

Recipe :

Infinity (Next Generation IPA)

(5 gallons (Finished Beer) / 19 L - All Grain

Specs :

O.G. = 16 P or 1.065

T.G. = 3.2 P or 1.013

ABV% = 7 %

IBUs = 45

Color = 5 SRM

Ingredients :

Malt :

12 lbs. (5.2 kg.) Rahr 2-row malt (2 Lov)

14 oz. (397 g) Briess Carapils Malt (1.4 Lov)

6 oz. (170 g) Gambrinus Honey Malt (21 Lov)

Water Treatment (For Mashing) :

Lake Michigan Water. For Reference (See Chicago Water Profile)

Carbon Filtration

Food Grade Gypsum (.07 oz. / 2 g)

Calcium Chloride (.328 oz. / 9.3 g) & Kettle Addition (.08 oz. / 2.3 g)

Food Grade Phosphoric Acid :

In Mash : .7 ml.

In Brewkettle : .7 ml

Note : We are amping up our calcium chloride addition on this brew to help create a smooth mouthfeel and texture and soften the bitterness of the brewhouse hop additions!

Special Brew Kettle Addition :

Wyeast Tanal A (powder form) : .05 oz. / 1.4 g.

Hops :

Apollo Hop Pellets (80 min.)[At Boil Start](.5 oz. / 14 g at 17 % Alpha Acid)

Citra Hop Pellets (20 min.)(.3 oz. / 8.5 g) at 13.1% Alpha Acid)

HBC # 0586 Hop Pellets (Whirlpool)(.5 oz. / 14 g) at 11.8% Alpha Acid

Amarillo Hop Pellets (Whirlpool)(.5 oz. / 14 g) at 9% Alpha Acid

Dry Hop :

HBC #0586 Hop Pellets (2.6 oz. / 74 g)

Nectaron Hop Pellets (1.6 oz. / 45 g)

HBC #1019 Hop Pellets (1 oz. / 28 g)

Strata Hop Pellets (.26 oz. / 7.5 g)

Yeast :

Omega Yeast Labs : OYL-011 (British Ale V)

Finings :

Gusmer Kick (Carrageenan) or Whirlfloc G [Kettle Finings] : **NO KETTLE FININGS!!** - Our goal here is to maintain a stable (partial) haze to the finished product.

Nalco or Biofine Clear (Silica based fining agent in liquid form) : .5 fluid oz. (15 ml.) - ½ as much as we would add to achieve full clarity in a beer.

Anti Foam :

Fermcap S

Used in the Brew Kettle to avoid Boil Overs! (.21 fluid oz. / 6.2 ml.)

Used in the fermentation vessel to prevent foaming. (.17 fluid oz. / 5 ml.)

Note : Reducing foaming all throughout the process in the brewhouse to package will help the foam stability of your finished product!

Mashing :

Pre-Heat Mash / Lauter Tun prior to mashing in.

We will perform a Single Infusion mash at a ratio of (3:1) so for every 3 lbs (1.4 kg) of malt we need 1 gallon (3.785 L) of Hot Water (Liquor).

Add 4.4 gall (16.7 L) of Hot Liquor at 162 F (72 C) to the Mash / Lauter Tun and stir in the Gypsum and Calcium Chloride + .7 ml. Food Grade Phosphoric Acid.

Immediately mash in grains targeting a temperature of 152 F (67.2 C).

Rest at 152 F (67.2 C) for 40 min.

Lautering Procedure :

Vorlauf or recirculate wort for 10 min to clarify wort before going to brew kettle.

Take a sample to confirm starch conversion is complete.

Collect first runnings in the Brewkettle (Take a 1st Wort Gravity and pH).

When the grain bed is beginning to become exposed start sparging 170 F (77 C) with Hot Liquor.

Begin heating wort in the kettle to avoid a long delay coming up to boil.

While sparging try to maintain a constant ¼ inch of clear hot water above your grain bed.

Fill your kettle to 7 gallons (26.5 L) of wort cutting your sparge at about 6 gallons (in Kettle) (23 L) to allow sparge water to pull through the grain bed.

Collect a Last Wort Gravity and pH.

Kettle Program :

Note : Realistically for most of us brewing at home the Brew Kettle acts as a combination Kettle and Whirlpool.

At Kettle Full Volume Add : Fermcap S (Anti-foam) .21 fluid oz. (6.2 ml)

At Kettle Full Add : .7 ml Food Grade Phosphoric Acid

When you have a good rolling boil collect a Kettle Full Gravity and pH.

Add Apollo Hop Pellets (80 min)[At Boil Start](.5 oz. / 14 g at 17% Alpha Acid)

At 20 min from Boil End add Citra (13%) Hop Pellets (.3 oz. / 8.5 g at 13.1% Alpha Acid)

At 10 min from Boil End add : .045 oz. / 1.3 g of Tanal A. Slurry in hot wort before adding!

At 5 min from Boil End add : Calcium Chloride (.08 oz. / 2.3 g)

Reminder : We are not adding kettle finings to this beer!

Note : At this point it is good to take another wort sample to see where you are with your gravity in case you might need to boost it with some liquid malt extract (LME) or dextrose. If you are running high you can make a hot liquor addition to bring your gravity down.

Tip : During your 80 min boil this is a great time to make sure that your fermentation vessel is cleaned and sanitized. Pitch your slurry of Omega OYL-011 (British Ale V) as close to your transfer of wort to the fermentation tank as possible. At Revolution for brewing Infinity Hero we target a pitch rate of 1 mill cells / milliliter / Degree Plato! It is very helpful to have a healthy active yeast pitch going into fermentation and a yeast propagation before brewing this beer can be extremely beneficial! Also, this is where you want to add your 2nd addition of Fermcap S of (.17 fluid oz. / 5 ml) in right before cooling wort into the fermenter.

