

IPA 2.0

THE CONTINUED EVOLUTION OF IPA

Brewing the beer style known as IPA (India pale ale) has, at times, become a game of one-upmanship in which each succeeding brew gets more hops, more malts, more alcohol — more of all the good stuff we love about beer. Here on the West Coast, we keep pushing the limits of this beloved style and are proud of it. Pushing the limits is part of our tradition culturally, but also as a beer producing region. For example, a traveler named William Minturn wrote in 1877 about California beer in his book, “Travels West:”

“We then had a glass of California beer, which is thoroughly good, and one gets a taste of the hops very strongly.” (Thanks to beer author Ken Weaver for sleuthing that quote.)

Keeping true to our historic love of hops, West Coast IPA brewing has emerged as a clear favorite in homebrewing popularity. IPA appears to be so “large and in-charge” that the style is bleeding into other styles . . . or you could say it is devouring other styles. Here at The Beverage People (the homebrew shop in Santa Rosa, California that I work at), we have retired the long-lived and long-loved barleywine beer kit and replaced it with an imperial IPA kit. This new style, Imperial IPA, is only one of several new variants on India pale ale to emerge. Homebrewers are now also venturing into Black IPAs, wheat IPAs, rye IPAs and even Belgian IPAs. And why not?! Each of these new styles

gives a whole different flavor profile, and a whole different way to revel in our hop addiction. So let’s take a look at these new IPA variants and how brewers have been succeeding with them.

In each sub-style you want to focus on different malts and hops to end up with flavors that play well together, either enhancing each other or providing balance. Analyzing the strategies and ingredients used to produce these variants is a good way to get to know some of the most popular specialty malts and modern hops used in brewing. Before we delve into the particulars of these new styles, however, let’s begin at the center of the style — American IPA.

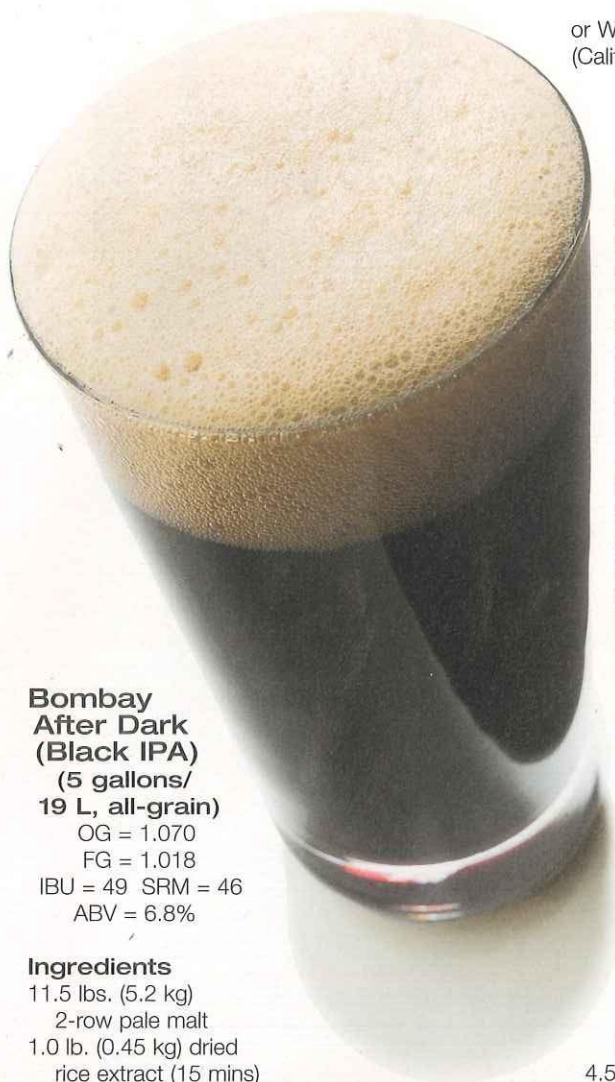
IPA 1.0

American IPA evolved from its British origins into a hop-centric, thirst quenching delight. Recipes tend to have very simple malt bills that play a background role to the citrusy American hops of choice. The yeast can be either neutral or fruity,

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“We then had a glass of California beer, which is thoroughly good, and one gets a taste of the hops very strongly.
— William Minturn, 1877”

IPA 2.0 RECIPES: BLACK IPA



Bombay After Dark (Black IPA)
(5 gallons/
19 L, all-grain)
OG = 1.070
FG = 1.018
IBU = 49 SRM = 46
ABV = 6.8%

Ingredients

11.5 lbs. (5.2 kg)
2-row pale malt
1.0 lb. (0.45 kg) dried
rice extract (15 mins)
12 oz. (0.34 kg) flaked barley
8.0 oz. (0.23 kg) chocolate malt
(625 °L)
8.0 oz. (0.23 kg) caramel malt (80 °L)
6.0 oz. (0.17 kg) Carafa® Special I malt
(300 °L)
4.0 oz. (0.11 kg) extra dark caramel malt
(120 °L)
2 whirlfloc tablets (or 2 tsp. Irish moss)
8.8 AAU Cascade hops (60 mins)
(1.1 oz./31 g of 8% alpha acids)
1.0 oz. (28 g) Columbus hops
(5 mins)
1.0 oz. (28 g) Columbus hops
(0 mins)
1.0 oz. (28 g) Chinook hops (0 mins)
1.0 oz. (28 g) Chinook hops (dry hops)
6.0 oz. (170 g) corn sugar
(for priming)
Wyeast 1056 (American Ale), White Labs
WLP001 (California Ale), Fermentis
US-05, Wyeast 1272 (American Ale II)

or White Labs WLP051
(California V) yeast
(2.5 qt./2.5 L yeast
starter or 10 grams
of dried yeast)

Step by Step

Adjust water chemistry for a dark beer. (If using RO or distilled water, add 1 tsp. chalk, ½ tsp. gypsum and ¼ tsp. calcium chloride per 6 gallons/23 L of brewing liquor). Mash grains at 153 °F (67 °C) in 17 qts. (16 L) of water for 45 minutes. Boil wort for 60 minutes, adding hops at times indicated. Add rice extract and whirlfloc tablets for final 15 minutes of the boil. Whirlpool wort for 5 minutes before chilling. (Skipping this step will lower the bitterness of your beer.) Cool wort, aerate well and pitch yeast. Ferment at 62 °F (17 °C). Dry hop for 4 to 7 days.

