



Brut IPA

THE NEW “NEW”
BEER STYLE

by Vito Delucchi



When you think of San Francisco you might think of the Golden Gate Bridge or maybe those old Rice-A-Roni commercials. For me, having grown up in San Francisco, "The City" has always been a hotbed for free thinking and creativity, with a great culinary culture to boot. After all, my parents grew up in the "hippie" generation and my grandparents owned two local restaurants. But I digress, this article is not about what San Francisco is known for, but rather a new addition to the city's fabled culture — brut IPA.

The City by the Bay has a long history of beer drinking. This is the home of Steam Beer after all, and to quote the late, great Anthony Bourdain, it's "a two-fisted drinking town." When I first heard about an emerging beer style that was rooted in San Francisco, I was immediately intrigued. My first introduction to brut IPA came while discussing Beer Judging Certification Program (BJCP)

styles with homebrewing friends. The conversation was centered around the sweeping popularity of New England IPAs (NEIPAs). Someone mentioned this new "new" beer style called "brut IPA." As it was described to me, I was reminded of everything I loved about old school West Coast IPAs — super dry and clean with hops as the focal point. I didn't actually taste one until a few weeks later. Sadly, it wasn't that pleasing and suffered from diacetyl.

Having moved out of San Francisco many years ago to start my family in the East Bay, it was several months before I could finally make my way into the city to try Social Kitchen and Brewing's brut IPA (where the style was created). It was amazingly effervescent and refreshing, yet left my palate dry thanks to the addition of amyloglucosidase (or AMG for short), and wanting to take another sip. With little to no malt character, it was a great canvas to showcase the hops. I picked up notes of stone fruit and big tropical juicy aromas. Needless



Photos by Vito Delucchi

Social Kitchen and Brewery in San Francisco invented and popularized the style of brut IPA.

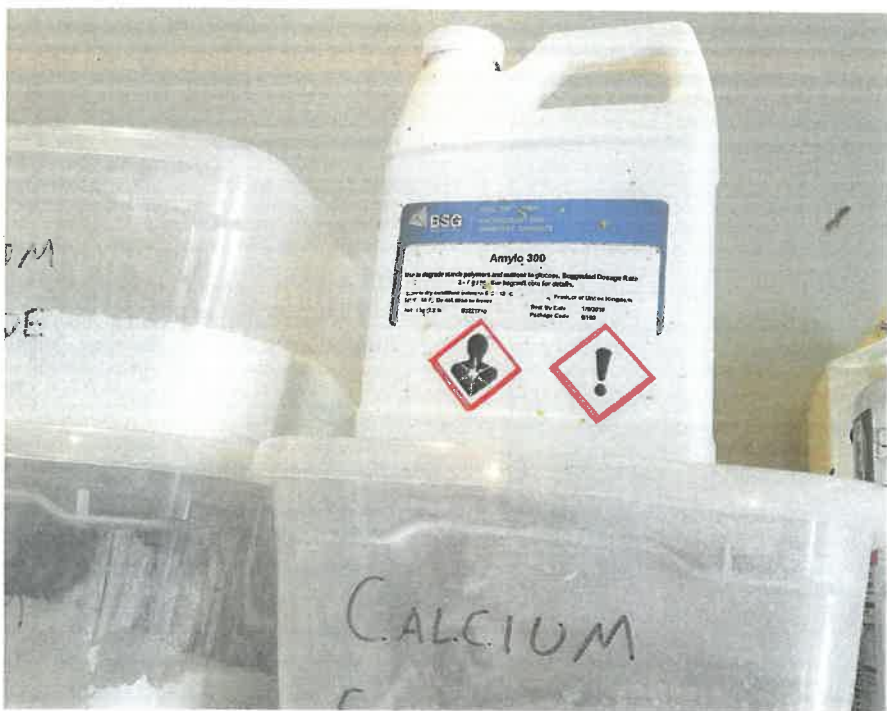
to say, it won me over and my inner homebrewer chi lit up. I wanted to brew one myself!

Immediately, I was back to talking over the style with other homebrewers (common theme, be social!) and the next thing I know I'm mashing in after work with my friend and fellow homebrew club member Max Brown. We exchanged a few text messages that week and came up with a recipe. The style was still fairly new and our experience with enzymes was very limited. We used alpha-amylase, which comes in powder form and is available at most homebrew supply stores. At the time this was the only enzyme we were familiar with. Whenever I'm brewing, and especially when it's something new, I like to split my batch and experiment, so we tried adding more of the amylase enzyme in fermentation on 5 gallons (19 L) of the split 10-gallon (38-L) batch, in addition to adding it in the mash for both batches.

The batch turned out great and was very tasty, but with a slight difference in final gravity. The batch that we used the amylase enzyme in both the hot and cold side finished at 1.004, while the one with the enzyme only in the mash finished at 1.007. By the time our first iteration of brut IPA was done, we had both put in more hours researching enzymes and learned what Social Kitchen was actually using was amyloglucosidase, sold commercially as Amylo 300. Later on, while doing research for this article, I discovered this particular enzyme comes from a fungus (*Aspergillus niger*) found on certain fruits and vegetables. But let's not get ahead of ourselves.

