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East*  
20 BREWING 12

**Brew iQ**  
By Precision Fermentation

Precision Fermentation's BrewIQ Fermentation Management System Delivered the Data to Help GABF-Winning Connecticut Brewery Bring the Haze Back to its Hazies



## THE PEOPLE

Edward Fabrycki, Jr. caught the homebrewing bug while living in San Diego in the 1990's. When he moved home to Connecticut in 2001, he brought along a dream to open a craft brewery. In 2006, the civil engineer started homebrewing and developing recipes with his accountant cousin, Tony Karłowicz, who discovered his fondness for craft beer as a college student in Vermont and wanted to build a brewery as well.

In 2012, Edward and Tony launched their brewery in Bloomfield, Connecticut, and named it Back East Brewing Company as an homage to Edward's homecoming "back east" after his stint "out west."

They hired brewer, American Brewers Guild grad, and former Navy submarine sonar technician Zach Anderson as cellar manager in 2021. So far, Zach, Edward, and cellar tech Megan Owen have trained on Precision Fermentation's BrewIQ fermentation management system and rely on it to automatically collect digital data every 20 minutes.

## THE BREWERY



Back East brews on a 20 bbl system and distributes throughout Connecticut and Western Massachusetts on draft and in cans. In addition to beer, the taproom serves wine, cider, and soda produced in-state along with rotating food truck fare, locally made light snacks, and live music weekly.

But as it should, what generates the most buzz is the beer.

Not only has the Porter won two Great American Beer Fest medals (one gold, one bronze), but Draft Magazine rated the flagship Ice Cream Man fifth on its list of Top 50 IPAs and ranked Rakautara IPA at #21. Creative sub-styles ranging from Cranberry Orange Lager and Chardonnay Barrel Aged Pilsner share nearly 30 taproom draft lines with the likes of Blackberry Cinnabun Pastry-Style Sour, Triple Scoop TIPA - Ice Cream Man on steroids - and Boom! Roasted white stout conditioned on Mexican coffee beans.



## THE CHALLENGES

Despite its GABF medals and longtime brewers at the helm, the New England brewery struggled to create a colloiddally stable haze in its New England IPAs. Or in other words, their hazies couldn't hang on to their haze.

Zach explains "We had a huge issue with the variable of pH to dissolved oxygen to original gravity, and thanks to BrewIQ's readings found that if you see your pH drop rapidly while DO is still kind of hanging out higher and then your gravity drops rapidly, your yeast is scavenging for oxygen, even though there's plenty of dissolved oxygen in there. It will then take up free amino nitrogen (FAN) from the proteins in the wort, which for a hazy IPA becomes a nightmare because you'll end up with a clear product."

The team talked about increasing the hop load, lowering the mash temp, and ultimately tried pitching at a higher rate ... to no avail. At that point, they recognized that they needed to get a handle on their data. A lot of it. And fast.

They wanted to assess factors like how the yeast reacted to different temperatures. But more importantly, they yearned to assemble all of that information and then analyze it, Zach says, "Not in a vacuum, parameter by parameter, but in an ensemble."

His goal? To holistically compare relationships between pitch and oxygenation rates batch to batch to observe the impacts on each variable and prepare for effects the crew either did or didn't anticipate.

Without BrewIQ they'd have been forced to compile their own data from sources like uber-frequent fermentation readings, trial and error, and advice from peers, textbooks, and the yeast supplier.

Edward estimates that to test myriad methods and issue these judgment calls would have required another full-time person and "a lot" of lab equipment.



## THE SOLUTION

Instead, Back East discovered Precision Fermentation, whose BrewIQ fermentation management system showed Edward and Zach how to solve their haze stability problem and highlighted others they didn't even know about.

"Mainly, we could see that if the yeast strain we were using doesn't get the oxygen it needs it will scavenge, consuming free amino nitrogen so drastically that those long-chain polypeptide proteins get torn apart. It's just that type of beast. It seems to need an excessive amount of oxygen." Zach adds "Certain yeast strains, even though they're promoted as a haze producer, tend to scavenge and eat up your proteins. Then you're left with practically nothing."