Partial mash option:

Reduce the amount of 2-row pale malt to 1 lb. 10 oz. (0.73 kg). Add 2.0 lbs. (0.91 kg) light dried malt extract and 4.5 lbs. (2.0 kg) light liquid malt extract. (Try Briess or any other light or pale malt extract made in North America for this recipe.) You will need a 2-gallon (7.8-L) beverage cooler and a large steeping bag to follow these instructions. Add pale malt, flaked barley and crystal malt (80 °L) to grain bag. Add 3.5 qts. (3.4 L) of 164 °F (73 °C) water to cooler and submerge bag. Let "steep" for 10 minutes. Open bag and stir in remaining dark grains, 2.0 qts. (1.8 L) of 164 °F (73 °C) water and ½ tsp chalk (calcium carbonate). Let rest for another 35 minutes. Heat 5.5 qts. (5.2 L) of water to 180 °F (82 °C) near end of rest. Run off wort by collecting about 2 cups of wort from the cooler, then adding the same volume of hot water to the top of the grain bed. Repeat until you collect about 2.5 gallons (9.5 L) of wort this way. Stir in dried malt extract and bring wort to a boil. Finish beer by

following the remaining instructions in the extract with grains recipe, starting with the boil. (Add liquid malt extract late in the boil.)

Bombay After Dark (Black IPA)

(5 gallons/19 L,
extract with grains)

OG = 1.070 FG = 1.018
IBU = 49 SRM = 46 ABV = 6.8%

Ingredients

6.25 lbs. (2.8 kg) light dried malt extract
(such as Briess or Alexander's)
6.0 oz. (0.17 kg) 2-row pale malt
1.0 lb. (0.45 kg) dried rice extract
(15 mins)
8.0 oz. (0.23 kg) chocolate malt
(625 °L)
8.0 oz. (0.23 kg) caramel malt (80 °L)
6.0 oz. (0.17 kg) Carafa® Special I malt
(300 °L)
4.0 oz. (0.11 kg) extra dark caramel malt
(120 °L)
2 whirlfloc tablets (or 2 tsp. Irish moss)
8.8 AAU Cascade hops (60 mins)
(1.1 oz./31 g of 8% alpha acids)
1.0 oz. (28 g) Columbus hops
(5 mins)
1.0 oz. (28 g) Columbus hops
(0 mins)
1.0 oz. (28 g) Chinook hops (0 mins)
1.0 oz. (28 g) Chinook hops (dry hops)
6.0 oz. (170 g) corn sugar (for priming)
Wyeast 1056 (American Ale), White Labs
WLP001 (California Ale), Fermentis
US-05, Wyeast 1272 (American Ale II)
or White Labs WLP051
(California V) yeast

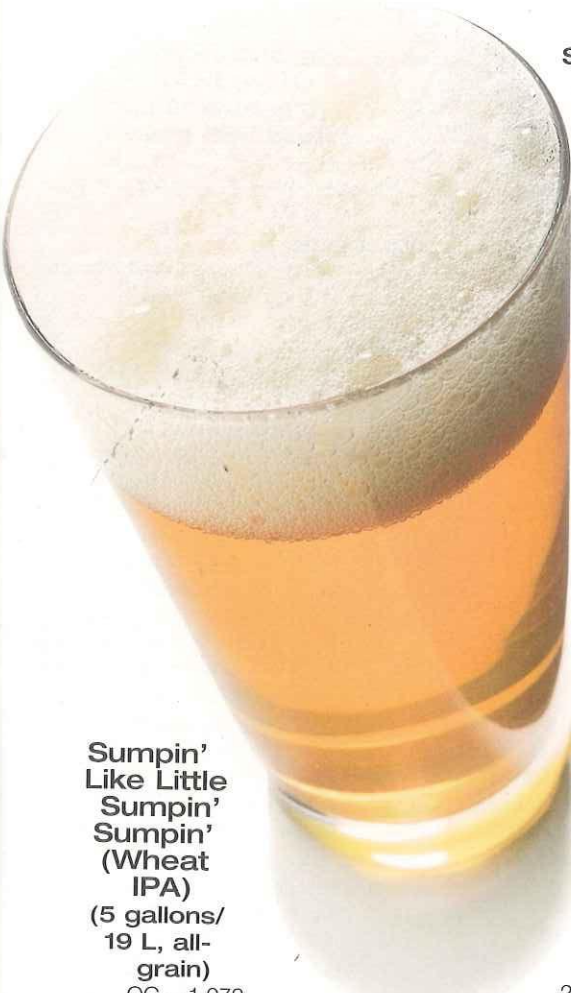
Step by Step

Steep for 45 minutes at 153 °F (67 °C) in 2.8 qts. (2.6 L) of water. Rinse grain bag with 1.5 qts. (1.4 L) of water at 170 °F (77 °C). Add water and dried malt extract to "grain tea" to make at least 3 gallons (11 L). Boil wort for 60 minutes, adding hops at times indicated. When 15 minutes remain in the boil, add whirlfloc and stir in rice extract. Whirlpool for 5 minutes after the heat is turned off. (Just stir the wort to get it rotating, then put the cover on your brewpot). Chill wort and transfer to fermenter. Add water to make 5 gallons (19 L). Aerate well and pitch yeast. Ferment at 62 °F (17 °C). Dry hop for 4 to 7 days.