Max and I were on our second batch, and now we were equipped with the correct enzyme. For this batch we included the AMG when we added our dry hops, just before primary fermentation was complete. Nothing could stop us now, right?

A D-Bomb, that's what could stop us! This batch initially tasted good, but after a week or so it showed signs of diacetyl (we should have performed a forced diacetyl rest) and ultimately became a dumper. But it did finish at



Amyloglucosidase (or AMG), available commercially as Amylo 300, is the secret to making a dry brut IPA as it can hydrolyse sequentially both α -1,4 and α -1,6 glycosidic bonds.

1.000 final gravity — yay! We eventually figured out that if you're going to use the AMG enzyme on the cold side, do it as early as possible and perform a longer than normal diacetyl rest. Ideally you can just add it in the mash, which removes the risk of creating a diacetyl bomb since the enzyme will be denatured in the boil. But I have never been able to achieve 1.000 final gravity using it this way. Perhaps a longer mash would do the trick?

On the topic of AMG enzyme, now is probably a good time to share some information about it. As previously mentioned, it is derived from the fungus *Aspergillus niger*. Similar to the alpha-enzyme, it's used to convert non-fermentable sugars into fermentable sugars by working on the non-reducing ends of starch chains and dextrans. The key difference is AMG can hydrolyse sequentially both α -1,4 and α -1,6 glycosidic bonds. It can be used in the mash, the wort pre-boil, or in fermentation. According to the documentation, it works optimally at a temperature range of 131–144 °F (55–62 °C) and a pH range of 5.4–5.6 in the mash. The Amylo 300 documentation mentions use in the fermentation and maturation process, but doesn't give any recommended

temperatures or pH ranges when used in these steps. From experience, I know it also works great at ale fermentation temperatures when added directly to the fermenter.

By this point I was obsessed with brut IPAs, and had been talking about them at work (MoreBeer!) quite a bit, so I started working on a homebrew recipe kit. At the time we did not have the AMG enzyme in stock, so we decided to bring in Ultra Ferm from White Labs, which comes in a packaged down 10 mL homebrew size. Previously I had been using Amylo 300 with a recommended dosage rate (rough numbers) of 0.1 to 0.5 mL per pound (0.2 to 1 mL per kg) of grain in the mash and 0.03 to 0.15 per gallon (0.07 to 0.3 mL per L) of liquid in fermentation. White Labs is diluting it for ease of application on smaller homebrew volumes. Since MoreBeer! sells both extract and all-grain kits and the White Labs documentation at the time only mentioned using it in the mash, the experimentation continued. Thankfully, it was now on the clock instead of at home after hours. We tried adding the enzyme (entire 10 mL vial of Ultra Ferm) at different points in the brewing process, and found the best way to finish

at 1.000 final gravity was to add it at the same time you would pitch your yeast. This not only made for a great extract recipe, but also simplified the process and made using the enzyme more approachable for novice brewers. Find the final recipe (to be released in the near future) at right.

We posted pictures on social media of our enzyme experiments throughout the testing process, and soon after *Brew Your Own* reached out about writing an article on the topic of brut IPAs. I was both honored and, quite frankly, scared to death. I get nervous talking in front of my own brew club, let alone writing an article for an internationally circulated magazine. But I knew I had some resources to draw from. Matt Sager, my good friend and the Head Brewer at Danville Brewing Company, was getting ready to brew their first brut IPA. I know the folks over at Barebottle Brewing Company in San Francisco from one of their homebrew competitions, and they even brewed my winning recipe. They had also brewed two or three brut IPAs that I enjoyed. Of course, if I was going to commit to writing an article on the subject, it would be really nice to talk with the very man (Kim Sturdavant) who invented the style. I found Kim's email on Social Kitchen's website and shot him a message. He graciously agreed and with that I felt confident I could pull it off.

In my 9 years of homebrewing, one thing that has resonated very deeply with me is the brewing community! For the most part, be it amateur or professional, we all share the same love, and that's not just the San Fran hippie in me talking. I think we can all attest to that, no matter where we're from. Anyway, not being a journalist, I didn't know how to approach this. My thought was to sit down with each brewer and ask them a series of questions about Brut IPAs. Questions that, as a brewer, I would and have asked before. Every one of them was super willing to sit down and share their thoughts, processes, and recipes with me. Without further adieu I give you the pro's take on that new "new" brut IPA style.