"It could damage your brand if you don't see it. With BrewIQ taking readings so frequently you can really pinpoint if something goes wrong within a very narrow window," Edward notes.


Edward and Zach appreciate the added ability to monitor their fermentations remotely and set alarms to alert them if any numbers fall or approach falling outside their custom-set specs. They can see effects they didn't expect and receive warnings that indicate they may want to check on the tank.

"It's done wonders for the fine-tuning process," Zach reports.

"The alarms are really beneficial," adds Edward. "We've got time, as opposed to maybe having missed that short window because we didn't look at the data."

Once Edward and Zach added up all the data to identify their yeast as the culprit for their hazies losing their luster, they switched strains, relieved to rely on data instead of guesswork to track the experiment's results.

"It solved our problem," Edward says. "And it helped the brewery - not just because it increased our efficiency in terms of our pitch rate and that we're able to create a better product long term but we switched to a less expensive yeast that saves more money than I think we'd like to tell you!"



“We went from having an idea of what we thought might be happening to being able to see and reflect consistently and follow historical trends to predict our outcomes going forward,” he continues. “We’re also able to get beer out faster because we know when it’s done. It’s not sitting around because we’re going, ‘Okay, I hope it’s done. We’re able to see that quantitatively.”

“I would spend a lot more time pulling my hair out,” Zach agrees. “I’m able to be more effective as an employee, as are all the people in the cellar. We get answers faster so more gets done.”

Edward emphasizes that the brewery easily recovered the monthly fee for the BrewIQ just by freeing up the labor hours he would have spent trying to unearth the root of his original issue.


“There’s no doubt in my mind that those dollars add up way faster than the cost of being able to get data from BrewIQ,” he says. “This, I will say, hands down, was well worth the money we put into it. And continues to be.”

Zach describes BrewIQ as a guarantee that, beyond the financials, delivers intangibles that give him a warm fuzzy feeling. Yes, he actually said “warm fuzzy.” Twice.

“During any given cycle, I’m feeling good about the current fermentation and that the next is going to go just as well” he says. “Not like, ‘I’m not sure when to order yeast, just in case order some...’ We’re always trying to keep things lean, and now we’re better prepared.”

Edward adds that he and Zach value being able to serendipitously pull something from the data that puts us in a direction where we might not have gone. “In terms of maybe a style that we wouldn’t have attempted before. Now we have more confidence that if it doesn’t work we’ll be able to see why.”

“I’ve been in the industry long enough to watch a fair amount of fermentation processes, and using the BrewIQ is enlightening,” he says. “You’re watching strains of yeast that have been around for a long time, seeing how they perform.”



You can find that some of the data, even in educational books about brewing, are not exactly correct. And there's what the labs tell you. But some conditions are influenced simply by the equipment and the technique you're using and you'll end up with a spectrum of performance characteristics for a given yeast. Now we know how it works here because we've seen the data."

Edward and Zach look forward to using BrewIQ to precisely calculate measurements for scaling up recipes from the pilot system and planning for equipment additions. Leadership is committed to enlisting Precision Fermentation to aid in these expansions, growing because of and alongside the company.

"They're very proactive in looking at our data, reaching out and going, 'I noticed this. Were you guys aware of it?' It's been one of our better experiences dealing with a vendor for any type of technology," Edward says.

The cellar crew meets with account manager Matt Brower monthly, where, as Edward says, "We just talk. 'How are things going? Are they progressing as expected? Are there any issues that you'd like to dig further into?' There's a constant back and forth to determine if we're good, where we are, what direction we want to take."

"They're also interested in continuously improving their products," continues Edward, who notes Back East updated its original BrewIQ with Precision Fermentation's next-gen SaniStation CIP station.

"Not because the other one didn't work. Because this one is better," he marvels. "When developing an upgrade, it's one thing to overcome the technical hurdles, let alone do anything with an interface that's already working."

"It's evolving fast, and we're part of the process. It's very nice to know that the feedback we provide if it makes sense, ends up in the next version of the software," Zach says. "I see value in it, for them to fix anything that even just one customer has a problem with but maybe even take, gee, some of our ideas. This is huge because, you know, everybody has their wish list!"