Tips For Success

Review all you know about the appropriate water chemistry for dark beers.

IPA 2.0 RECIPES: WHEAT IPA



Sumpin' Like Little Sumpin' Sumpin' (Wheat IPA)

(5 gallons/
19 L, all-
grain)

OG = 1.073
FG = 1.018
IBU = 63 SRM = 8
ABV = 7.1%

Ingredients

10.0 lb. (4.5 kg) 2-row pale malt
4.0 lbs. (1.8 kg) wheat malt
1.0 lb. (0.45 kg) flaked wheat
2.0 oz. (56 g) Victory® malt
2 whirlfloc tablets (or 2 tsp. Irish moss)
9.8 AAU Nugget hops (90 mins)
(0.75 oz./21 g at 13% alpha acids)
3 AAU Crystal hops (15 mins)
(1.0 oz./28 g at 3% alpha acids)
8 AAU Cascade hops (15 mins)
(1.0 oz./28 g of 8% alpha acids)
1.0 oz. (28 g) Chinook hops
(2 mins)
1.0 oz. (28 g) Amarillo™ hops
(2 mins)
1.0 oz. (28 g) Cascade hops
(dry hops)
6.0 oz. (170 g) corn sugar (for priming)
White Labs WLP090 (San Diego
Super) yeast
(2.5 qt./2.5 L yeast starter)

Step by Step

Adjust water chemistry for a pale beer. (If using RO or distilled water, add ¼ tsp. calcium chloride and ¾ tsp. gypsum for every 6 gallons/23 L.) Mash grains at 152 °F (67 °C) for 45 minutes. Boil wort for 90 minutes, adding hops at times indicated. Add whirlfloc for final 15 minutes of the boil. Ferment at 67 °F (19 °C). Dry hop for 4 to 7 days.

Sumpin' Like Little Sumpin' Sumpin' (Wheat IPA)

(5 gallons/19 L,
partial mash)

OG = 1.073 FG = 1.018
IBU = 63 SRM = 8
ABV = 7.1%

Ingredients

2.0 lbs. (0.91 kg) 2-row
pale malt
1.0 lb. (0.45 kg) wheat malt
1.0 lb. (0.45 kg)
flaked wheat
2.0 oz. (56 g) Victory®
malt
2.25 lbs. (1.0 kg) light
dried malt extract
5.0 lbs. (2.3 kg) wheat liquid
malt extract
2 whirlfloc tablets
(or 2 tsp. Irish moss)
9.8 AAU Nugget hops
(90 mins) (0.75 oz./21 g
at 13% alpha acids)
3 AAU Crystal hops (15 mins)
(1.0 oz./28 g at 3% alpha acids)
8 AAU Cascade hops (15 mins)
(1.0 oz./28 g of 8% alpha acids)
1.0 oz. (28 g) Chinook hops (2 mins)
1.0 oz. (28 g) Amarillo™ hops (2 mins)
1.0 oz. (28 g) Cascade hops
(dry hops)
6.0 oz. (170 g) corn sugar (for priming)
White Labs WLP090 (San Diego
Super) yeast

Step by Step

Place crushed grains in a large steeping bag. Add 5.6 qts. (5.4 L) of 163 °F (73 °C) water to a 2-gallon (7.8-L) beverage cooler. Submerge bag and mash grains at 152 °F (67 °C) for 45 minutes. Run off and sparge with 170 °F (77 °C) water to collect about 2.5 gallons (9.5 L) of wort. Add dried malt extract and bring volume to

3.0 gallons (11 L) or more. Boil wort for 90 minutes, adding hops at times indicated. Add liquid malt extract and whirlfloc for final 15 minutes of the boil. Cool wort and transfer to fermenter. Top up to 5.0 gallons (19 L), aerate and pitch yeast. Ferment at 67 °F (19 °C). Dry hop for 4 to 7 days.

Sumpin' Like Little Sumpin' Sumpin' (Wheat IPA)

(5 gallons/19 L,
extract with grains)

OG = 1.073 FG = 1.018
IBU = 63 SRM = 6 ABV = 7.1%

Ingredients

5.0 lbs. (2.3 kg) wheat dried
malt extract
2.0 lbs. (0.91 kg) light dried
malt extract
1.0 lb. (0.45 kg) 2-row pale malt
0.5 lb. (0.23 kg) wheat malt
0.5 lb. (0.23 kg) flaked wheat
2.0 oz. (56 g) Victory® malt
2 whirlfloc tablets (or 2 tsp. Irish moss)
9.8 AAU Nugget hops (90 mins)
(0.75 oz./21 g at 13% alpha acids)
3 AAU Crystal hops (15 mins)
(1.0 oz./28 g at 3% alpha acids)
8 AAU Cascade hops (15 mins)
(1.0 oz./28 g of 8% alpha acids)
1.0 oz. (28 g) Chinook hops (2 mins)
1.0 oz. (28 g) Amarillo™ hops (2 mins)
1.0 oz. (28 g) Cascade hops
(dry hops)
6.0 oz. (170 g) corn sugar (for priming)
White Labs WLP090 (San Diego
Super) yeast