MOREBEER! JUICY BRUT



(5 gallons/19 L, all-grain)
OG = 1.053 FG = 1.000
IBU = 37 SRM = 4 ABV = 6.8%

INGREDIENTS

10 lbs. (4.5 kg) 2-row pale malt
1 lb. (0.45 kg) Carapils malt
10 mL White Labs Ultra Ferm amyloglucosidase
5.8 AAU Mosaic® hops (60 min.)
(0.4 oz./11 g at 11.5% alpha acids)
6.9 AAU Mosaic® hops (5 min.)
(0.6 oz./17 g at 11.5% alpha acids)
8.5 AAU Amarillo® hops (0 min.)
(1 oz./28 g at 8.5% alpha acids)
12 AAU Citra® hops (0 min.)
(1 oz./28 g at 12% alpha acids)
11.5 AAU Mosaic® hops (0 min.)
(1 oz./28 g at 11.5% alpha acids)
1 oz. (28 g) Citra® hops (dry hop)
1 oz. (28 g) Mosaic® hops (dry hop)
1 oz. (28 g) Amarillo® hops (dry hop)
½ tsp. yeast nutrient (10 min.)
½ Whirlfloc tablet (10 min.)
GigaYeast GY001 (NorCal Ale #1) or
Wyeast 1056 (American Ale) or
White Labs WLP001 (California Ale)
or Safale US-05 yeast
¾ cup corn sugar (if priming)

STEP BY STEP

Mill the grains and dough-in targeting a mash of around 1.25 quarts of water to 1 pound of grain (2.6 L/kg) and a temperature of 149 °F (65 °C). Hold the mash at 149 °F (65 °C) for 45 minutes. Vorlauf until it runs clear, then sparge slowly with 170 °F (77°C) water, collecting wort until the pre-boil kettle volume is reached.

Total boil time is 60 minutes with hop additions at 60 and 5 minutes left in boil. Add Whirlfloc and yeast nutrient with 10 minutes left in the boil. At flameout, add whirlpool hops and whirlpool for 10 minutes. Chill the wort to 67 °F (18 °C) and aerate thoroughly. Pitch yeast and 10 mL vial of White Labs Ultra Ferm. Add dry hops when gravity is around 1.020 and then perform a diacetyl rest. Cold crash and carbonate the beer.

MOREBEER! JUICY BRUT



(5 gallons/19 L, extract with grains)
OG = 1.053 FG = 1.000
IBU = 37 SRM = 4.5 ABV = 6.8%

INGREDIENTS

5.5 lbs. (2.5 kg) Briess Golden Light dried malt extract
1 lb. (0.45 kg) Carapils malt
10 mL White Labs Ultra Ferm amyloglucosidase
5.8 AAU Mosaic® hops (60 min.)
(0.4 oz./11 g at 11.5% alpha acids)
6.9 AAU Mosaic® hops (5 min.)
(0.6 oz./17 g at 11.5% alpha acids)
8.5 AAU Amarillo® hops (0 min.)
(1 oz./28 g at 8.5% alpha acids)
12 AAU Citra® hops (0 min.)
(1 oz./28 g at 12% alpha acids)
11.5 AAU Mosaic® hops (0 min.)
(1 oz./28 g at 11.5% alpha acids)
1 oz. (28 g) Citra® hops (dry hop)
1 oz. (28 g) Mosaic® hops (dry hop)
1 oz. (28 g) Amarillo® hops (dry hop)
½ tsp. yeast nutrient (10 min.)
½ Whirlfloc tablet (10 min.)
GigaYeast GY001 (NorCal Ale #1) or
Wyeast 1056 (American Ale) or
White Labs WLP001 (California Ale)
or Safale US-05 yeast
¾ cup corn sugar (if priming)

STEP BY STEP

Put crushed Carapils into a large nylon mesh bag. Put the bag into the heating water and remove when the water reaches 170 °F (77 °C), allowing about 30 minutes to do so. Remove the grain bag and continue to heat the water to a boil. Turn the heat off and stir in dried malt extract. When completely dissolved, turn the heat back up and bring to a boil.

Total boil time is 60 minutes with hop additions at 60 and 5 minutes left in boil. Add Whirlfloc and yeast nutrient with 10 minutes left in the boil. At flameout, add whirlpool hops and whirlpool for 10 minutes. Chill the wort to 67 °F (18 °C) and aerate thoroughly. Pitch yeast and 10 mL vial of White Labs Ultra Ferm. Add dry hops when gravity is around 1.020 and then perform a diacetyl rest. Cold crash and carbonate the beer.



Social Kitchen And Brewery

HOW DID YOU COME UP WITH BRUT IPA?

I was using the amyloglucosidase enzyme in our Triple IPA as a strategy to not use dextrose. The goal there was to try and lighten the body and cut the sweetness out. I then got the idea to use it in a standard IPA and try to make a sparkling wine-inspired



Kim Sturdavant: Head Brewer at Social Kitchen, started with them in 2012. Before that he worked at Marin Brewing Company for more than five years. He has won two Great American Beer Festival gold medals (2015 & 2017) with his MR. KITE'S – English Pale Ale. He is the creator of the brut IPA style.

hybrid IPA. The two main points were to be ultra dry and as light in color as possible. After thinking about it for about a year or so, I finally squeezed it into the schedule. Over the course of that year I honed the concept in my mind. I wanted the hops be tropical and also have a diesel, resinous hop character; not grassy, earthy or piney. I also thought I would add an adjunct to it to get the color even lighter.

