** If needed, add enough water to bring to 3 gallons. Bring your wort to a gentle, rolling boil. **Add 1/4 of the malt extract².** Continuously stir the extract into the wort as it returns to a gentle, rolling boil³.

6. **ADD HOPS AND INGREDIENTS⁴:** Place hops the provided hop bag and clip to the side of the pot. Do not tie shut as the same bag will be used for each hop addition. Be careful not to let the wort boil over the pot. Using the provided **BREW DAY SCHEDULE**, note the time the bittering hops were added. Continue the gentle, rolling boil.

7. **COOL WORT & TRANSFER:** Cool the wort down to approximately 70°F by placing the brew pot in a sink filled with ice water⁵. Pour or siphon wort into a sanitized fermenter. Avoid transferring the heavy sediment (trub) from the brew pot to the fermenter.

ABV% Calculator

(OG - FG) x 131.25 = ABV%

(____ * - ____ **) x 131.25 = ____%

*OG from Step #8 **FG from Step #10

Included Equipment

Muslin Hop Bag 2 Muslin Grain Bags

Glossary

OG – Original Gravity

FG – Final Gravity

DME – Dried Malt Extract

LME – Liquid Malt Extract

ABV – Alcohol by Volume

IBU – International Bittering Units

BREW DAY SCHEDULE

1. Add bittering hops ____:____ (time)
 2. Boil 50 minutes
 3. Add Irish moss and **remaining malt extract** ____:____ (time)
 4. Boil 10 minutes
 5. Terminate boil ____:____ (time)
 6. Add First Steep/Whirlpool Addition. ____:____ (time)
 7. Whirlpool (stir) for 20 minutes.
If you cannot whirlpool you can let the hops steep.
 8. Add Second Steep/Whirlpool Addition. ____:____ (time)
 9. Whirlpool 20 minutes.
 10. Remove Hops. ____:____ (time)
- Total Boil Time: 60 Minutes
Total Steep Time: 40 Minutes
Continue to Step #7

8. **ADD WATER:** Add enough clean water (approx. 64° - 72°F) to the fermenter to bring your wort to approximately 5 gallons. Thoroughly stir the water into the wort. Be careful not to add a volume of water that will cause the wort to fall outside of the OG range specified in the BREW STATS⁶. Once you are satisfied your wort is at the proper volume and within the OG range, record the OG in the ABV% CALCULATOR (bottom right on page 1).

9. **PITCH YEAST:** If using liquid yeast open package and pour over the top of the wort surface. If using a dry yeast sprinkle the contents of the yeast sachet over top of the entire wort. Firmly secure the lid onto the fermenter. Fill your airlock halfway with water and gently twist the airlock into the grommetted lid. Move fermenter to a dark, warm, temperature stable area (approx. 64° - 72°F).

FERMENTATION

10. **MONITOR & RECORD:** The wort will begin to ferment within 24 hours and you will notice CO₂ releasing (bubbling) out of the airlock. Within 4-6 days bubbling will slow down. When bubbling has stopped completely take a hydrometer reading⁹. Fermentation is complete when hydrometer readings taken 3 days apart remain the same. Once fermentation is complete notate the FG reading and record it in the ABV% CALCULATOR.

(High Gravity recommends doing a two-stage fermentation)

BOTTLING DAY (DATE __/__/__)

11. **READ:** Read all of the recommended procedures before you begin.

12. **SANITIZE:** Thoroughly clean and sanitize ALL brewing equipment and utensils that will come in contact with any ingredients, wort or beer.

13. **PREPARE PRIMING SUGAR:** In a small saucepan dissolve priming sugar into 2 cups of boiling water for 5 minutes. Pour this mixture into a clean bottling bucket. Carefully siphon beer from the fermenter to a bottling bucket. Avoid transferring any sediment. Stir gently for about a minute.

14. **BOTTLE:** Using your siphon setup and bottling wand, fill the bottles⁸ to within approximately one inch of the top of the bottle. Use a bottle capper to apply sanitized crown caps.

15. **BOTTLE CONDITION:** Move the bottles to a dark, warm, temperature-stable area (approx. 64° - 72°F). Over the next two weeks the bottles will naturally carbonate. Carbonation times vary, be patient.

BIAB Instructions

Mash 13.50 lbs Brewers Malt with specialty grains in 31 quarts of water to get a single infusion mash of 150° F for 60 minutes. Remove grains and drain. Bring to boil and follow the BREW DAY SCHEDULE.

All Grain Instructions

Mash 10.50 lbs Brewers Malt with specialty grains in 16 quarts of water to get a single infusion mash of 150° F for 60 minutes. Sparge with hot water of 170° F to get 6 gallons of wort. Bring to boil and follow the BREW DAY SCHEDULE.

BREW TIPS

¹The grains should not be compacted inside the bag. Grains should steep loosely allowing the hot water to soak into all of the grain evenly.

²Run LME under hot water to allow the extract to pour easier.

³Pay careful attention that the extract does not accumulate and caramelize on the bottom of your brew pot.

⁴When consumed, hops can cause malignant hyperthermia in dogs, sometimes with fatal results.

⁵To avoid bacteria growth cool as rapidly as possible. Do not add ice directly to the wort. Alternatively, you can use a brewing accessory like a Wort Chiller.

⁶Use a sanitized hydrometer while adding water to monitor the SG.

⁷Consider transferring your beer to a secondary carboy (*required for dry hopped beers*), see "Two-Stage (Secondary) Fermentation" see sidebar.

⁸Make sure bottles are thoroughly clean. Use a bottle brush if necessary to remove stubborn deposits. Bottles should be sanitized prior to filling.

⁹Sanitize hydrometer before taking readings.

Two-Stage (Secondary) Fermentation

High Gravity recommends brewers practice a two-stage fermentation. This will allow your finished beer to have more clarity and an overall better, purer flavor. (*This step is necessary when beers require dry hopping.*)

All you need is a 5-6 gallon carboy, drilled stopper, airlock and siphon setup to transfer the beer. You will also need to monitor and record the SG with your hydrometer when the beer is in the 'primary'. When the fermentation slows (5-7 days), but before it completes, simply transfer the beer into the carboy and allow fermentation to finish in the 'secondary'. *If kit contains dry hops they should be added to the provided grain bag and placed in the carboy for the remainder of the fermentation.* Leave the beer for about two weeks and then proceed to Bottling Day. Consult High Gravity to learn more about this technique.