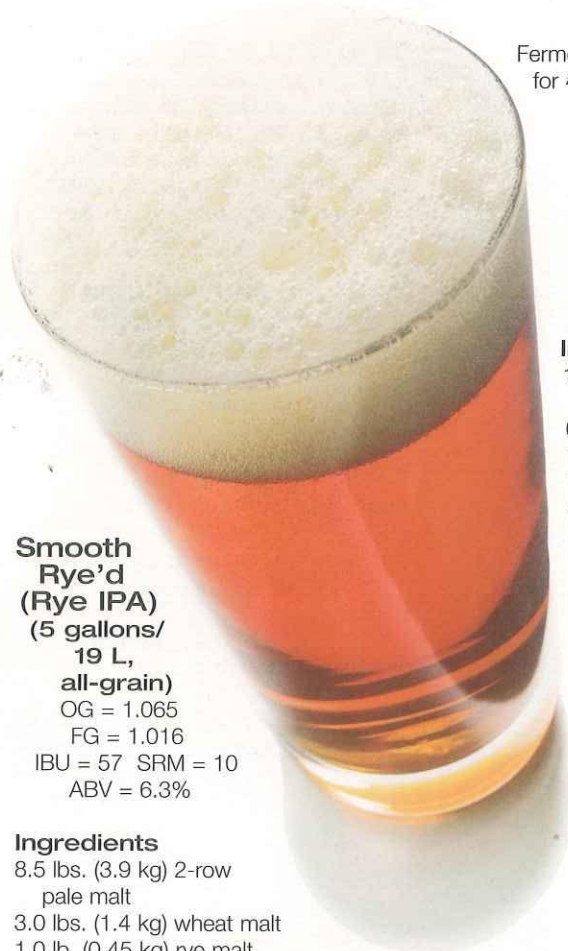
Step by Step

Steep grains at 152 °F (67 °C) for 45 minutes. Add roughly half of the malt extract and bring volume to 3 gallons (11 L) or more. Boil for 90 minutes, adding hops at times indicated. Add remaining malt extract and whirlfloc with 15 minutes left in the boil. Cool wort and transfer to fermenter. Top up to 5 gallons (19 L) with cool water. Aerate, pitch yeast and ferment at 67 °F (19 °C). Dry hop 4 to 7 days.

Tips For Success

Expect a lot of kräusen and try to ferment in a vessel large enough that it (and the bitterness associated with it) doesn't blow off. If you can't find the San Diego Super Yeast, any clean ale yeast (such as those found in the Black IPA recipe) will do.

IPA 2.0 RECIPES: RYE IPA



Ferment at 65 °F (18 °C). Dry hop for 4 to 7 days.

Smooth Rye'd (Rye IPA)
(5 gallons/19 L, all-grain)
OG = 1.065
FG = 1.016
IBU = 57 SRM = 10
ABV = 6.3%

Ingredients

8.5 lbs. (3.9 kg) 2-row pale malt
3.0 lbs. (1.4 kg) wheat malt
1.0 lb. (0.45 kg) rye malt
1.0 lb. (0.45 kg) flaked rye
2.0 oz. (57 g) caramel malt (60 °L)
2.0 oz. (57 g) Victory® malt
2 whirlfloc tablets (or 2 tsp. Irish moss)
13 AAU Nugget hops (60 mins)
(1.0 oz./28 g of 13% alpha acids)
3 AAU Crystal hops (15 mins)
(1.0 oz./28 g of 3% alpha acids)
1.0 oz. (28 g) Chinook hops (5 mins)
1.0 oz. (28 g) Amarillo™ hops (dry hop)
1.0 oz. (28 g) Summit™ hops (dry hop)
6.0 oz. (170 g) corn sugar (for priming)
Wyeast 1056 (American Ale), White Labs WLP001 (California Ale) or Fermentis US-05 yeast (or any clean ale strain)
(2 qt./2 L yeast starter or 9 g dried yeast)

Step by Step

Adjust water chemistry for a pale beer. (If using RO or distilled water, add ¼ tsp. calcium chloride and ½ tsp. gypsum for every 6 gallons/23 L.) Mash grains at 150 °F (66 °C) for 45 minutes in 17 qts. (16 L) of water. Boil wort for 60 minutes, adding hops at times indicated. Add whirlfloc for final 15 minutes of the boil.

Smooth Rye'd (Rye IPA)

(5 gallons/19 L, partial mash)

OG = 1.065 FG = 1.016
IBU = 57 SRM = 10
ABV = 6.3%

Ingredients

1.0 lbs. (0.45 kg) 2-row pale malt
0.75 lbs. (0.34 kg) wheat malt
1.0 lb. (0.45 kg) rye malt
1.0 lb. (0.45 kg) flaked rye
2.0 oz. (57 g) caramel malt (60 °L)
2.0 oz. (57 g) Victory® malt
2.25 lbs. (1.0 kg) light dried malt extract
4.0 lbs. (1.8 kg) wheat liquid malt extract
2 whirlfloc tablets (or 2 tsp. Irish moss)
13 AAU Nugget hops (60 mins)
(1.0 oz./28 g of 13% alpha acids)
3 AAU Crystal hops (15 mins)
(1.0 oz./28 g of 3% alpha acids)
1.0 oz. (28 g) Chinook hops (5 mins)
1.0 oz. (28 g) Amarillo™ hops (dry hop)
1.0 oz. (28 g) Summit™ hops (dry hop)
6.0 oz. (170 g) corn sugar (for priming)
Wyeast 1056 (American Ale), White Labs WLP001 (California Ale) or Fermentis US-05 yeast (or any clean ale strain)

Step by Step

Place crushed grains in a large steeping bag. Add 5.5 qts. (5.2 L) of 161 °F (72 °C) water to a 2-gallon (7.8-L) beverage cooler. Submerge bag and mash grains at 150 °F (66 °C) for 45 minutes. Run off and sparge with 170 °F (77 °C) water to collect about 2.5 gallons (9.5 L) of wort. (Or use hotter water, but ensure that grain bed does not rise above 170 °F/77 °C.) Add dried malt extract and bring volume to 3.0 gallons (11 L) or more. Boil wort for 60 minutes, adding hops at times indicated. Add liquid malt extract and whirlfloc for final 15 minutes of the boil. Cool wort and transfer to fermenter. Top up to 5.0 gallons (19 L), aerate and pitch yeast. Ferment at 65 °F (18 °C). Dry hop for 4 to 7 days.