WHAT DO YOU THINK CHARACTERIZES THE STYLE?

I think it's being as dry as possible, very light colored, and lots of hop flavor and aroma. No caramel or other grain flavor should be present.

WHAT DO YOU FEEL ARE KEY INGREDIENTS IN BREWING A BRUT IPA?

Pilsner malt, adjuncts like flaked rice and corn. Of course, the amyloglucosidase enzyme and big tropical and resinous hops. A good yeast nutrient as well.

WHAT SPECIAL TECHNIQUES ARE INVOLVED IN BREWING A BRUT IPA?

I think it's mainly the application of the amyloglucosidase enzyme. Meaning at what point you can add it to the process and make sure it has time to work on the starches. That is

a big reason I encourage people to use a yeast nutrient as well, so it gives the yeast more than just glucose to feed on.

At this point in time I think adding the enzyme on the hot side is the key because you denature the enzyme during the boil. Adding it during fermentation lets the enzyme keep chewing away and can lead to off flavors like diacetyl. I also feel it degrades the hop flavor and aroma when applied during fermentation. Once I moved it to the hot side I feel it has led to a better overall finished product. Although I have not got any of these later batches to finish at zero Plato (1.000 specific gravity), I know a few brewers that are getting down to zero using the enzyme on the hot side and am confident I can achieve that in my own brewery as I experiment more. My batches have been finishing at 0.8 Plato (1.003 specific gravity), which is still pretty darn dry, but more importantly they are very dry in perception and taste great.

WHAT LESSONS HAVE YOU LEARNED FROM SUCCESSES OR FAILURES IN DEVELOPING YOUR BRUT IPA RECIPE?

I think the main one is being suspi-

cious the enzyme is consuming hop oils. I have also found these beers have had very bad head retention. So in my recipe I developed a trick that accounts for that (adding a small amount of dried malt extract in the boil after the enzyme has been denatured). I haven't had any diacetyl, or VDKs (vicinal diketones) in my batches. But I know many brut IPAs have struggled with that.

I have recently discussed with some other brewers who are getting down to a specific gravity of zero with application in the mash and basically the things they were doing that I wasn't was stirring more, resting longer, and using cooler sparge water. It extends the brew day, but at the end of the day, I really think hot side application of the enzyme is the way to go.

In my latest brut, I used enzyme in the kettle while lautering and fired my kettle up so that by the time I was full I was just reaching 150 °F (66 °C) . . . it dried down to 0.2 °Plato (1.001 SG), which is perfect.

Another note is that I've noticed other brewers preferring the beer finishing between 0.0 and 0.5 °Plato (0 and 1.002 SG) rather than negative (which has happened). So it's not necessarily all about finishing as dry as possible, just dry enough to be well distinguished from a West Coast IPA and also really tasty.

WHAT DO YOU THINK THE FUTURE HOLDS FOR THE BRUT IPA STYLE?

I don't think it will reach the NEIPA status because no style has ever taken off like that before. I'm starting to think it will become a recognized BJCP style. It's clearly distinct enough as a style and I think that is a testament to becoming a recognized style. I think people will and already have been adding fruits and botanicals to make it more wine-like. I know people have added grapes. As long as it's still an IPA then it fits the brut IPA style. I encourage people to use enzyme in other styles as well. I think that could lead to some very interesting new beers.

SOCIAL KITCHEN AND BREWERY'S PUTTIN ON THE SPRITZ CLONE



(5 gallons/19 L, all-grain)
OG = 1.053 FG = 1.001–1.003
IBU = 24 SRM = 3 ABV = 6.8%

INGREDIENTS

6 lbs. (2.7 kg) Gambrinus Pilsner malt
3.75 lbs. (1.7 kg) flaked corn
5 oz. (142 g) acidulated malt
1 lb. (0.45 kg) rice hulls
0.5 lb. (0.22 kg) golden dried malt extract
6 mL Amylo 300 (amyloglucosidase enzyme)
3.5 AAU El Dorado® hops (15 min.) (0.25 oz./7 g at 14% alpha acids)
21 AAU El Dorado® hops (0 min.) (1.5 oz./43 g at 14% alpha acids)
6 oz. (170 g) El Dorado® hops (dry hop)
2 oz. (57 g) Mosaic® hops (dry hop)
½ tsp. yeast nutrient (15 min.)
½ Whirlfloc tablet (15 min.)
White Labs WLP051 (California Ale V) or Wyeast 1272 (American Ale II) or Mangrove Jack's M36 (Liberty Bell Ale) yeast
1 cup corn sugar (if priming)

