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IMPERIAL IPA

Imperial IPA

by Jamil Zainasheff

IMPERIAL IPA
by the numbers

OG:	1.070–1.090 (17–21.6 °P)
FG:	1.010–1.020 (2.6–5.1 °P)
SRM:	8–15
IBU:	60–120
ABV:	7.5–10%

Like many people, when I was new to craft beer I favored beers with a maltier balance, ones that were not so bitter. At that time a homebrew shop owner told me that most people start out preferring malty beer styles, but eventually everyone craves hoppy beers. He was right and it didn't take long before I began to appreciate and then crave beers with a bold hop bitterness, flavor, and aroma. India pale ale quickly became an everyday beer for me. I think this appreciation of hop bitterness and character eventually develops in almost all craft beer lovers and for many, that craving just can't be satisfied. Like horror movie zombies hungry for brains, hoppy beer lovers seek out new beers to satisfy their ever increasing hunger for hop bitterness, flavor and aroma. For those infected with this Humulus lupulus disease, one of the best cures on the market is a couple of pints of imperial IPA.

Imperial IPA is a beer bigger in alcohol strength, hop bittering and hop character than standard India pale ale. However, the malt character in an imperial IPA is not necessarily bigger than that found in an American IPA. Too big a malt character makes a beer more like a barleywine.

An imperial IPA should be intensely hoppy. A drinker new to hoppy beers might consider the hop bittering, flavor and aroma overwhelming. The aroma and flavor are usually full of citrus and pine notes from the liberal use of American hop varieties. Grassy, resiny and fruity hop notes are also common. This style, like many American-style beers, has a clean fermentation character. Alcohol can be evident, but it should never really be hot or harsh. These beers range in appearance from golden to a reddish copper. While there are excellent examples of the style that are filtered clear, a hazy appearance is not a problem. Massive dry hopping can leave a beer quite hazy from all that hop goodness. The overall flavor should be about hops and malt is only a secondary characteristic. It should be a clean, relatively simple malt background that supports the massive hop load, but does not try to balance it. If you want more balance with your hops, think about brewing an American barleywine instead. Same goes for the mouthfeel and finish. Imperial IPA never has more than a medium body and should have a dry to medium-dry finish. A big body or sweet finish is a flaw and more appropriate for a barleywine.

While one might describe imperial IPA as a bigger than normal IPA, you can't just make a bigger IPA. Well, you can, but the result is likely to be too heavy, with too much residual sweetness. The best imperial IPAs have a dry finish and the finishing gravity should be in the 1.010 to 1.015 (2.6 to 3.8 °P) range, no matter how big the starting gravity. This is a key facet of keeping the beer drinkable.

My good friend Mike "Tasty" McDole has won more than a few major awards for his imperial IPA, so I asked him what he considers to be the single most important aspect of brewing this style. He told me, "This is a very hop forward beer and you cannot achieve that goal unless you keep the malt character from getting in the way. The best way to do that is to use simple sugar."

Russian River Brewing Company's Pliny the Elder, which many consider the finest example of this style, also uses simple sugar to ensure a dry, light malt character. I feel the addition of simple sugar (corn sugar, cane sugar, beet sugar) is critical to making a great example of this style. Put aside any fears you might have that adding sugar will make your beer too thin or "cidery." That is only an issue when using a very large percentage of sugar. Target around 10% of the grist as simple sugar. These easily fermentable sugars also assist in achieving a low

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Hop Hammer

(5 gallons/19 L, all-grain)

OG = 1.079 (19.2°P)
FG = 1.013 (3.3°P)
IBU = ~100 SRM = 7
ABV = 8.8%

Ingredients

13.5 lbs. (6.12 kg) Great Western American two-row malt (2 °L)
0.5 lb. (227 g) Great Western wheat malt (2 °L)
0.5 lb. (227 g) Great Western crystal malt (40 °L)
1.25 lb. (0.56 kg) corn sugar (0 °L)
26.25 AAU Warrior hops (1.75 oz./50 g at 15% alpha acids) (90 min.)
22.75 AAU Chinook pellet hops (1.75 oz./50 g at 13% alpha acids) (90 min.)
12 AAU Simcoe® pellet hops (1.0 oz./28 g at 12% alpha acids) (45 min.)
14 AAU Columbus pellet hops (1.0 oz./28 g at 14% alpha acids) (30 min.)
15.75 AAU Centennial pellet hops (1.75 oz./50 g at 9% alpha acids) (0 min.)
12 AAU Simcoe® pellet hops (1.0 oz./28 g at 12% alpha acids) (0 min.)
35 AAU Columbus pellet hops (2.5 oz./71 g at 14% alpha acids) (dry hop)
13.5 AAU Centennial pellet hops (1.5 oz./43 g at 9% alpha acids) (dry hop)
18 AAU Simcoe® pellet hops (1.5 oz./43 g at 12% alpha acids) (dry hop)
White Labs WLP001 (California Ale), Wyeast 1056 (American Ale) or Fermentis Safale US-05 yeast