Smooth Rye'd (Rye IPA)

(5 gallons/19 L, extract with grains)

OG = 1.065 FG = 1.016
IBU = 57 SRM = 10 ABV = 6.3%

Ingredients

3.0 lbs. (1.4 kg) light dried malt extract
3.25 lbs. (1.5 kg) wheat dried malt extract
1.5 lb. (0.68 kg) rye malt
0.5 lb. (0.23 kg) flaked rye
2.0 oz. (57 g) caramel malt (60 °L)
2.0 oz. (57 g) Victory® malt
2 whirlfloc tablets (or 2 tsp. Irish moss)
13 AAU Nugget hops (60 mins)
(1.0 oz./28 g of 13% alpha acids)
3 AAU Crystal hops (15 mins)
(1.0 oz./28 g of 3% alpha acids)
1.0 oz. (28 g) Chinook hops (5 mins)
1.0 oz. (28 g) Amarillo™ hops (dry hop)
1.0 oz. (28 g) Summit™ hops (dry hop)
6.0 oz. (170 g) corn sugar (for priming)
Wyeast 1056 (American Ale), White Labs WLP001 (California Ale) or Fermentis US-05 yeast (or any clean ale strain)

Step by Step

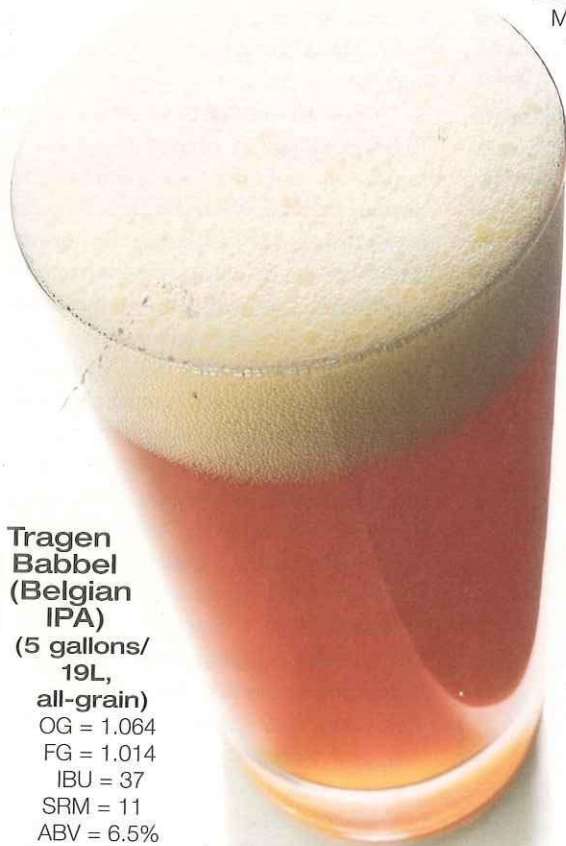
Steep grains at 150 °F (66 °C) for 45 minutes. Add roughly half of the malt extract and bring volume to 3 gallons (11 L) or more. Boil for 60 minutes, adding hops at times indicated. Add remaining malt extract and whirlfloc with 15 minutes left in the boil. Cool wort and transfer to fermenter. Top up to 5 gallons (19 L) with cool water. Aerate, pitch yeast and ferment at 65 °F (18 °C). Dry hop 4 to 7 days.

Tips For Success

As the name implies, this is a smooth version of a rye IPA. It has the characteristic "snap" from rye and rye malt, but this is not as pronounced as in some rye beers. If you'd prefer a more "in your face" version, try adding a pound (0.45 kg) of rye malt to your mash (or steep) and 0.5 oz. (14 g) of Columbus hops — or any other high-cohumulone hop with a solid "bite" — at 30 minutes left in the boil. This will make a more aggressive beer, with an OG just short of 1.070 and IBUs somewhere in the 70s (depending on the alpha acid content of the hops).

Rye has the reputation of being hard to lauter, but you should have no problems with the percentage used in this recipe. If you boost the amount of rye significantly, adding rice hulls to your mash will make for easier lautering.

IPA 2.0 RECIPES: BELGIAN IPA



Tragen Babel (Belgian IPA)
(5 gallons/19L, all-grain)
OG = 1.064
FG = 1.014
IBU = 37
SRM = 11
ABV = 6.5%

Tragen babel is Flemish for "speak slowly."

Ingredients

9.5 lbs. (4.3 kg)
2-row pale malt
1.0 lb. (0.45 kg) clear Belgian candi sugar
1.0 lb. (0.45 kg) flaked wheat
8.0 oz. (0.23 kg) Vienna malt
8.0 oz. (0.23 kg) Caravienne® malt
8.0 oz. (0.23 kg) aromatic malt
2 whirlfloc tablets (or 2 tsp. Irish moss)
7.5 AAU Crystal hops (60 mins) (2.5 oz./71 g of 3% alpha acids)
3 AAU Crystal hops (15 mins) (1.0 oz./28 g of 3% alpha acids)
4 AAU AAU Saaz hops (15 mins) (1.0 oz./28 g of 4% alpha acids)
1.0 oz. (28 g) Citra® hops (dry hops)
1.0 oz. (28 g) Amarillo hops (dry hops)
1 package Fermentis US-05 dried yeast
1 package White Labs WLP500 (Trappist Ale) yeast
8–10 oz. (230–280 g) corn sugar (for priming)

Step by Step

Mash grains at 152 °F (67 °C) for 45 minutes in 15 qts. (14 L) of water. Boil wort for 60 minutes, adding hops at times indicated. Add whirlfloc and sugar with 15 minutes left in the boil. Cool wort below 70 °F (21 °C) and pitch dried yeast. After signs of active fermentation are present, approximately 12–24 hours, pitch the Belgian yeast. After primary fermentation is complete, add dry hops to secondary and allow 4 to 14 days before bottling. For a high carbonation level, use 8 oz. (230 g) of corn sugar in 5 gallons (19 L) when using standard beer bottles, or 10 oz. (280 g) of corn sugar in 5 gallons (19 L) when using Champagne bottles or other bottles that are rated for high pressure.