STEP BY STEP

Mill the grains and dough-in with the rice hulls targeting a mash of around 1.25 quarts of water to 1 pound of grain (2.6 L/kg) and a temperature of 142 °F (61 °C). Add amyloglucosidase enzyme to mash and hold the mash at 142 °F (61 °C) for about 60 minutes or until enzymatic conversion is complete. Sparge slowly with 160 °F (72 °C) water (this will allow the mash to remain around 145 °F/63 °C and let the AMG continue to work while lautering), collecting wort until the pre-boil kettle volume is 7 gallons (26.5 L). Once you reach a boil, mix in 0.5 lb. (0.23 kg) of DME. Total boil time is 60 minutes, adding hops, Whirlfloc, and yeast nutrients as indicated. At the end of the boil, turn off heat, add the hops and whirlpool for 20 minutes. Chill the wort to 65 °F (18 °C), aerate thoroughly, and pitch yeast. Yeast cells needed are

about 185.1 billion. As the fermentation nears completion, add the dry hops. Bottle or keg and carbonate as usual.

SOCIAL KITCHEN AND BREWERY'S PUTTIN ON THE SPRITZ CLONE



(5 gallons/19 L, partial mash)
OG = 1.053 FG = 1.001–1.003
IBU = 24 SRM = 3 ABV = 6.8%

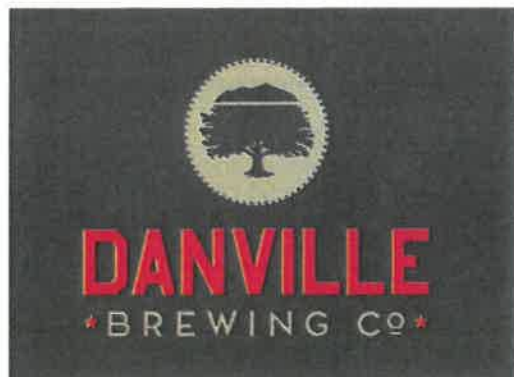
INGREDIENTS

4.25 lbs. (2 kg) Pilsen dried malt extract
1 lb. (0.45 kg) Pilsen malt
1 lbs. (1.7 kg) flaked corn
5 oz. (142 g) acidulated malt
0.5 lb. (0.22 kg) golden dried malt extract
6 mL Amylo 300 (amyloglucosidase enzyme)
3.5 AAU El Dorado® hops (15 min.) (0.25 oz./7 g at 14% alpha acids)
21 AAU El Dorado® hops (0 min.) (1.5 oz./43 g at 14% alpha acids)
6 oz. (170 g) El Dorado® hops (dry hop)
2 oz. (57 g) Mosaic® hops (dry hop)
½ tsp. yeast nutrient (15 min.)
½ Whirlfloc tablet (15 min.)
White Labs WLP051 (California Ale V) or Wyeast 1272 (American Ale II) or Mangrove Jack's M36 (Liberty Bell Ale) yeast
1 cup corn sugar (if priming)

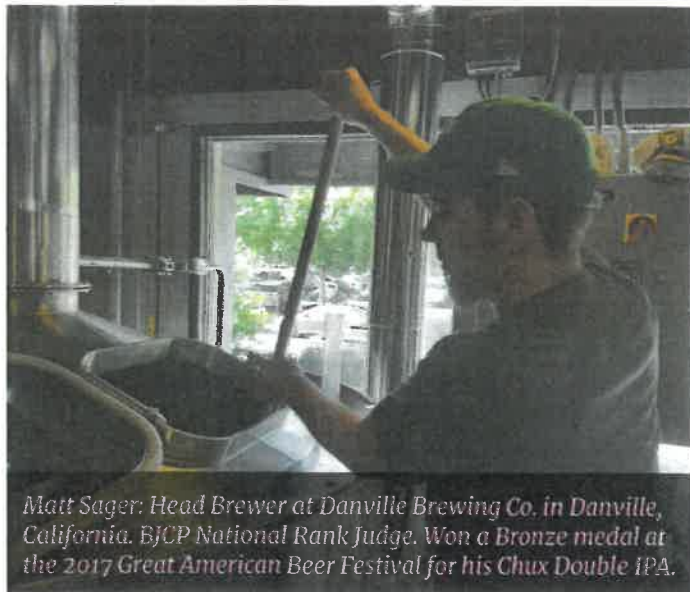
STEP BY STEP

Heat 8 qts. (7.5 L) of water to about 153 °F (67 °C). Place crushed grains in a muslin bag and submerge in the water. Stir in the Pilsen dried malt extract and stir to dissolve, then add the AMG. The temperature should stabilize around 142 °F (61 °C). Hold this mash at 142 °F (61 °C) for 60 minutes. Remove the grains and place in a colander to wash the grains with 4 qts. (3 L) of hot water. Top up the kettle to 5.5 gallons (24.6 L) and stir in the 0.5 lb (0.23 kg) of DME. Total boil time is 15 minutes. Add hops, Whirlfloc, and yeast nutrients as indicated. Follow the remainder of the all-grain instructions.

BRUT IPA PRO TIPS + CLONES



Danville Brewing Co.