Step by Step

Mill the grains and dough-in targeting a mash of around 1.5 quarts of water to 1 pound of grain (a liquor-to-grist ratio of about 3:1 by weight) and a temperature of 150 °F (66 °C). Hold the mash at 150 °F (66 °C) until enzymatic conversion is complete. Infuse the mash with near boiling water while stirring or with a recirculating mash system raise the temperature to mash out at 168 °F (76 °C). Sparge slowly with 170 °F (77 °C) water, collecting wort until the pre-boil kettle volume is around 6.5 gallons (24.4 L) and the gravity is 1.061 (15.1 °P).

The total wort boil time is 90 minutes. Add the bittering hops right at the beginning, with 90 minutes remaining in the boil. Add the other hop additions according to the schedule and Irish moss or other kettle finings at 15 minutes left in the boil. Chill the wort rapidly to 67 °F (19 °C), let the break material settle, rack to the fermenter, pitch the yeast and aerate.

Use 15 grams of properly rehydrated dry yeast, 3 liquid yeast packages, or make an appropriate starter. Ferment at 67 °F (19 °C), slowly raising the temperature to 70 °F (21 °C) as the fermentation begins to slow. Fermentation should be complete in about a week.

As soon as the bulk of the yeast begins to drop, transfer the beer to a second fermenter and add the dry hops. The pellets should break up and eventually settle to the bottom of the fermenter. This might take a few days. Let the beer sit on the hops for another 7 days, approximately 7 to 10 days total. Keg or bottle, targeting a carbonation level of 2 to 2.5 volumes.

Hop Hammer

(5 gallons/19 L, extract with grains)

OG = 1.079 (19.1 °P)
FG = 1.013 (3.3 °P)
IBU = 100+ (315 calculated)
SRM = 6 ABV = 8.8%

Ingredients

8.0 lbs. (3.63 kg) Briess light liquid malt extract (2 °L)
0.5 lb. (227 g) Great Western wheat liquid malt extract (4 °L)
0.5 lb. (227 g) Great Western crystal malt (40 °L)
1.5 lb. (0.68 kg) corn sugar (0 °L)
26.25 AAU Warrior pellet hops (1.75 oz./50 g at 15% alpha acids) (90 min.)
22.75 AAU Chinook pellet hops (1.75 oz./50 g at 13% alpha acids) (90 min.)
12 AAU Simcoe® pellet hops (1.0 oz./28 g at 12% alpha acids) (45 min.)
14 AAU Columbus pellet hops (1.0 oz./28 g at 14% alpha acids) (30 min.)
15.75 AAU Centennial pellet hops (1.75 oz./50 g at 9% alpha acids) (0 min.)
12 AAU Simcoe® pellet hops (1.0 oz./28 g at 12% alpha acids) (0 min.)
35 AAU Columbus pellet hops (2.5 oz./71 g at 14% alpha acids) (dry hop)
13.5 AAU Centennial pellet hops (1.5 oz./43 g at 9% alpha acids) (dry hop)
18 AAU Simcoe® pellet hops (1.5 oz./43 g at 12% alpha acids) (dry hop)
White Labs WLP001 (California Ale), Wyeast 1056 (American Ale) or Fermentis Safale US-05 yeast

Step by Step

Mill or coarsely crack the specialty malts. Mix them well and place loosely in a grain bag. Steep the bag in ½ gallon (~2 liters) of 170 °F (77 °C) water for about 30 minutes. Lift the grain bag out of the steeping liquid and rinse with warm water. Allow the bags to drip into the kettle for a few minutes while you add the malt extract. Do not squeeze the bags. Add enough water to the steeping liquor and malt extract to make a pre-boil volume around 6.5 gallons (24.4 L) and the gravity is 1.061 (15.0 °P). Stir thoroughly to help dissolve the extract and bring to a boil.

Follow the remainder of the all-grain version of this recipe at left.

finishing gravity. If you're an extract brewer and need more attenuation, replace more of the base malt extract with simple sugar. If you need less attenuation, then shift the percentage toward the base malt.

The majority of the grist in an imperial IPA is North American two-row malt or a light colored extract made from the same. A good quality North American two-row malt provides a nice background malty, clean, slightly bready character, which is evident in the beer, but not overwhelming. That is what you want, malt character, but one that doesn't cover the hop character.