Partial mash option:

Reduce the amount of 2-row pale malt to 1.5 lbs. (0.68 kg). Add 1.25 lbs. (0.57 kg) light dried malt extract and 4.0 lbs. (1.8 kg) of light liquid malt extract. (If you can find a malt extract made from

Belgian pale or Pilsner malt, use that, else use English malt extract.) You will need a 2-gallon (7.6-L) beverage cooler and a large steeping bag to follow these instructions. Add crushed grains and flaked wheat to grain bag. Add 5.5 qts. (5.2 L) of 163 °F (73 °C) water to cooler and submerge bag. Mash for 45 minutes at 152 °F (67 °C). Heat 5.5 qts. (5.2 L) of water to 180 °F (82 °C) near end of mash. Run off wort by collecting about 2 cups of wort from the cooler, then adding the same volume of hot water to the top of the grain bed. Repeat until you collect about 2.5 gallons (9.5 L) of wort this way. (Don't let the grain bed rise above 170 °F/77 °C.) Stir in dried malt extract and bring wort to a boil.

Boil wort for 60 minutes, adding hops at times indicated. Add liquid malt extract, sugar and whirlfloc for final 15 minutes of the boil. Cool wort and transfer to fermenter. Top up to 5.0 gallons (19 L), aerate and pitch dried yeast. Pitch Belgian yeast once fermentation starts.

Dry hop for 4 to 14 days. Bottle condition with 8 oz. (230 g) of corn sugar when using standard beer bottles, or 10 oz. (280 g) of corn sugar when using Champagne bottles.

Tragen Babel (Belgian IPA) (5 gallons/19L, extract with grains)

OG = 1.064 FG = 1.014
IBU = 37 SRM = 11 ABV = 6.1%

Ingredients

5.0 lbs. (2.3 kg) light dried malt extract
1.0 lb. (0.45 kg) clear Belgian candi sugar
0.5 lb. (0.23 kg) wheat malt
0.5 lb. (0.23 kg) flaked wheat
8.0 oz. (0.23 kg) Vienna malt
8.0 oz. (0.23 kg) Caravienne® malt
8.0 oz. (0.23 kg) aromatic malt
2 whirlfloc tablets (or 2 tsp. Irish moss)
7.5 AAU Crystal hops (60 mins) (2.5 oz./71 g of 3% alpha acids)
3 AAU Crystal hops (15 mins) (1.0 oz./28 g of 3% alpha acids)
4 AAU AAU Saaz hops (15 mins) (1.0 oz./28 g of 4% alpha acids)
1.0 oz. (28 g) Citra® hops (dry hops)
1.0 oz. (28 g) Amarillo™ hops (dry hops)
1 package Fermentis US-05 dried yeast
1 package White Labs WLP500 (Trappist Ale) yeast
8–10 oz. (230–280 g) corn sugar (for priming)

Step by Step

Steep grains at 152 °F (67 °C) for 45 minutes, then rinse. Add about half of the malt extract and water to make at least 3.0 gallons (11 L).

Boil wort for 60 minutes, adding hops at times indicated. Add sugar, whirlfloc and the remaining malt extract with 15 minutes left in the boil. Cool wort and transfer to fermenter. Top up to 5.0 gallons (19 L), aerate and pitch dried yeast. Pitch Belgian yeast once fermentation starts. Dry hop for 4 to 14 days. Bottle condition with 8 oz. (230 g) of corn sugar when using standard beer bottles, or 10 oz. (280 g) of corn sugar when using Champagne bottles.

Tips For Success

For a "cleaner" beer, hold the fermentation temperature steady around 68–70 °F (20–21 °C). For a beer with more "Belgian-y" esters, let the fermentation climb after the first couple days to the mid 70s °F (~24 °C).

but most brewers tend to choose a neutral yeast so that the focus stays on the hops. One particularly useful strategy American brewers have brought to the IPA style is the restrained use of highly fermentable adjuncts (sugar, unmalted starchy adjuncts). If you use 1.0 lb. (0.45 kg) of dried rice extract or corn sugar in a 5-gallon (19-L) batch of IPA in place of 1.0 lb. (0.45 kg) of dried malt extract, it will bring down your final gravity approximately 2 or 3 “gravity points.” The effect this has on mouthfeel and perceived maltiness in the final beer is significant. Also, the hops are more obvious and enjoyable with less residual sugar to hide it. (For more on American IPAs — as well as other hoppy beers such as American pale ale and IIPA — see the July-August 2012 issue of *BYO*.)

Black IPA

Black IPA is a style that highlights my point. To turn an IPA black, we get to consider a new group of malts for use. The dark malts and grains — including black malt (sometimes called black patent malt), chocolate malt, Carafa® malts, darkly roasted wheat malts and roasted barley — are roasty and acidic, but can bring great depth of flavor with hints of coffee, chocolate, and even nuttiness. Some brewers try to avoid these flavors altogether while trying to capture only the color from the malt. Use black malt, dehusked Carafa® III malt or malt color extract, if available, if this is your goal. Using around 3 to 5 oz. (85–141 g) of black malt or Carafa® III in 5.0 gallons (19 L) of beer will add roughly 11 to 16 SRM to your color, but little flavor or aroma.

