BrewMonitor at Trophy Brewing Company

Web-Based Fermentation Monitoring Saves Time and Effort While Ensuring Confidence in Beer Quality and Consistency

Craft Beer in Support of the NC Triangle Community Lifestyle

Based in Raleigh, North Carolina, Trophy Brewing Company uses innovative brewing as a starting point for their broader goals, as stated on their website, to "bring people together through craft beer, thoughtful food and intentional community." This approach has been very successful, as evidenced by their steady growth in production since opening their first brewpub location in 2012. Today, Trophy's single production facility serves their three restaurant locations and wholesale distribution throughout the Triangle area (Raleigh/Durham/Chapel Hill).

As one of the larger breweries in the area, the Trophy production team keeps quality and consistency top of mind in order to safeguard one of the foundational elements of their success: innovative beer that both excites and exceeds expectations, every time. Operating from a single production facility, the team operates two brewing systems, a 3-barrel pilot system and a 20-barrel brewhouse, both of which support production across a large number of brands. The brewing team is usually moving four or five brands into the market at any one time – half limited-release and half flagship brands – with about 70% of their distribution external to their own restaurants. With a large array of styles being produced and marketed at all times, the team must work closely with the business to ensure that operations are as efficient as possible.

The Challenge: Ensuring Beer Quality Across Many Different Brands

Les Stewart, Chief Beer Officer with Trophy Brewing, summarizes his brewing role as a "30 thousand-foot view," but day-to-day he is very connected with how his team delivers the quality, quantity and variety of product required to feed the company's greater business goals. On any particular day, he is writing recipes, overseeing schedules, adjusting distribution levels, working on marketing details, and communicating with the business owners to distill requirements down to actionable production plans. Les' responsibilities put him at the center of how Trophy's beer production interfaces with the rest of its business and the market, so beer quality and consistency are essential elements of his success, every day.

Benefits

- Remote fermentation monitoring saves time & effort

- Real-time data streamlines troubleshooting of problem fermentations and helps prevent future issues

- Detailed fermentation data enables highly efficient quality control, requiring fewer man-hours, and enabling better results

- Real-time visibility highlights problems sooner, saving tank-time and cost, plus simplifies new brand R&D

> "If I'm away in Boston, waking up in a cold sweat, worried that yeast didn't get pitched or something like that, being able to grab my phone or computer, pull up BrewMonitor and know that the beer is fermenting away and everything's OK – that's what I love most about it. The user interface is really easy, and it's so easy to quickly check on details at a level that we otherwise haven't been able to before, much less at the tip of our fingers!"
>
> *- Les Stewart, CBO, Trophy Brewing Co.*

BREWMONITOR™ SYSTEM

In particular, flagship beer consistency presents day-to-day challenges. Extra care is required to ensure that every batch reflects the original intent of the recipe, and fermentation variability is kept to a minimum. Any change between batches can have a negative impact on customers' experience. Fermentation variability can also be costly, adding many man-hours, from tracking down and fixing production problems to discussing and remediating product issues with distributors.

Efficient fermentation management has a large effect on Trophy's business, and it can be difficult. Les explained, "The problem is, you don't realize that something has gone wrong in your fermentation until a couple of days after the fact. You might see a bad reading and because you are sampling daily, you have to wait until the next day to confirm that the issue is real." He pointed out that options to fix problems and save a batch are limited but these options are eliminated once you no longer have active yeast. As he described it, the unfortunate result of such problems can be a "complete loss of beer, or otherwise a beer you don't love."

Further, as Les' day-to-day responsibilities culminate in putting beer on the market, having systems in place that ensure the quality of flagships and other repeated beer, either throughout the year or seasonally, has a big impact on his job. Being able to offer a product with complete confidence that there will be no variances going forward is critical to ensuring positive customer experiences and satisfied distribution partners.

The Solution: How Continuous Sampling and Real-Time Fermentation Monitoring is Helping Trophy Brewing Co.

Les learned about Precision Fermentation in 2018 and started by monitoring a single tank. Currently, he is monitoring between one and three tanks most of the time, because he sees great value in this new method of sampling and measurement, both to his product and to Trophy's business.

He explained how this approach improves his brewing team's processes and effectiveness, "Traditionally, we have brewers that will go out daily and take gravities and run pHs and do some sensory analysis on fermentations as they progress, but this would only happen at exactly one point during that day. That is a really different thing than looking at BrewMonitor, where I get the ability to really follow a trajectory over time. That's particularly important with ales and fast-fermenting beers, because in a matter of hours dissolved oxygen drops, and watching that progression can tell us a lot about how that fermentation will look going forward." In addition to continuous visibility into traditional metrics, he noted the value of accessing data that has been previously unavailable to brewers. He said, "We're also watching other metrics that we've never looked at – conductivity, for example – and this allows us to learn about how these metrics impact a fermentation's trajectory and fermentation health. BrewMonitor is giving us a view into yeast health that we wouldn't have the ability to theorize about otherwise."

The Trophy team is leveraging BrewMonitor to help them more easily manage consistency across their brands. Les explained, "The system allows us to make sure that we're seeing not just similar fermentation trajectories inside of brands we want to repeat, but rather exactly the same. We're not just watching gravity trends but we're also watching DO and pH trends in a way we haven't been able to before. And all of this can overlay on top of each other and tell us whether or not we're really producing the same beer, or if we should expect to see some differences. And when we see differences, that's when we start to look at what we did that created these differences, and what we need to change to make sure that we're maximizing our brand consistency."

Les commented about how BrewMonitor can help improve brewing operations and save money. For example, Trophy recently moved toward offering more lagers, and real-time fermentation data has greatly simplified the team's ability to manage diacetyl rests and other timing issues. He explained, "Being able to watch fermentation data in real-time, as it comes out, has allowed us to dial in exactly how long we should expect for a tank to come up to a temperature that allows diacetyl rest, while simultaneously watching gravity and pH changes. We then match those with sensory analysis VDKs, to determine when we can crash. Understanding these general timelines is all important, because it gives us targets for how tight we can make those windows, and this ultimately can shorten the amount of time we keep our lagers in the tank. So, BrewMonitor has really helped us out, because we feel confident shaving a couple of days off of some of those fermentation windows. And tank time is money."

He continued, "We're watching for unexpected fermentation stops, fermentation stalling or pH stalling that could indicate that we may have a problem with the fermentation. And that allows us to react more quickly to some of those problems in a way that could save the beer." BrewMonitor gives the brewing team confidence in their flagship products but also helps them in development of single-batch beers. Les remarked, "BrewMonitor is super important for our flagship brands, but it is also very interesting when we do one-off brands. The system allows us to learn faster and create assumptions about things that we do not have a lot of experience with, more quickly."

From all of the improvements made possible by BrewMonitor, Les' favorite aspect of using the system is the ability to "be anywhere," as he put it. "If I'm away in Boston, waking up in a cold sweat, worried that yeast didn't get pitched or something like that, being able to grab my phone or computer, pull up BrewMonitor and know that the beer is fermenting away and everything's OK – that's what I love most about it. The user interface is really easy, and it's so easy to quickly check on details at a level that we otherwise haven't been able to before, much less at the tip of our fingers!"

Les is looking forward to continuing to work with Precision Fermentation to add devices to more of his tanks. He concluded, "It has been really great to work with the Precision Fermentation team. They are very responsive when we've run into issues and I really appreciate the ability to think through things together. Beyond just the device and software, it just has been really nice working with them."

PRECISION FERMENTATION

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