Matt Sager: Head Brewer at Danville Brewing Co. in Danville, California. BJCP National Rank Judge. Won a Bronze medal at the 2017 Great American Beer Festival for his Chux Double IPA.

DESCRIBE YOUR FIRST ENCOUNTER WITH A BRUT IPA?

I first tried the style at a pouring event last year. The brewer explained he used “enzymes and Champagne

yeast.” I was really excited to try it, but it turned out to be a pretty big diacetyl bomb. A few weeks later I tried another one from a different brewery and it had diacetyl as well. At that point I was underwhelmed by the style and a little

scared to attempt brewing one, since it seemed to be prone to developing diacetyl. It did inspire me to learn more about the style, though.

WHAT DO YOU THINK CHARACTERIZES THE STYLE?

Now I have had a few that I really liked. The ones that have piqued my interest are hop flavor-forward and aroma-forward while letting bitterness take a back seat. Very little if any caramel malt, and even though this is a hop-forward style I feel it should have a balance of malt complexity. Even if it's on the lower end, I want something there. Dry as a bone, obviously, with some fruity esters. As for hop characteristics, I think of piney, fruity, and citrus variations and a little dank doesn't hurt either.

WHAT DO YOU FEEL ARE KEY INGREDIENTS IN BREWING A BRUT IPA?

I want a backbone of a good-quality Pilsner malt because I like that little touch of sweetness you can get from Pilsner malt. Then some flaked corn and flaked oats. I like the flavor that flaked corn provides and the bit of body you get from flaked oats. Also, some acidulated malt for pH adjustments. As for type of hops, I am looking at Citra®, Mosaic®, and some Southern Hemisphere hops.



WHAT SPECIAL TECHNIQUES ARE INVOLVED IN BREWING A BRUT IPA?

For my typical IPAs I like a sulfate to chloride ratio of 2:1. For this style in particular, though, I am not looking to showcase bitterness, so I am pulling back on the sulfate and going with a balance of 1:1. I am mashing super low in the 145-146 °F (63 °C) range to maximize conversion. On the subject of conversion, I added the amyloglucosidase enzyme in the mash tun. If I were to add the enzyme late in fermentation I would allow for a secondary diacetyl rest. I think that was where some of the bruts that I have tried went sideways.

For this beer I also implemented a hop stand and recirculate through the heat exchanger, after the boil, to lower the wort temperature to 180 °F (82 °C).

WHAT LESSONS HAVE YOU LEARNED FROM SUCCESSES OR FAILURES IN DEVELOPING YOUR BRUT IPA RECIPE?

Considering this is the first time I am brewing this style, I am taking lessons from all of my past beers. Basically, I am approaching this the same way I did when developing my hazy beer, which is hop-flavor and aroma forward and low on bitterness. As well as session IPAs where you want to pack as much flavor as possible into a beer that would otherwise be considered fizzy hop water.

WHAT DO YOU THINK THE FUTURE HOLDS FOR BRUT IPA STYLE?

I don't know if it will reach the same level and demand we see with the haze craze. I think that a lot of brewers are still experimenting with recipe design and process at this point. But that's the beauty of brewing — that spirit of experimentation. Who knows, in a couple of years we might see it added to the BJCP style guidelines. Until then, regardless if it catches on, it's a fun new style that I am enjoying learning about and brewing.

DANVILLE BREWING CO.'S BRUTUS CLONE

(5 gallons/19 L, all-grain)
OG = 1.049 FG = 1.000
IBU = 31 SRM = 3 ABV = 6.4%

INGREDIENTS

8.5 lbs. (3.85 kg) Weyermann extra premium pale Pilsner malt
12 oz. (340 g) flaked corn
6 oz. (170 g) flaked oats
3.2 oz. (91 g) acidulated malt
3.1 mL Amylo 300 (amyloglucosidase enzyme)
18 AAU Citra® hops (hop stand) (1.5 oz./43 g at 12% alpha acids)
17.3 AAU Mosaic® hops (hop stand) (1.5 oz./43 g at 11.5% alpha acids)
2 oz. (57 g) Citra® hops (dry hop)
2 oz. (57 g) Mosaic® hops (dry hop)
2 oz. (57 g) Idaho 7® hops (dry hop)
½ tsp. yeast nutrient (10 min.)
½ Whirlfloc tablet (10 min.)
White Labs WLP001 (California Ale) or Wyeast 1056 (American Ale) or Safale US-05 yeast
¾ cup corn sugar (if priming)

STEP BY STEP

Mill the grains and dough-in targeting a mash of around 1.25 quarts of water to 1 pound of grain (2.6 L/kg) and a temperature of 145 °F (63 °C). Add 3.1 mL amyloglucosidase enzyme to mash and hold the mash at 145 °F (63 °C) for 45 minutes. Vorlauf until it runs clear, then sparge slowly with 170 °F (77°C) water, collecting wort until the pre-boil kettle volume is reached.