The Future of IPA

When trying to predict the future, it's best to keep two things in mind: 1.) It's very hard and you run the risk of looking like an idiot when it actually arrives, and 2.) It's ridiculously fun. So with that in mind, I'd like to speculate about the future of IPA. We all know the history. It started with uphopped English ales, migrated to the US where the ales got hopped some more and currently the style has spread both “vertically” (to double IPAs) and “horizontally” (to other styles). Where will it go next? It's tempting to drag out the BJCP Guidelines and look for styles that might benefit from an extra layer of lupulin. But let's face it, that idea has pretty much been explored. Hoppy versions of lots of different beer styles — from Scottish ales to hefeweizens — have emerged on the commercial front and I think the odds are overwhelming that homebrewers have added extra hops to every style that could potentially benefit from them, and then some. So where does IPA go from here? I think the real future lies in hop breeding. Hop breeders come out with new varieties every year and the pace of new introductions is accelerating now that craft beers are booming. Many new hop varieties don't add much to the brewer's palette. Breeding new, basically neutral, higher-alpha hops is fairly popular and there will always be a market for the next higher-alpha hop strain with better crop yields. On the other hand, some new hop varieties have interesting new flavors and this is where I think the next epoch of IPAs will come from. Two recently introduced hop varieties, Sorachi Ace and Nelson Sauvin, have brought us new flavors in hop form. (Sorachi Ace has lemon notes and Nelson Sauvin is reputedly reminiscent of the fruity aroma of Sauvignon Blanc). And, I think it's reasonable to assume that other interesting new hop flavors are in development. And, some of these will taste great when their volume is turned up to 11. Also, with new hop flavors comes the possibility of interesting blends. The currently popular American hops have citrusy and sometime resinous characteristics; new hop varieties that mesh well with these flavors and aromas could usher in a whole age of alpha acid awesomeness. It would, of course, be foolhardy to speculate on what specific flavors new hop varieties may possess, so I'll go ahead and do that. It is at least theoretically possible that any plant-derived flavor or aroma could be bred (or genetically engineered) into hops. The flavors or aromas of any fruit, vegetable, flower or any other plant part could emerge in hop form. In addition, once scientists elucidate the pathways that produce existing hop oils and other flavor compounds, these pathways could be engineered to overexpress their products. There could, theoretically, be a “super” version of all our favorite hops in the future — Super Cascade, Super Amarillo™, Super Simcoe®, etc. Hops that just burst with the flavor of their ancestors.

— Chris Colby

Others allow the dark malt flavors to come through at restrained levels while trying to adapt the other malt, hops and yeast flavors to match. Whichever strategy you attempt, consider some of these ingredients to improve your chances of success.

You will need about 12 oz. to 1.0 lb. (0.34–0.45 kg) of one of these black malts, or a blend, to achieve the desired dark brown to black beer color in a 5.0-gallon (19-L) batch. Be sure to add some chalk (calcium carbonate) to counteract the acidity from the black malts. (1 tsp. per 5 gallons/19 L is a good rule of thumb if your municipal water source is well-suited to pale to moderately amber beers.)

Use “the usual” America-style IPA hops, including Cascade, Columbus, Chinook, Centennial, Amarillo™ and Simcoe®, in this style of beer.

Wheat IPA

My favorite evolution in IPA in the last few years came from Lagunitas Brewing Company. Their Little Sumpin' Sumpin' Ale defies categorization, but I like to think of it as a wheat IPA. The high alcohol and hop profile are similar to an imperial IPA, but the malt base includes a high percentage of wheat. The use of wheat softens the beer significantly, so be sure to avoid the more aggressive bittering hops such as CTZ (Columbus/Tomahawk®/Zeus).

With the soft flavors of wheat in the malt bill and use of clean bittering hops, the beer becomes an incredible stage for hop aromas to dance on. I have done several versions of this style and found that residual sugars decrease the quality of the beer. You don't want the beer to taste syrupy. This is a risk, particularly if you want it strong like an imperial IPA. You want a dry finish and bountiful hops. Avoid high proportions of caramel malts, or even leave them out completely in favor of lightly toasted malts, such as Vienna, Munich or Victory®/biscuit. To lower the final gravity, use highly attenuative yeasts or make use of corn or rice sugar to improve fermentability.

Keep in mind that most wheat beers are approximately 50% wheat

and 50% barley. You may want your proportions of barley to be slightly higher than this to retain a bit of backbone. For extract beers, you may want to blend dried wheat malt extract (which is often made from a 50:50 blend of barley and wheat malts) and dried barley malt extract.

Rye IPA

Rye IPA — or rye-P-A as it is sometimes called — takes the style another direction completely. Rye is known to be spicy, and you can echo this character with hop choices. Bear Republic's Hop Rod Rye, for example, brings this spice character to life with their inspiring beer where bready and spicy flavors are married well with aggressive hops and traditional American IPA character. I have found that the spice character of rye, however, is fairly subdued and the malt contributes a smooth slickness to the mouthfeel of the beer. This particular character of rye has been enhanced and brought to life by Sierra Nevada's new beer Ruthless Rye. The bittering hops are soft, flavor hops are resinous and sweet, and aroma hops citrusy and bountiful in true West-Coast style. This gives you two totally different directions to run with a rye IPA. If you want to make a rye-P-A, I suggest first deciding whether you want to try a "spicy" interpretation, or a "smooth" interpretation.