In the best examples, the use of specialty malts for flavor and head retention is restrained. A small amount of crystal malt, for a subtle touch of caramel, is a nice addition. A little wheat is common in many recipes to improve head retention. Some examples obviously have more crystal and other specialty malts added, but that can negatively impact drinkability, as the beer starts becoming richer and sweeter. If you want to make a darker beer, switching to darker specialty malts rather than increasing the amount of a lower color specialty malt, is the way to go. It does change the flavor, but it will help to preserve the dry finish required for the style. Keep in mind the best examples of this style, such as Pliny the Elder, are all on the pale end of the range.

This is a great style for extract brewers, as there are plenty of high quality pale malt extracts on the market and the focus in this style is really on the hops. When choosing an extract, avoid any with a low level of fermentability. If your favorite extract doesn't quite attenuate enough, swap out a little more of the malt extract with simple sugar the next time you brew this beer. For all-grain brewers, a single infusion mash works well. Target a mash temperature range of 148 to 152 °F (64–67 °C). If you are making a higher gravity beer or are approaching a double digit percentage of specialty malts, use the lower end of this temperature range to ensure the beer attenuates enough. If you are making a smaller beer, use the higher end of the range to retain a bit more body.

The intense hop character of this beer style comes from a combination of an insane amount of hops and selecting the right hop varieties. One very important thing to keep in mind is that the hop varieties and quantities are more important than their alpha acid levels. Once the bittering gets past a certain level, you're only interested in the oils, resins and other hop compounds that add flavor, aroma and mouthfeel. If you're getting ready to brew the recipe in this article and you can't find Simcoe at 12%, don't worry about it. Simcoe at 10% or 14% is just fine. As long as the alpha acid range is somewhere in the ballpark, keep all the quantities the same as in the recipe. For most beer styles the bitterness to starting gravity ratio (IBU divided by OG) is somewhere between 0.3 and 0.7. A bitter beer like an American IPA would range around 1.0. For an imperial IPA, if your recipe's IBU/OG ratio isn't somewhere around 3.0+, then you're not adding enough hops.

One of the things to keep in mind is that you're trying to build an intense, but harmonious hop character. Combining random hop varieties can result in some weird flavors. Hop selection is flexible, but many aficionados of this style consider the citrusy and evergreen characteristics of American type hops a requirement. Columbus, Centennial, Simcoe, Chinook are all good choices. Lower alpha acid hops, such as Cascade are fine too, but you'll want to focus on the higher alpha acid hops. The higher alpha hops have characteristic resiny flavors and higher bittering potential, which will reduce the amount of hop vegetable matter that ends up in your kettle. When selecting hop varieties you can select as many varieties as you want, but try to make sure they're all grouped into no more than two hop flavor families. For example, select hops which all share citrusy and evergreen characteristics as their prominent attribute. Don't start mixing herbal, floral, spicy, citrus and evergreen all in one recipe.

To achieve an intense hop character, you can't be shy in the amount of hops you add or the timing of the additions. A 5.0-gallon (19-L) batch of beer requires around ¾ to 1 lb. (340 to 450 g) of hop pellets. As for timing of the additions, make sure you have some hops at the beginning of the boil, mid-way through the boil, at the end of the boil, and dry hop additions at the end of fermentation is important to proper flavor development.

The amount of hop material in the kettle and fermenter will be massive. You might want to scale up the 5-gallon (19-L) recipe in this article to 6 gallons (23 L) to get a finished 5 gallons (19 L), otherwise expect to end up with around 4 gallons (15 L) of finished beer.

Yeast selection is simple for this style. You want a yeast strain with a clean, neutral character and one that will attenuate well. My favorites are White Labs WLP001 (California Ale), Wyeast 1056 (American Ale) and Fermentis Safale US-05. Other strains worthy of experimentation are White Labs WLP051 (California V), Wyeast 1272 (American Ale II) and Wyeast 2450 (Denny's Favorite 50).

Ferment this beer with plenty of healthy, clean yeast at a moderate temperature. I like to start fermentation around 67 °F (19 °C), slowly raising the temperature to 70 °F (21 °C) as the fermentation begins to slow. This helps control any hot, solvent-like notes in this higher than normal ABV beer. Ramping up the temperature as the fermentation begins to slow will help ensure complete attenuation. If you are a brewer that repitches yeast from one batch to another, do not reuse the yeast from this batch of beer. The high hopping level has considerable negative impact on yeast viability (as does the alcohol content of this beer), so it is better not to reuse this yeast.

One last tip: imperial IPAs are best consumed within the first couple months in order to fully enjoy the freshest, brightest, most intense hop character. BYO

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