Total boil time is 60 minutes, with no boiling hops. Add Whirlfloc and yeast nutrient with 10 minutes left in the boil. Drop temperature of wort to 180 °F (82 °C) and add the whirlpool hops. Chill the wort to 67 °F (18 °C) and aerate thoroughly. Pitch rate is 1,000,000 cells per mL per degree Plato. Add dry hops when gravity is around 1.015 and then perform diacetyl rest. Cold crash and carbonate the beer to around 2.7 volumes of CO₂.

DANVILLE BREWING CO.'S BRUTUS CLONE

(5 gallons/19 L, partial mash)
OG = 1.049 FG = 1.000
IBU = 31 SRM = 4 ABV = 6.4%

INGREDIENTS

4.25 lbs. (2 kg) Pilsen dried malt extract
1 lb. (0.45 kg) Pilsner malt
12 oz. (340 g) flaked corn
6 oz. (170 g) flaked oats
3.2 oz. (91 g) acidulated malt
3.1 mL Amylo 300 (amyloglucosidase enzyme)
18 AAU Citra® hops (hop stand) (1.5 oz./43 g at 12% alpha acids)
17.3 AAU Mosaic® hops (hop stand) (1.5 oz./43 g at 11.5% alpha acids)
2 oz. (57 g) Citra® hops (dry hop)
2 oz. (57 g) Mosaic® hops (dry hop)
2 oz. (57 g) Idaho 7® hops (dry hop)
½ tsp. yeast nutrient (10 min.)
½ Whirlfloc tablet (10 min.)
White Labs WLP001 (California Ale) or Wyeast 1056 (American Ale) or Safale US-05 yeast
¾ cup corn sugar (if priming)

STEP BY STEP

Heat 8 qts. (7.5 L) of water to about 156 °F (69 °C). Place crushed malts and grains in a muslin bag and submerge in the water. Stir in the dried malt extract and stir to dissolve, then add the Amylo. The temperature should stabilize around 145 °F (63 °C). Hold this mash at 145 °F (63 °C) for 45 minutes. Remove the grains and place in a colander to wash the grains with 4 qts. (3 L) of hot water. Top up the kettle to 5.5 gallons (24.6 L).

Total boil time is 10 minutes, with no boiling hops. Add Whirlfloc and yeast nutrient at the start of the boil. After the boil, drop temperature of wort to 180 °F (82 °C) and add the hop stand hops. Chill the wort to 67 °F (18 °C) and aerate thoroughly. Pitch rate is 1,000,000 cells per mL per degree Plato. Add dry hops when gravity is around 1.015 and then perform diacetyl rest. Cold crash and carbonate the beer to around 2.7 volumes of CO₂.



Barebottle Brewing Company



Lester Koga: Has been brewing for 10 years now and opened Barebottle Brewing Co. on July 15, 2016 with other Co-Founder, Mike Seitz. "It was all about creating a life around what we love — which is creating beer, making beer, and making it a profession."

DESCRIBE YOUR FIRST ENCOUNTER WITH A BRUT IPA?

My first brut IPA was Kim's beer. I had heard the rumblings around the city and I popped into Social Kitchen to try one for myself. It was dry, crisp, effervescent, and very refreshing. I ended up reaching out to Kim after that and told him I was interested in learning about making a brut IPA. He let me bring my whole staff over and he spent time with us going over the process, etc.

WHAT DO YOU THINK CHARACTERIZES THE STYLE?

I think there are several factors, one is being incredibly dry, i.e. very little residual sugar. It should finish at or near zero Plato. To what differentiates, in my mind, the brut to the traditional West Coast IPA is it uses all the modern, really hot hops like Citra®, El Dorado®, Mosaic®, Galaxy, etc. With a really clean, dry malt character.

WHAT DO YOU FEEL ARE KEY INGREDIENTS IN BREWING A BRUT IPA?

Keep it dry and keep it hoppy. We at Barebottle bastardize as many things as we can. I know most people would not think about making a hazy brut IPA. But for us, that was taking who we are and adapting this brut IPA philosophy and putting our spin on it. So we kind of took our hazy IPA grain bill and wanted to see what body it would add. One thing I noticed with



brut IPAs is they are so dry I wondered what would add more dimension to them. I wondered what cereal grains or yeast I could add to a brut IPA and would the enzyme chew through the yeast ester.

WHAT SPECIAL TECHNIQUES ARE INVOLVED IN BREWING A BRUT IPA?


So for us, adding the enzyme is definitely a special technique. We have tried three different ways now. First we added once the beer was at terminal gravity and that was with White Labs 001 (California Ale) yeast. The second one we did was BRUTS Lee and we added it around day 8 or 9, so a couple degrees before terminal gravity. On this most recent one (Mt. Brutus) we added it on day four of fermentation. One thing to remember with this style is to watch out for diacetyl, because you are restarting fermentation when you add the enzyme.

WHAT LESSONS HAVE YOU LEARNED FROM SUCCESSES OR FAILURES IN DEVELOPING YOUR BRUT IPA RECIPE?