There are two types of rye that homebrewers commonly use — malted rye and flaked rye. Malted rye is the more common choice and the best default choice. Flaked rye will not only add rye flavor and aroma, but it has a higher protein content than malted rye so it will increase your head retention. It sounds trivial, but a creamier, fuller head may be just the dimension you are looking for. If you opt for flaked rye, try 1.0-2.0 lbs. (0.45-0.90 kg) for a 5-gallon (19-L) batch. If you are an extract brewer, be sure to use a mini mash with some 2-row base malt, 6-row malt, or malted rye to ensure sugar conversion. With malted rye, a good start would be to make it about 20% of the grist. Caramel malts can add some body and sweetness to the

beer, but don't overdo them. For more spicy interpretations of the style, use more aggressively-flavored hops.

Why Not A Belgian Twist?

Perhaps the trickiest and most adventurous new IPA variant is the Belgian-style IPA. There are few breweries that attempt it, and I have noticed that homebrewers rarely try it more than once. Trying to blend an IPA with a

Belgian beer is a bit like trying to blend your favorite white wine with your favorite red wine. But with consideration given to the possible flavor and balance conflicts between these styles, you can succeed.

There are a couple significant logistical challenges when merging the two styles. One is an issue of balance. Belgian beers are unapologetically low-hop beers, while IPAs are aggressively

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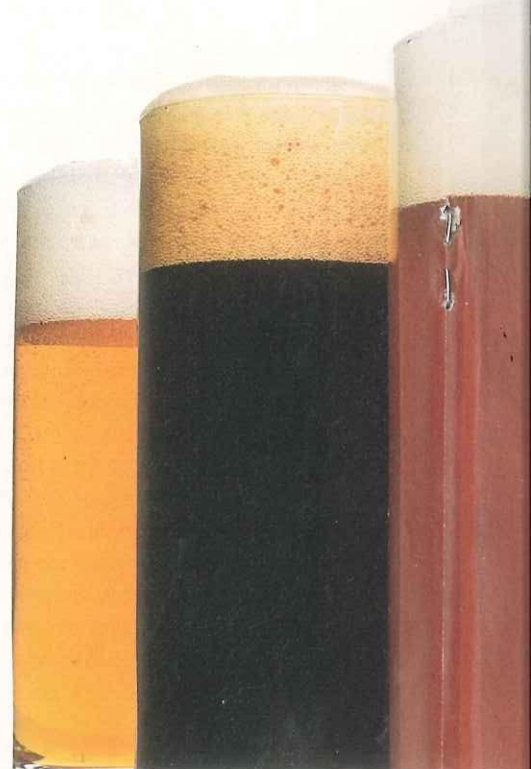
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hopped. The low-hop softness of the Belgian tradition is generally a necessary background to the fruity yeasts used — after all, who wants to taste bitter fruit? The other challenge is conditioning. Belgian yeasts produce a high level of metabolic byproducts. These byproducts — such as fruity esters and spicy phenols — may require cold conditioning to subdue, while fresh IPA dry hop aromas deteriorate with aging. My suggestions at handling these challenges are rather simple, and I ran a test at home to verify.

For my test recipe, I took inspiration from the Bohemian Pilsner tradition. These beers are high in IBUs, sometimes above 40, yet the use of soft water and bittering hops that are low in astringency keep the flavor and finish soft. With this in mind, you might try using pure deionized water as I did, with little or no water salt treatment, and aiming for 35 to 45 total IBUs.

To deal with the conditioning issue, you might use the suggestion of Bob Peak at The Beverage People: Leave the beer in secondary for a week before beginning your dry hop additions, and make a second dry hop addition one week after that. The way I dealt with it in my experiment was to make use of a yeast blend — I added a neutral ale



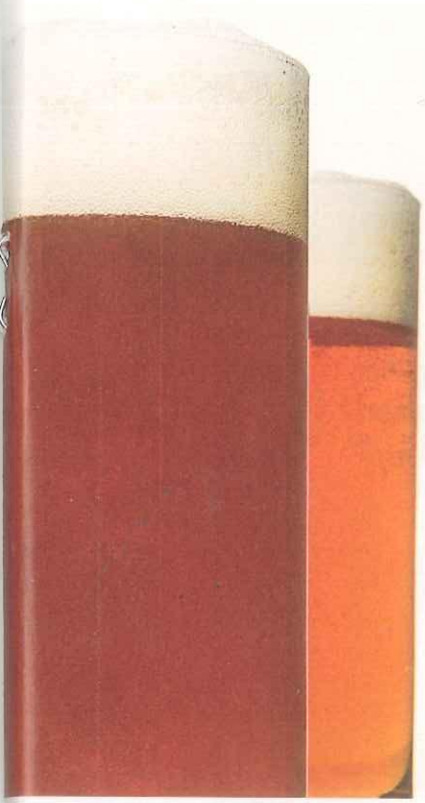
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yeast after cooling the wort followed by a Belgian strain as soon as the fermentation was active. I tried two different Belgian strains — White Labs WLP500 (Trappist Ale) and Wyeast 1762 (Belgian Abbey II) — and found the first added a mellow bubblegum character and the second added a grapefruit note. I was particularly fond of the batch with WLP500 because of the bubblegum character and general softness which played a nice background role to the citrusy hops.

Another consideration is which base beer style to use. I recommend a Belgian blonde, though Belgian tripel is popular as well. Both Belgian styles are yellow to gold in color and should have a fairly dry finish. About 1.0 lb. (0.45 kg) of either rocks or liquid sugar in 5 gallons (19 L) will help assure the desirable dry yet sweet finish. Specialty malts to try in this style include Vienna, Caravienne® or aromatic malt. Keep these additions low enough that you don't add too much color or body. Use European hops for bittering and flavor, perhaps accentuated with some American hops for aroma. (BYO)

This is Gabe Jackson's first BYO article. He works at The Beverage People in Santa Rosa, California.

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