Whirlpool Program :

At Boil End :

Add HBC #0586 Hop Pellets (Whirlpool)(.52 oz. / 15 g at 11.8% Alpha Acid)

Add Amarillo Hop Pellets (Whirlpool)(.52 oz / 15 g at 9% Alpha Acid)

Use a spoon or paddle to get your wort spinning and break up all of your hop pellets.

Once you are done stirring your wort, start a 20 minute timer.

During this 20 min rest while you are allowing your trub pile to form heat sanitize your wort line from your Brewkettle / Whirlpool through your heat exchanger & aeration unit all the way to the fermentation tank if possible.

Take a sample of wort from your Brewkettle / Whirlpool (This is your O.G.) and record starting gravity and pH.

Wort Transfer :

After your 20 min rest begin cool-in of wort through your heat exchanger to the fermentation tank targeting 66 F (19 C).

If you have an oxygen tank and regulator we target our oxygen flow rate at 15 L / min during the entire transfer of wort to the fermentation tank. The Brit Ale V likes the higher O2 flow rate!

Transfer as much clean wort away from your trub pile and spice bag as possible to maximize the volume you are sending to the fermentation tank.

Set the Fermentation tank to 68 F (20 C) if you have the capability to regulate temperature.

Set up a blowoff hose that is submerged in water with a splash of iodine to allow CO2 to vent during primary fermentation.

Fermentation :

Day 1 : Monitor fermentation temperature and gravity trying to maintain as close to 68 F (20 C) as possible.

Day 2 : After 24 hrs of fermentation raise tank temp up to 72 F (22.2 C)..

Day 3 : Check gravity. If it is .5 - 1 P above terminal gravity, harvest or dump yeast and then add your Dry Hop Blend (Listed Above). Unlike our fermentations with 1968 London ESB Ale we dryhop Infinity & Hazy IPAs on Day#3 at 72 F (22.2 C).

Note : With the British Ale V yeast it is crucial to have active fermentation to maximize biotransformation of hop oils and produce the unique citrus / tropical aromas we desire.

Day 4 : Monitor pressure on your fermenter to make sure it doesn't over pressurize!

Day 5 : : Monitor fermentation temperature and gravity and tank pressure. Dump all thick yeast / hop material out of the fermentation tank.

Note : This is a crucial step to preserve the wonderful aromatics from interaction of yeast and hop oils during the dryhop! You want to get the beer off of the yeast and hop material that has settled in the bottom of your fermentation tank to prevent yeast autolysis and degradation of the remaining hop material.

Day 6-8 : Monitor temperature, confirm that you have a stable T.G. (Terminal Gravity) and check for VDK to confirm no diacetyl is detected. (Heat Test will most likely apply for at home testing). Dump thick yeast / hops that have settled to the bottom of your fermenter or rack to another carboy. Set temperature to 32 F (0 C) to further drop yeast and hop matter.

Note : Make sure that you are at a stable terminal gravity for several days before bringing the tank temp down to 32 F (0 C)! Enzymes that are present in the hops can break down dextrins into fermentable sugars and when yeast is present in solution a secondary fermentation can begin. If it does there is a VDK or diacetyl spike and if this happens right when you are bringing your tank temp down you can lock it into your finished product. Also, you can carry some fermentable sugars into your finished product which could cause package overpressurization.

Day 9-10 : Dump solid yeast / hop matter. When you are at 32 F or as close to it as possible, add **.5 fluid oz. (15 ml.)** of Nalco (finings) and gently CO2 rouse your tank from the bottom

(optimally if you have a conical tank) to ensure good mixing. After fining your beer it should take a few days to see a major improvement in clarity.

Note : This is half the amount of Nalco that we would use to fully clarify any of our other beers.

Day 12 : Dump thick yeast / hops and transfer your clear beer to a cornelius keg that has been cleaned, sanitized and CO2 purged and keep the temperature as or as close to 32 F (0 C) as possible. Keep constant CO2 pressure on the headspace of the corny (8-10 psi) to gently force carbonate up to 2.5 - 2.6 volumes of CO2 for serving via draft or bottling!

Tips For Success :

This Can't Be Overstated! The health and viability of your yeast strain is extremely important for the quality of your finished beer! If you can start a yeast propagation with your Brit Ale V yeast strain so it is actively fermenting when you pour it into your fermentation vessel that is ideal. Oxygenation of wort prior to fermentation is super crucial with British Ale V. We target a higher rate of 15 L /min when we use it.

Dry Hop at the correct time .5 - 1 P (1.002 - 1.004) above terminal gravity and at 72 F (22.2 C) to get the cleanest brightest biotransformation characteristics from the interaction of actively fermenting yeast and hop oils.

Try to use unopened bags of the varieties for your dryhop. Partial bags or previously opened bags of hops are better suited for brewhouse additions.

Removing yeast / hops 5 days after the initial dryhop is crucial to retain the clean hop aromatics so the yeast doesn't autolyze and the vegetal hop matter doesn't begin to break down.

Progressive maintenance dumps of yeast and hops as the beer cold conditions are very beneficial to keeping the aromatics and flavor clean and eliminating "hop burn".

Achieving a faint stable haze in a finished product is easier said than done. Eliminating kettle finings and cutting your Nalco / Biofine clear in 1/2 should get you in the ballpark.

Keeping CO2 pressure in the headspace of your beer when the fermentation and dryhop are complete will help preserve hop aromatics which is important here. Gently carbonating your beer to prevent foaming will also aid in your foam stability and let those hop aromatics you worked so hard to extract really pop in your finished beer!

Cheers and Happy Brewing!!

Jim Cibak