So managing diacetyl would be number one to look out for. This is a new style and new way of brewing, so experimenting is so critical and it's also the fun part. Your choices will depend on what kind of brut IPA you want to brew — we wanted to bring that stone fruit character. Could we make a hazy stone fruit IPA that finishes at or around zero gravity? That has been my personal challenge.

WHAT DO YOU THINK THE FUTURE HOLDS FOR THE BRUT IPA STYLE?

I think, ultimately, it depends on the drinker. The consumer is the one who decides if the style will be as popular as the NEIPA. They are the ones who decide how popular it will be. I feel like the dryness factor is the number one arching of the style. It's meant to be effervescent and dry.

Ultimately, the fun of the challenge is looking at trends and innovating on them. 

BAREBOTTLE BREWING CO.'S MT. BRUTUS CLONE

(5 gallons/19 L, all-grain)
OG = 1.050 FG = 1.000
IBU = 61 SRM = 3.5 ABV = 6.6%



INGREDIENTS

9 lbs. 12.8 oz. (4.3 kg) 2-row malt
8 oz. (227 g) rolled wheat
3.2 oz. (91 oz.) flaked corn
0.32 mL Amylo 300
(amyloglucosidase enzyme)
25.2 AAU El Dorado® hops (0 min.)
(1.75 oz./49 g at 14.4% alpha acids)
21.2 AAU Mosaic® hops (0 min.)
(1.75 oz./49 g at 12.1% alpha acids)
4 oz. (113 g) Citra® hops (dry hop)
2 oz. (57 g) Mosaic® hops (dry hop)
2 oz. (57 g) El Dorado® hops (dry hop)
½ tsp. yeast nutrient (10 min.)
½ Whirlfloc tablet (10 min.)
GigaYeast GY054 (Vermont IPA) or
White Labs WLP095 (Burlington Ale)
or LalBrew New England yeast
¾ cup corn sugar (if priming)

STEP BY STEP

Mill the grains and dough-in targeting a mash of around 1.25 quarts of water to 1 pound of grain (2.6 L/kg) and a temperature of 149 °F (65 °C). Hold the mash at 149 °F (65 °C) for 45 minutes. Vorlauf until it runs clear, then sparge slowly with 170 °F (77°C) water, collecting wort until the pre-boil kettle volume is reached.

Total boil time is 60 minutes, with no boiling hops. Add Whirlfloc and yeast nutrient with 10 minutes left in the boil. After the boil, turn off heat, add hops, and whirlpool for 30 minutes. Chill the wort to 67 °F (18 °C) and aerate thoroughly.

Pitch rate is 1,000,000 cells per mL per degree plato. Add 0.32 mL Amylo 300 when gravity is around 1.011 and then perform a diacetyl rest. Add dry hops when gravity is around 1.000. Cold crash and carbonate the beer to around 2.7 volumes of CO₂.

BAREBOTTLE BREWING CO.'S MT. BRUTUS CLONE

(5 gallons/19 L, partial mash)
OG = 1.050 FG = 1.000
IBU = 61 SRM = 3.5 ABV = 6.6%



INGREDIENTS

4.5 lbs. (2 kg) extra light dried malt extract
1 lb. (0.45 kg) 2-row malt
8 oz. (227 g) rolled wheat
3.2 oz. (91 oz.) flaked corn
0.32 mL Amylo 300
(amyloglucosidase enzyme)
25.2 AAU El Dorado® hops (0 min.)
(1.75 oz./49 g at 14.4% alpha acids)
21.2 AAU Mosaic® hops (0 min.)
(1.75 oz./49 g at 12.1% alpha acids)
4 oz. (113 g) Citra® hops (dry hop)
2 oz. (57 g) Mosaic® hops (dry hop)
2 oz. (57 g) El Dorado® hops (dry hop)
½ tsp. yeast nutrient (10 min.)
½ Whirlfloc tablet (10 min.)
GigaYeast GY054 (Vermont IPA) or
White Labs WLP095 (Burlington Ale)
or LalBrew New England yeast
¾ cup corn sugar (if priming)

STEP BY STEP

Heat 3 qts. (3 L) of water to about 161 °F (72 °C). Place crushed malts and grains in a muslin bag and submerge in the water. The temperature should stabilize around 149 °F (65 °C). Hold the mash at 149 °F (65 °C) for 45 minutes. Remove the grains and place in a colander to wash the grains with 3 qts. (3 L) of hot water. Top up the kettle to 5.5 gallons (24.6 L).

Total boil time is 60 minutes, with no boiling hops. Add Whirlfloc and yeast nutrient with 10 minutes left in the boil. After the boil, turn off heat, add hops, and whirlpool for 30 minutes. Chill the wort to 67 °F (18 °C) and aerate thoroughly.

Pitch rate is 1,000,000 cells per mL per degree plato. Add 0.32 mL Amylo 300 when gravity is around 1.011 and then perform a diacetyl rest. Add dry hops when gravity is around 1.000. Cold crash and carbonate the beer to around 2.7 volumes of CO₂.